中华医学会第十七届全国斜视与小儿眼科学术会议暨
中国斜视与小儿眼科学会(CAPOS)
美国斜视与小儿眼科学会(AAPOS)联合学术大会

Intercontinental Perspective of Pediatric Ophthalmology & Strabismus
AAPOS – CAPOS Joint Meeting

Sponser: AAO，ISA，ESA，APSPOS，IPOSC，IOA

2017年10月12-15日　上海国际会议中心

Shanghai, China, October 12-15, 2017

会　议　指　南
Program Book

主 办：中华医学会眼科学分会、
中华医学会眼科学分会斜视与小儿眼科学组(CAPOS)
美国斜视与小儿眼科学会(AAPOS)

承 办：天津市眼科医院与上海交通大学新华医院

协 办：山东省立医院、南京医科大学第一附属医院
复旦大学附属眼耳鼻喉科医院、上海交通大学第九人民医院
上海交通大学仁济医院

目录 / CONTENTS

1. 欢迎词 / Welcome Messages 2

1.1 Congress President -- Prof. Kanxing Zhao 2

1.2 Co-chair -- Prof. Scott Larson 3

1.3 President, AAPOS -- Prof. Derek Sprunger 4

2. 大会机构 / Congress Committees and Organizations 5

2.1 大会委员会 / Congress Committees 5

2.2 学术支持机构 / Supporting Organizations 7

3. 综合信息 / General Information 8

4. 会议参展公司 /Exhibitor Index 12

5. 学术活动安排 / Scientific Program 13

6. 论文汇编 / Abstract 21

6.1 主旨演讲 / Keynote Speaker 21

6.2 论文发言 / Free Paper 29

6.3 壁报交流 / Poster 67

6.4 书面交流 / Published Only 121

6.5 列题交流 / Title Listed 277

欢迎词 / Welcome Message

Kanxing Zhao

Dear friends and colleagues,

On behave of Chinese Association for Pediatric Ophthalmology and Strabismus, it is my great pleasure and honor to welcome you to attend the Intercontinental Perspective of Pediatric Ophthalmology & Strabismus, AAPOS(American Association for Pediatric Ophthalmology & Strabismus) –CAPOS(Chinese Association for Pediatric Ophthalmology & Strabismus) Joint Meeting in Shanghai, China.

I would like to convey my deepest gratitude to the organizers of CAPOS-AAPOS joint conference. I know they have worked hard to prepare a wonderful scientific program and outstanding cultural and social activities.I would also like to express my appreciation to Dr.Scott Larson, Dr, Wei Zhang, Dr.Xiaoli Kang et'al for their unwavering commitment to this conference.

I would also like to express my heartfelt thanks to our supporting organizations: AAO, ISA, ESA, IPOSC, APSPOS, IOA.

We have already nearly a thousand delegates from all over the world.I am truly grateful to all of you who have chosen to join us here in Shanghai for the CAPOS-AAPOS joint conference.Your participation have made all the preparatory efforts for this conference worthwhile.

Finally, I hope you get the chance to visit some of many attractions in Shanghai, make many new friends, and have a memorable stay in China.

Sincerely,

Kanxing Zhao
Congress chair CAPOS-AAPOS joint conference, 2017
President, Chinese Association for Pediatric Ophthalmology & Strabismus

欢迎词 / Welcome Message

Scott A. Larson

Welcome to this historic meeting! As the Program Chair for AAPOS, I am proud to be part of such a momentous occasion that brings together so many ophthalmologists dedicated to improving children's eye care and strabismus care from around the world to this wonderful location in Shanghai.

The program committees from AAPOS and CAPOS have been hard at work to bring you a wonderful scientific and social program. We hope you can take advantage of many of the presentations and symposia. In addition to being part of the educational sessions this meeting has to offer, I hope that this gathering will also foster relationships between attendees that will make our interactions last far beyond these short days and that our collaborations will continue to improve pediatric ophthalmology and strabismus care for our patients everywhere we practice.

Scott A. Larson, MD

Chair, AAPOS Program Committee

Member, AAPOS Board of Directors

William E. Scott Professor of Pediatric Ophthalmology

University of Iowa

欢迎词 / Welcome Message

Derek T. Sprunger

I would like to welcome each attendee to this historic collaborative meeting between the American Association for Pediatric Ophthalmology and Strabismus and the Chinese Association for Pediatric Ophthalmology and Strabismus. Our associations share common goals to treat vision problems for children and those suffering from strabismus in the most effective and caring way possible. We have a great deal we can learn from each other and for this reason we are so happy to be able to work together to organize this meeting. This gathering serves as an example of how we can reach across international borders and cultural divides to come together for the good of our patients and members. I hope that as a result of your participation in this event that you will continue your collaborative efforts and that AAPOS and CAPOS will enjoy a long and fruitful relationship.

Derek T. Sprunger, MD

President AAPOS

大会委员会 / COUNCILS AND COMMITTEES

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学术支持机构 / Supporting Organizations

美国眼科学会（AAO）

世界斜视学会（ISA）

国际小儿眼科与斜视理事会（IPOSC）

亚太斜视与小儿眼科学会（APSPOS）

欧洲斜视学会（ESA）

国际视能矫正师协会（IOA）

综合信息 / General Information

会议时间：2017 年10月12 - 15 日
会议地点：上海国际会议中心
上海浦东滨江大道2727号

会议语言：英文

会议注册及资料领取

1. 注册区地点：上海国际会议中心大厅

2. 工作时间：

10月12 日	09:00-20:00
10月13-14 日	08:00-17:30
10月15日	08:30-11:00

胸卡

所有参会人员进入会场，展厅及参加大会活动时需佩戴胸卡。胸卡遗失将不予补办，请妥善保管。未佩戴胸卡者，工作人员将有权谢绝其参与学术交流、参观展厅及其他大会活动。

胸卡颜色标示：红色 -VIP；
蓝色 - 正式参会代表；
黄色 - 工作人员；
绿色 - 参展企业人员。

用餐

本次会议仅为参加午餐卫星会的代表提供午餐盒饭，具体发放时间如下：

	午餐盒饭（12:30-13:00）
10月13日	卫星会会场门口
10月14日	卫星会会场门口

学术交流信息：

1. 大会试片室位于上海国际会议中心三层3C会议室。
2. 工作时间如下：

10月12 日	14:00-17:00
10月13-14 日	07:30-17:30
10月15 日	07:30-11:30

请专题讲座专家和大会发言者在发言前至少提前半天，将中英文幻灯各一套提交大会试片室。

展板展示者须知

本次会议壁报区位于上海国际会议中心三层3D会议室。请纸质壁报作者于10月13日早上08:00-10:00自行张贴壁报，10月15日上午10:00以后自行撤除。

学分

本次会议正式注册代表均可获得国家级 I 类继续教育学分。项目编号为2017-07-02-217 (国)。需要学分的代表请在注册时务必提供相关个人信息。参会代表请于会议结束后三个月后登录中华医学会官网www.cma.org.cn，点击“继续教育”栏目，查找已发布项目，选择年度，输入姓名即可查询并打印电子学分证书。

展厅位置及开放时间

展厅位置：上海国际会议中心三层
展览时间：2017年10月13-14日　08:30-17:00

会议重要活动安排：

1. Presidential Dinner
   时间：10月13日 18:00
   地点：详见请柬
   注：请凭请柬参加

2.Gala Dinner
   时间：10月14 日 18:30
   地点：详见请柬
   注：请凭请柬参加或购票（400元/人，可在大会注册区购买）

3.Night Cruise
   时间：10月13 日 20:00
   地点：详见请柬
   注：请凭请柬参加

Conference Date: October 12th-15th, 2017
Conference Venue: Shanghai International Convention Center
No. 2727 Binjiang Avenue, Pudong District, Shanghai
Conference Language: English

Registration and Brochure Release Desk:

1. Registration location: Entrance hall of Shanghai International Convention Center
2. Working hours:

October 12th 09:00-20:00
October 13th-14th 08:00-17:30
October 15th 08:30-11:00

Badges:

Badges are needed for all participants to enter the conference room, exhibition hall and attend other activities. The badge will not be made up when lost, please keep safely. Without wearing badges, the staff has the right to decline participant to enter into the academic activities, visit the exhibition hall and other conference activities.

Badges color indentification:

Red - VIP;
Blue - Official Delegate;
Yellow - Staff;
Green - Exhibitors.

Meals:

This meeting provides lunch boxes only for delegates attending the lunch satellite meetings. The time is as follows:

	Lunch box （12:30-13:00)
October 13th	Entrance of the Satellite meeting room
October 14th	Entrance of the Satellite meeting room

Academic activities information:

1. Speaker Ready Room is located in the Meeting room 3C, 3rd Floor of Shanghai International Convention center.
2. Working hours are as follows:

October 12th 14:00-17:00
October 13th-14th 07:30-17:30
October 15th 07:30-11:30

For all the speakers, please submit your presentation file (in MS PowerPoint format) to the Speaker Ready Room at least half a day prior to your presentation.

Guidelines for Poster Presentation:

The poster presentation area is located in the meeting room 3D, 3rd Floor of Shanghai International Convention Center. Please post the posters between 8:00 to 10:00 on October 13th; and withdraw after 10:00 on October 15th.

Credit

All the registered representatives can receive class I National Continuing Education credits. The item number is 2017-07-02-217 (National). Delegates who need credits must provide relevant personal information while register. Please login in the official website of Chinese Medical Association (www.cma.org.cn) three months after the meeting, click on "Continuing Education" column, search the published project, choose year, and input name to print electronic credit certificate.

Exhibition hall location and opening hours:

Location: 3rd floor, Shanghai International Convention Center
Exhibition time: 08:30-17:00 on October 13th-14th, 2017

Important social activities:

1. Presidential Dinner

Time: 18:00 on October 13th
Venue: Details in the invitation
Note: Attend by invitation ONLY

2.Gala Dinner

Time: 18:30 on October 14th
Venue: Details in the invitation
Note: Attend by invitation ONLY (60USD/person purchased in the Registration Area)

3.Night Cruise

Time: 20:00 on October 13th
Venue: Details in the invitation
Note: Attend by invitation ONLY

会议参展公司 /Exhibitor Index

公司名称	展位号
西安爱乐电子科技有限责任公司	01
长沙市双琦医疗科技有限公司	02
长沙视琦科技开发有限公司	03
石家庄乐勤生物技术有限公司	04
威盛纳斯（苏州）医疗器械有限公司	05-08
广州视景医疗软件有限公司	9-10
奥腾思格玛（中国）集团	11-12
五点三医疗科技有限公司	13-15
上海潇莱科贸有限公司	16
广州市博视医疗保健研究所	17
MIRA EXPORT S.A.	18
北京嘉铖视欣数字医疗技术有限公司	19-28
广州市辉乐医药科技有限公司	21
上海玄众医疗科技有限公司	22-23
广州市视加医疗仪器设备有限公司	24
广州市视正医疗器械有限公司	25
深圳市康视佳网络科技发展有限公司	26
西安华亚电子有限责任公司	29
天津市索维电子技术有限公司	30-31
合肥科飞视觉科技有限公司	32
北京思博特医疗器械有限公司	33
连云港市一明医疗科技有限公司	34
兆科药业（合肥）有限公司	35
伟伦医疗设备（苏州）有限公司	36
优丫优科技股份有限公司	38
长春市光电仪器有限公司	39-40
参天制药（中国）有限公司	
诺华制药有限公司	

2017: An Intercontinental Perspective of Pediatric Ophthalmology & Strabismus
AAPOS – CAPOS Joint Meeting, Shanghai, China, October 13-15, 2017
Final Program

Friday, October 13, 2017

8:00 AM – 8:05 AM Auditorium	**Opening Remarks & Welcome** Kanxing Zhao
8:05 AM – 8:15 AM Auditorium	**Keynote Speaker** Chinese-American Ophthalmic Cooperation: The Early Days David Robbins Tien
8:15 AM – 8:30 AM Auditorium	**Keynote Speaker /** Prof. Yushi He Lecture Strabismus and Pediatric Ophthalmology in China: Yesterday, Today, and Tomorrow Kanxing Zhao
8:30 AM – 8:45 AM Auditorium	**Keynote Speaker** Development of International Pediatric Ophthalmology and Strabismus – My Perspective Frank J. Martin, FRANZCO
8:50 AM – 9:35 AM Auditorium	**Free Paper Session – Vision – Sensory Fusion** Moderators: David A. Plager, MD & Xiaoquing Li
8:50 AM – 8:57 AM	Assessment of Visual Acuity in Normal Infant and Young Children Xiaoqing Li; Yiwen Cao
8:57 AM – 9:04 AM	Visual Acuity of Developmentally Delayed Infants Estimated Using a Near-Eye Optics Stimulator: From The Lab To The Clinic. Alfred L. Ochs, PhD; Bruce Doran; Tancy Castillo, CMA; Lauren Berger; Lance M. Siegel, MD
9:04 AM – 9:11 AM	The Effect of the Degree of With-the-Rule Aastigmatism on Visual Quality of Children Qi Zhao; Jing Gao; Lin Wang; Xiao-xia Wang; Yuan Sun
9:11 AM – 9:18 AM	Non-Organic Visual Loss in Children Zhaojun
9:18 AM – 9:25 AM	Sensory Fusion Rehabilitation in Patients Using Programable Alternating Occlusion of Vision Fields Igor E. Aznauryan, MD, PhD, DrSc; Satenik G. Agagulyan, MD; Erik I. Aznauryan, PhD candidate; Victoria O. Balasanyan, MD, PhD; Aleksander A. Shpak, MD, PhD, DrSc;
9:25 AM – 9:35 AM	Question and Answer Session
8:50 AM – 9:35 AM Yellow River Hall	**Free Paper Session – Ocular Findings – Public Health** Moderators: Saurabh Jain, FRCOphth & Li Li
8:50 AM – 8:57 AM	Ophthalmic Evaluation in Beta Thalassemia Neepa Thacker M. Dave, MD; Rashid Merchant, MD; Hrishikesh Punde, MD; Deepak Bhatt, MD
8:57 AM – 9:04 AM	Incontinentia Pigmenti Associated Ocular Anomalies of Pediatric Incontinentia Pigmenti Patients in China Jie Peng, MD; Qi Zhang, BSMed; Xinchun Long, BSMed; Qiujing Huang, MD; Yian Li, MD; Peiquan Zhao, MD
9:04 AM – 9:11 AM	Association Between TAO Susceptibility Genes and Disease Severity Hui Li; Zhirou Hu; Haiyan Xu
9:11 AM – 9:18 AM	KIF21A Gene Hotspot Region in Eight Chinese Families Associated with Congenital Fibrosis of the Extraocular Muscles Type 1 (CFEOM1) Lin Li; Qin Shen; Yingjie Zhang; Huimin Zhu; Caiwen Xiao; Jibo Zhou; Yao Fu; Xianqun Fan
9:18 AM – 9:25 AM	Evaluation of the Awareness of Pediatric Eye Health Among the Parents of Pediatric Patients Mahmut Oguz M. Ulusoy, MD; Mehmat Atakan, MD; Ali Kal, MD; Sertac Argun Kivanc, MD
9:25 AM – 9:35 AM	Question and Answer Session
9:35 AM – 10:10 AM	Break and Poster Viewing
10:10 AM – 11:15 AM Auditorium	**Free Paper Session – Strabismus Surgery** Moderators: Sumita Agarkar, MD & Chen Zhao
10:10 AM – 10:17 AM	Self-Perspective of Surgical Outcome in Adults Strabismus Xinping YU
10:17 AM – 10:24 AM	The Effect of Preservation of Anterior Ciliary Vessels on Blood-Aqueous Barrier Functions During the Horizontal Strabismus Pan Meihua; Yang Mei

10:24 AM – 10:31 AM	The Location of the Eye's Frontal Equator and Its Role in the Effectiveness of the Horizontal Muscle Recession. A New Method of Recession Dosing in Esotropia Igor E. Aznauryan, MD, PhD, DrSc; Victoria O. Balasanyan, MD, PhD
10:31 AM – 10:38 AM	Comparison Between Medial Rectus Pulley Fixation and Augmented Recession in Children with Convergence Excess and Variable-Angle Infantile Esotropia Heba M. Fouad, MD, PhD, FRCOphth; Mohamad A. Abdelhakim, MD, PhD; Ahmed Awadein, MD, Phd, FRCOphth; Hala M. Elhilali, MD, PhD
10:38 AM – 10:45 AM	A Special Case with 'Consecutive Esodeviation' Indicates the Challenge of Moderate DVD with A Pattern Deviation in Diagnosis and Surgical Outcome Chen Zhao
10:45 AM – 10:52 AM	Comparison of Bilateral Medial Rectus Muscle Plication and Resection for Treatment of Convergence Insufficiency Type of Intermittent Exotropia Xi Wang, MMed; Longqian Liu, PhD, MD; Bingjie Chen, PhD; Wenqiu Zhang, MD
10:52 AM – 10:59 AM	Early Results of Slanted Lateral Rectus Recession Combined with Inferior Oblique Recession for Intermittent Exotropia with Convergence Insufficiency and Inferior Oblique Overaction Liu Yan; Zhang Ren-Ze
10:59 AM – 11:06 AM	The Surgery Characters of A-V Pattern after Concomitant Strabismus Treatment Xi Wu; Qing-Yu Meng
11:06 AM – 11:16 AM	Question and Answer Session
10:10 AM – 11:15 AM Yellow River Hall	**Free Paper Session – Retinopathy of Prematurity – Retina – Oculoplastics** Moderators: Morgan Yang & Zhou Lianhong
10:10 AM – 10:17 AM	A Prediction Model for Retinopathy of Prematurity: Primary Results from the Postnatal Growth and ROP (G-ROP) Study Guishuang Ying, PhD; Gil Binenbaum, MD; James Schaffer, MS; Lauren A. Tomlinson, BA
10:17 AM – 10:24 AM	Treatment Effect of Threshold Disease in ROP Yi-shuang Xiao; Jiang-tao Xu; Si-qi Wu
10:24 AM – 10:31 AM	Early Recurrence of Retinopathy of Prematurity after Initial Intravitreal Ranibizumab Therapy - Experience From a Tertiary Referral Center in Abu Dhabi, UAE. Abeer K Al Ali, Dr; Tin K. Chan, Dr; Ahmed A. Al Barky, Dr; Fatima A. Habroosh; Dr; Manal Alzaabi, Dr; Rawdha Al Nuaimi, Dr; Amna Al Mazmi, Dr; Habibullah Eatamadi, Dr
10:31 AM – 10:38 AM	Expression of Retinal Caspase-3 in Premature Lid-Opening Myopia Animal Model Zhou Lianhong; Cai Li
10:38 AM – 10:45 AM	Staged Lensectomy and Posterior Vitrectomy in Advanced Pediatric Vitreoretinal Diseases Ping Fei; Qi Zhang; Haiying Jin; Kaiqin She; Peiquan Zhao
10:45 AM – 10:52 AM	The Epidemiology and Etiology of Pediatric Enucleation in North China, 2001-2015 Jing Zhang; Lixin Xie
10:52 AM – 10:59 AM	A 6 Year Review on Preseptal and Orbital Cellulitis and the use of Steroids in Its Management Within Our Tertiary Centre in Abu Dhabi Rawdha K. Alnuaimi, MBBS, iBSc; Tin Chan, MBBS, FRCOphth; Fatima Habroosh, MBBS; Iman Hammadi, MBBS; Manal Alzaabi, MBBS; Abdelqadir Alali, MBBS; Habibullah Eatamadi, MBBS, FRCOpth
10:59 AM – 11:06 AM	A Retrospective Review of 8 Cases of Infant Fibromatosis in Orbit Sun Chunhua; Lin Jinyong; Zhao Kanxing; Zhao Hong; Wang Yuchuan
11:06 AM – 11:16 AM	Question and Answer Session
11:25 AM – 12:35 AM Auditorium	**Pediatric Corneal and External Disease** Organizer: Dominique Thouvenin Moderators: Dominique Thouvenin & Weiyun Shi
11:25 AM – 11:35 AM	Blepharitis and Rosacea in Children Serge Doan
11:35 AM – 11:45 AM	Surgical Treatment for Limbal Dermoid Weiyun Shi
11:45 AM – 11:55 AM	Conjunctivitis in Children Radhika Tandon
11:55 AM – 12:05 PM	Corneal Grafts and Keratoprosthesis in Children Ken Nischal
12:05 PM – 12:15 PM	Dry Eye in Children Zuguo Liu
12:15 PM – 12:25 PM	Refractive Surgery in Children Courtney Kraus
12:25 PM – 12:35 PM	Question and Answer Session

11:25 AM – 12:35 AM Yellow River Hall	**Retina and Retinopathy of Prematurity** Organizer: Shuan Dai Moderators: Shuan Dai & Peiquan Zhao
11:25 AM – 11:35 AM	Infant Management During ROP Laser Treatment – Observations from Children's National Health System Marijean Miller, MD
11:35 AM – 11:45 AM	ROP Screening in China – Problems and Solutions Yi Chen
11:45 AM – 11:55 AM	Current Concepts in the Management of ROP Dr. Dinesh Talwar
11:55 AM – 12:05 PM	Surgical Treatment for Advanced ROP Peiquan Zhao
12:05 PM – 12:15 PM	The Set and Practice of ROP Screening Standard in China Xiaoxin Li
12:15 PM – 12:25 PM	Telemedicine in ROP Screening – The Canadian Experience Nasrin Tehrani
12:25 PM – 12:35 PM	Question and Answer Session
12:35 PM – 1:50 PM	Lunch and Poster Viewing
12:50 PM – 1:50 PM Auditorium	**Novartis Symposium**
1:50 PM – 3:00 PM Auditorium	**Ocular Oncology** Organizer: Sonal Farzavandi Moderators: James Elder & Junyang Zhao
1:50 PM – 2:00 PM	Diagnosis and Management of Intraocular Retinoblastoma Aparna Ramasubramanian, MD
2:00 PM – 2:10 PM	Detection of Metastatic Retinoblastoma James Elder
2:10 PM – 2:20 PM	Tumor Resection with Chemotherapy for Retinoblastoma Junyang Zhao
2:20 PM – 2:30 PM	Retinoblastoma Management – The Developing Country Story Vikas Khetan, MD
2:30 PM – 2:40 PM	Comprehensive Management of Ocular I Tumors in Children Renbing Jia
2:40 PM – 2:50 PM	Management of Orbital Tumors in Children Lay-Leng Seah, MD, FRCS, FRCOphth
2:50 PM – 3:00 PM	Question and Answer Session
1:50 PM – 3:00 PM Yellow River Hall	**Oculoplastics** Organizer: Scott Larson, MD Moderators: Christie L. Morse, MD & Xueliang Feng
1:50 PM – 2:00 PM	Orbital Floor Fractures in Children Keith D. Carter, MD, FACS
2:00 PM – 2:10 PM	Surgical Management of Congenital Ptosis Xianqun Fan
2:10 PM – 2:20 PM	Dog Bite Trauma to the Face – When, Where and Why Dogs Attack Ron W. Pelton, MD, PhD, FACS
2:20 PM – 2:30 PM	Kids Lids, Pediatric Eyelid Inflammations Philip R. Rizzuto, MD, FACS
2:30 PM – 2:40 PM	Congenital Eyelid Surgery Juan Ye
2:40 PM – 2:50 PM	Is Propranolol the First Choice Treatment for All Infantile Hemangiomas? David A. Plager, MD
2:50 PM – 3:00 PM	Question and Answer Session
3:00 PM – 3:30 PM	Break and Poster Viewing
3:30 PM – 5:00 PM Auditorium	**ESA Symposium: Strabismus** Organizer: John Sloper Moderators: John Sloper & Hu Liu
3:30 PM – 3:40 PM	Botulinum Toxin in the Treatment of Strabismus Rosario Gomez de Liaño, Prof, MD
3:40 PM – 3:50 PM	Effect of Combining SR Recession with SO Tendon Expander on the Surgical Correction of DVD with A Pattern Strabismus Chen Zhao
3:50 PM – 4:00 PM	Timing of Intermittent Exotropia Hu Liu
4:00 PM – 4:10 PM	Surgical Management of Incomitant Strabismus Saurabh Jain

4:10 PM – 4:20 PM	Orthoptic Investigation of Incomitant Strabismus Chris Timms, DBO(T)
4:20 PM – 4:30 PM	Updates on Surgical Procedure and Indications for Fadenoperation of Extraocular Muscles Dominique Thouvenin
4:30 PM – 4:40 PM	Adjustable Combined Recession and Resection (Scott Procedure) for Incomitant Strabismus John Sloper
4:40 PM – 5:00 PM	Question and Answer Session
3:30 PM – 5:00 PM Yellow River Hall	**Cataract** Organizer: Serena Wang Moderators: Serena Wang & Zhigang LI
3:30 PM – 3:40 PM	IOL Defects Erick Bothun
3:40 PM – 3:50 PM	How to Survive YAG Laser Capsulotomy on a Child David Stager, Jr., MD, FAAP, FACS
3:50 PM – 4:00 PM	Identification and Functional Study of Pathogenic Genes in Congenital Cataract Xingchao Shentu
4:00 PM – 4:10 PM	Pediatric Uveitis Cataract Surgery Serena Wang, MD
4:10 PM – 4:20 PM	Five Year Outcomes of the Infant Aphakia Treatment Study Scott R. Lambert, MD
4:20 PM – 4:30 PM	Updates in Surgical Management of Congenital Cataract Hong Yan
4:30 PM – 4:40 PM	Management of the Posterior Capsule in Pediatric Cataract Surgery Deborah VanderVeen, MD
4:40 PM – 5:00 PM	Question and Answer Session

Saturday, October 14, 2017

8:00 AM – 8:15 AM Auditorium	**Keynote Speaker** / Prof. Jiaqi Liu Lecture A New Generation Random-dot Stereogram (RDS) Shaoming Yan
8:15 AM – 8:30 AM Auditorium	**Keynote Speaker** Amblyopia and Binocular Function John Sloper
8:35 AM – 9:40 AM Auditorium	**Free Paper Session – Strabismus Surgery** Moderators: Daniel Karr & Yueping li
8:35 AM – 8:42 AM	Inverse-Knapp Procedure for the Treatment of Severe Inferior Rectus Palsy li Yueping
8:42 AM – 8:49 AM	Comparisons Between Different Surgical Procedures for Congenital and Acquired Inferior Rectus Weakness: Inverse Knapp Procedure Versus Integrated Anterior Transposition of Inferior Oblique Muscle Procedure Yatu Guo; Xin Guo; Shiqiang Yang; Xia Chen; Wei Zhang; Lina Zhu; Yueping Lee; Kanxing Zhao
8:49 AM – 8:56 AM	The Efficacy of Superior Oblique Posterior Tenotomy in the Treatment of A-Pattern Strabismus Without Ocular Intorsion Yan Wei; Xiao-li Kang
8:56 AM – 9:03 AM	The Effect of Superior Oblique Tucking on the Bielschowsky Head Tilt Test Liping Chen; Wei Zhang
9:03 AM – 9:10 AM	Analysis of the Influence of Inferior Oblique Muscles Weakening for Objective Rotation Degreees of Strabismus Huifang Han
9:10 AM – 9:17 AM	Clinical Observation on Transposition Apodeum of Rectus Treatment on Ocular Torticollis Lingyong Meng; Dexin Meng
9:17 AM – 9:24 AM	Suture Fixation of Globe to the Orbital Wall for Complicated Strabismus Jianhua Yan; Yun Wen; Zhonghao Wang
9:24 AM – 9:40 AM	Question and Answer Session
8:35 AM – 9:40 AM Yellow River Hall	**Free Paper Session – Amblyopia** Moderators: Rosario Gomez de Liano, MD & Lixia Feng
8:35 AM – 8:42 AM	Fixation Patterns of Amblyopia with Eccentric Fixation Assessed by the MP-1 Microperimeter Shu Wang; Sujia Wu; Wen Wen; Hong Liu
8:42 AM – 8:49 AM	Choroidal Thickness and Macular Ganglion Cell Complex Thickness In Hyperopic Anisometropic Amblyopia Yang Fu
8:49 AM – 8:56 AM	Study of the Perception of Visual Motion in Children with Anisometropic Amblyopia Using Functional MRI Jingcong Zhao; Wei Zhang; Ming Su

8:56 AM – 9:03 AM	The Clinical Observation of Wearing RGP for Pediatric Patients with Anisometropic Amblyopia Wang Ping
9:03 AM – 9:10 AM	Changes of Spontaneous Brain Activities in Patients with Strabismic Amblyopia: A Resting-State fMRI Study Li Qian; Yang Xubo; Lu Lu; Huang Xiaoqi; Gong Qiyong; Liu Longqian
9:10 AM – 9:17 AM	Depression Therapy for Older Children with Anisometropia Amblyopia Feng Dong
9:17 AM – 9:24 AM	Monitoring Objective Compliance with Intermittent Occlusion Therapy Glasses Jingyun Y. Wang, PhD; Jing Jin, MD; Stefanie L. Davidson, MD; Ayesha Malik, OD; Ruth Shoge, OD; Noah Tannen, OD; Tara Franz, OD; Erin Jenewein, OD
9:24 AM – 9:31 AM	Study of Binocular Balance and Microsaccade in Clinical Treated Amblyopia Lixia Feng; Yao Chen; Jiafeng Wang
9:31 AM – 9:40 AM	Question and Answer Session
9:40 AM – 10:10 AM	Break and Poster Viewing
10:10 AM – 11:20 AM Auditorium	**Free Paper Session – Strabismus – Strabismus Surgery – Nystagmus** Moderators: Scott A. Larson, MD & Xueliang Feng
10:10 AM – 10:17 AM	The Relationships Between Stereoacuity and Age, Angle of Deviation, Control Grade in Intermittent Exotropia Xueliang Feng; Nan Jia
10:17 AM – 10:24 AM	Far Distance Control Scores for Assessing Intermittent Exotropia Cuiqing Wang, MD; Lihua Wang, MD; Meiyu Ren, PhD; Qi Wang, PhD
10:24 AM – 10:31 AM	Efficacy of Botulinum Toxin in the Treatment of Convergence Spasm Sonali S. Gupta, FRCOphth; Jason Gan, BSc; Saurabh Jain, FRCOphth
10:31 AM – 10:38 AM	Paralytic Esotropia of Small Angle Suffered from Paralysis of Sixth Nerve Xiaoqing Li; Jing Wen; Yiwen Cao
10:38 AM – 10:45 AM	Role of Preoperative Prism Trial in Predicting Postoperative Diplopia Rama P. Kalantri, MS; Srikanth Ramasubramanian, MS; Meenakshi Swaminathan, MS
10:45 AM – 10:52 AM	The Treatment for the Strabismus Induced by Functional Endoscopic Sinus Surgery Likun Ai
10:52 AM – 10:59 AM	Comparison of Outcome for Anomalous Head Posture Following Extraocular Muscle Surgery in Children with Oculocutaneous Albinism Operated Before and After 3 Years of Age Karthikeyan A. Sadagopan, MD, FRCS; Lei Zhu, MD; Liz Chen, MD; Dennis Lam, FRCO
10:59 AM – 11:06 AM	Analysis of Implantable Extraocular Muscle Electrical Stimulation in Treating Congenital Nystagmus Zequn Miao; Lili Guo; Luojia Li; Lejin Wang
11:06 AM – 11:20 AM	Question and Answer Session
10:10 AM – 11:15 AM Yellow River Hall	**Free Paper Session – Anterior Segment – Cataract – Neuro-ophthalmology** Moderators: Edward Buckley, MD & Tao Yu
10:10 AM – 10:17 AM	Techniques of Minimally Invasive Anterior Segment Surgery in Children Tao Yu; Dongmei Qi; Hong Yang
10:17 AM – 10:24 AM	The Preoperative Evaluate for Congenital Cataract by UBM Daoman Xiang, MD, PhD; Lihong Chen, MD; Lanxiang Hu, BS; Shengfang Song, BS; Wanhua Xie, MD, PhD
10:24 AM – 10:31 AM	Influencing Factors of Prediction Refractive Error after Pediatric Cataract Surgery Yi Beixi
10:31 AM – 10:38 AM	Myopic Shift after Intraocular Lens Implantation in Children Less Than Two Years of Age Over A 2 Year Period Suma S. Ganesh, MS; Reena R. Gupta, MS; Sumita S. Sethi, MS
10:38 AM – 10:45 AM	Visual Outcomes of Dense Pediatric Cataract Surgery in Eastern China Mei-yu Ren; Fang-qin Ma; Li-hua Wang; Qi Wang
10:45 AM – 10:52 AM	Clinical Profile and Surgical Outcomes in Children with Posterior Lenticonus Sumita S. Agarkar, MD; Divya Jain, MD
10:52 AM – 10:59 AM	Range of Near Visual Acuity in Children with Pseudophakia Deepa R. John, MS; Melinda Lettitia; Thomas Kuriakose, FRCO
10:59 AM – 11:06 AM	Retinal Origin of Motion Direction Selectivity in the Superior Colliculus Xuefeng F. Shi, MD, PhD; Jad Barchini; Hector A. Ledesma; David Koren; Yanjiao Jin, MD; Xiaorong Liu, PhD; Wei Wei, PhD; Jianhua Cang, PhD
11:06 AM – 11:20 AM	Question and Answer Session
11:25 AM – 12:35 PM Auditorium	**Vision Screening** Organizer: Scott Larson, MD Moderators: Scott Larson, MD & Xuehan Qian

11:25 AM – 11:35 AM	Pediatric Vision Screening – Is It Useful? Simon Ko, FRCOphth.(HK), FRCS (Edin)
11:35 AM – 11:45 AM	Everything You Need to Know About Vision Screening Devices Daniel J. Karr, MD
11:45 AM – 11:55 AM	Vision Screening in Hebei Province, North China Ming Su
11:55 AM – 12:05 PM	StEPS – A Health Care Service to Detect Vision Problems in Preschool Children in NSW Frank J. Martin, FRANZCO
12:05 PM – 12:15 PM	Clinical Utility of Photoscreening Devices in the Office Setting David Silbert, MD, FAAP
12:15 PM – 12:25 PM	What We Got from Whole-Population Vision Screening in Preschool Children Xuehan Qian
12:25 PM – 12:35 PM	Question and Answer Session
12:50 AM – 1:40 PM Auditorium	**Santen Symposium**
11:25 AM – 12:35 PM Yellow River Hall	**Glaucoma** Organizer: James Elder Moderators: James Elder & Ningli Wang
11:25 AM – 11:35 AM	Genetics of Pediatric Glaucoma Alex Hewitt
11:35 AM – 11:45 AM	Microcatheter Assisted Trabeculotomy for Congenital Glaucoma Ningli Wang
11:45 AM – 11:55 AM	Aphakic Glaucoma William P. Madigan, MD
11:55 AM – 12:05 PM	Surgical Options in PCG after Failed Angle Surgery John L. Brookes, FRCOphth
12:05 PM – 12:15 PM	Topic to be determined Xinghuai Sun
12:15 PM – 12:25 PM	Glaucoma Secondary to Systemic Disease Sonal Dangda
12:25 PM – 12:35 PM	Question and Answer Session
12:35 PM – 1:50 PM	Lunch and Poster Viewing
1:50 PM – 3:00 PM Auditorium	**Pediatric Neuro-Ophthalmology/Genetic Disease** Organizer: Scott Larson Moderators: Gena Heidary, MD, PhD & Chen Zhao
1:50 PM – 2:00 PM	Practical Approach to Childhood Nystagmus Shuan Dai, FRANZCO
2:00 PM – 2:10 PM	Cortical Visual Loss in Children An-Guor Wang
2:10 PM – 2:20 PM	Albinism: An Update C. Gail Summers, MD
2:20 PM – 2:30 PM	New Tech in Nystagmus Lejin Wang
2:30 PM – 2:40 PM	Neuro-Ophthalmic Manifestations in Pediatric Neurodegenerative Disease Gena Heidary, MD, PhD
2:40 PM – 2:50 PM	Absent Abducens Nerve and SR in a Family with CFEOM Caused by Maternal Germline Mosaicism of KIF21A Mutation Chen Zhao
2:50 PM – 3:00 PM	The Functions of Superior Colliculus and Its Potential Roles in the Development of Amblyopia and Strabismus Xuefeng Shi
1:50 PM – 3:00 PM Yellow River Hall	**Orthoptics** Organizer: Xioyan Shan Moderators: Xioyan Shan & Ningdong Li
1:50 PM – 2:00 PM	Treatment of Symptomatic Convergence Insufficiency with Home-Based Computer Orthoptic Program Pamela A. Huston, CO
2:00 PM – 2:10 PM	Evaluation of Diplopia with Macular Disease Xioyan Shan
2:10 PM – 2:20 PM	Sensory Testing in Strabismus Patients Ronald Biernacki, CO, COMT
2:20 PM – 2:30 PM	Traditional Orthoptic Treatment Bruce A. Furr, CO, PhD
2:30 PM – 2:40 PM	Utilization of Fresnel Prisms in the Adult Diplopia Patient Cheryl McCarus, BS, CO, COMT, OSA
2:40 PM – 2:50 PM	CAPOS Speaker To be determined
2:50 PM – 3:00 PM	Question and Answer Session
3:00 PM – 3:30 PM	Break and Poster Viewing

3:30 PM – 5:00 PM Auditorium	**Strabismus Surgical Skills** Organizer: Stephen Christiansen, MD Moderators: Stephen Christiansen, MD & Wei Zhang
3:30 PM – 3:40 PM	Reoperation on Superior Oblique Palsy Wei Zhang
3:40 PM – 3:50 PM	Superior Oblique Surgery Stephen Christiansen, MD
3:50 PM – 4:00 PM	Oblique Surgery Under Microscope Xiaoli Kang
4:00 PM – 4:10 PM	Surgery for Exotropia Jonathan M. Holmes, MD
4:10 PM – 4:20 PM	Surgery for Cranial Nerve Six Palsy Gena Heidary, MD, PhD
4:20 PM – 4:30 PM	Strabismus Surgery for CN III Palsy Edward Buckley, MD
4:30 PM – 4:40 PM	Inferior Oblique Surgery Prof. Subhash Dadeya, MD
4:40 PM – 5:00 PM	Question and Answer Session
3:30 PM – 5:00 PM Yellow River Hall	**Preferred Practice Patterns** Organizer: David Robbins Tien Moderators: David Robbins Tien & Lihua Wang
3:30 PM – 3:40 PM	Intermittent Exotropia Scott Larson
3:40 PM – 3:50 PM	Diagnosis and Treatment of Amblyopia Tao Yu
3:50 PM – 4:00 PM	Management of A and V Pattern Strabsimus Monte Del Monte
4:00 PM – 4:10 PM	Prevention and Management of Myopia in Childhood Jason Yam
4:10 PM – 4:20 PM	Strabismus Examination in Childhood Lihua Wang
4:20 PM – 4:30 PM	Infantile Esotropia: Insights and Interventions Meenakshi Swaminathan, MD
4:30 PM – 4:40 PM	Best Practices for the Treatment of Accommodative Esotropia Scott R. Lambert, MD
4:40 PM – 5:00 PM	Question and Answer Session

Sunday, October 15, 2017

8:00 AM – 8:05 AM Auditorium	**Announcements and Closing Statements** Scott Larson, MD
8:05 AM – 8:20 AM Auditorium	**Keynote Speaker** Rectus Muscle Strengthening in Thyroid Eye Disease Monte Del Monte, MD
8:25 AM – 9:45 AM Auditorium	**Myopia: Causes, Screening, Treatment, Prevention** Organizer: Jason Yam Moderators: Jason Yam & Yan Wei
8:25 AM – 8:35 AM	Environmental Influence of Myopia Kathryn Rose
8:35 AM – 8:45 AM	Epidemiology of Myopia in Shanghai Xun Xu
8:45 AM – 8:55 AM	Emmetropisation, Peripheral Refraction and Myopia Control Ian Morgan, PhD
8:55 AM – 9:05 AM	Outdoor Intervention from Evidence to Practice Mingguang He
9:05 AM – 9:15 AM	Update in the Use of Atropine for Myopia Control Audrey Chia
9:15 AM – 9:25 AM	Myopia and Genetics Deborah Alcorn
9:25 AM – 9:35 AM	Question and Answer Session
9:35 AM – 10:15 AM	Break and Poster Viewing
10:15 AM – 11:15 AM Auditorium	**Difficult Non-Strabismus Problems in Pediatric Ophthalmology** Organizer: Scott Larson Moderators: Scott Larson & Xiaoli Kang
10:15 AM – 10:25 AM	A Neuro Ophthalmic Dilemma in the Pediatric Clinic Saurabh Jain, FRCOphth

	10:25 AM – 10:35 AM	Intractable External Disease in Children Xuguang Sun
	10:35 AM – 10:45 AM	Surgical Management of Difficult Situations in Pediatric Cataract Surgery Sudarshan Khokhar, MD
	10:45 AM – 10:55 AM	Uveitis in Children Peizeng Yang
	10:55 AM – 11:05 AM	Neuro-ophthalmology Sharon Tow
	11:05 AM – 11:15 AM	Question and Answer Session
11:15 AM – 12:30 PM Auditorium		**Difficult Strabismus Problems** Organizer: Monte Del Monte Moderators: Monte Del Monte & Wei Zhang
	11:15 AM – 11:25 AM	Case 1 An-Guor Wang
	11:25 AM – 11:35 AM	Case 2 Edward Buckley, MD
	11:35 AM – 11:45 AM	Case 3 Kanxing Zhao
	11:45 AM – 11:55 AM	Case 4 Rosario Gomez de Liaño, Prof, MD
	11:55 AM – 12:05 PM	Case 5 Jonathan M. Holmes, MD
	12:05 PM – 12:15 PM	Question and Answer Session
12:15 PM		End of Meeting

主旨演讲 / Keynote Speaker

Chinese - American Ophthalmic Cooperation: The Early Days

David Robbins Tien

David Robbins Tien is originally from Philadelphia, Pennsylvania. His parents both immigrated to the USA; his mother from England and his father from China. He studied political philosophy in college, and spent at post-graduate year at Peking University from 1978-1979 as one of the first American students admitted after diplomatic relations were restored between the U.S. and China. He returned to the University of Michigan where he received his M.D. in 1983. After two years of general practice in Puerto Rico, he served his ophthalmology residency at New York University Medical Center, and then a fellowship in pediatric ophthalmology and strabismus at Manhattan Eye, Ear and Throat Hospital. Since then he has been in subspecialty practice in pediatric ophthalmology and strabismus in Providence, Rhode Island and was chief of ophthalmology at Hasbro Children's Hospital for 20 years. He is clinical associate professor of surgery (ophthalmology) at Brown University Medical School.

Abstract for Keynote Address:

Abstract of "Chinese-American Ophthalmic Cooperation: The Early Days" : There is a fascinating history of mutually beneficial interaction in ophthalmology between Americans and Chinese starting almost 200 years ago, a few decades after the arrival of the first American ship in China in 1784. Peter Parker, M.D., the first American doctor to practice in China, was also one of the first to specialize in ophthalmology. His efforts spurred the development of modern medicine in China and left a legacy directly traceable to modern Chinese ophthalmology.

Strabismus and Pediatric Ophthalmology in China: Yesterday, Today, and Tomorrow

Kanxing Zhao

Kanxing Zhao M.D., Ph.D.

Kanxing Zhao graduated from Tianjin Medical University in 1970 and obtained his Ph.D. degree from Beijing University of Medical Science in 1989. He has been engaged in ophthalmological clinical, teaching and scientific research work for 47 years. He studied and was trained firstly under Prof. Yushi He who was the pioneer of strabismology in China, and then under Prof. Jiaqi Liu who was the founder of pediatric ophthalmology in China.

During his professional career, he has made substantial contributions to the development of ophthalmology, pediatric ophthalmology and strabismus, and high education in ophthalmology in China. Moreover, he devotes himself into the work to push the cooperation and exchange with International Council of Ophthalmology (ICO), Asia-Pacific Academy of Ophthalmology (APAO), American Academy of Ophthalmology (AAO), American Association for Pediatric Ophthalmology and Strabismus (AAPOS), and other international organizations of ophthalmology. He is a member of Academia Ophthalmologica Internationalis (AOI), a past trustee member of ICO, a council member of APAO, the vice-chairman of Asia-Pacific Strabismus and Pediatric Ophthalmology Society (APSPOS), and a member of International Pediatric Ophthalmology and Strabismus Council (IPOSC) and a member of its advisory committee. He is the immediate past president of Chinese Ophthalmology Society (COS) and the president of the Chinese Ophthalmologist Association. He is also the immediate past chief editor of Chinese Journal of Ophthalmology and the associate chief editor of Chinese Journal of Experimental Ophthalmology. He is the president of Chinese Association for Pediatric Ophthalmology and Strabismus (CAPOS). He is the past vice-president of Tianjin Medical University, and the head of the graduate school of Tianjin Medical University. He is also the immediate past director of Tianjin Eye Hospital and the founder and the director of Tianjin Eye Institute and Tianjin Key Laboratory of Ophthalmology and Visual Science.

Over the past nearly five decades, his research fields include strabismus, pediatric ophthalmology and ophthalmic genetics. Prof. Kanxing Zhao has forwarded that the diagnosis of amblyopia in children displaced of the diagnosis criteria for adult and established the lower limits of normal vision during period of 3~7 years old in China. He has introduced, spreaded and innovated many surgical techniques for complicated strabismus, promoted the microsurgical techniques of strabismus in China. He has trained more than 100 postgraduate students including 52 students of doctoral degree, and trained more than 1000 fellows in mainland China. He has published more than 400 papers including 63 SCI papers. He is the chief editor of Ophthalmology (7 and 8 editions), and the chief editor of Strabismus and Amblyopia (1 and 2 editions).

He was awarded "Tianjin Natural and Scientific Award 2 Level", 3 times "Tianjin Scientific and Technological Advancement Awards 1 Level". He was awarded ICO-APAO Golden Apple Award, COS Award for Outstanding Achievement, Golden Key Award and Golden Apple Award from Chinese-American Ophthalmology Society, APAO Distinguished Service Award, and Life Achievement Honor Award from Chinese Ophthalmology Society and Inaugural APSPOS Asia-Pacific Award.

The talk includes of brief introduction on Prof. He Yushi and Prof. Liu Jiaqi, who were both the pioneers of pediatric ophthalmology and strabismus in China. The talk also introduces the progress of academic exchange between CAPOS and AAPOS in the recent 20 years, and the achievements of internationalization of pediatric ophthalmology and strabismus in China, and looks into the developmental tendency in the future in China.

Development of International Paediatric Ophthalmology and Strabismus
A Personal Perspective

Frank J Martin

The development of international paediatric ophthalmology and strabismus has helped bridge the gap between developing and developing nations in their ability to provide quality eye care for children with eye problems and strabismus and to adults with strabismus. The improvement in health care has been achieved by education, advocacy, and prevention of blindness programs.

Several international organisations have led the way. The ISA was established in 1966 followed a year later by the IOA. These organisations have focused on strabismus management in children and adults.

APOS was founded in 1975 and was the first international organisation involved in educational programs focusing on paediatric ophthalmology and strabismus.

WCPOS (2011), a member and society based organisation and IPOS (2013), a society based organisation have more recently been involved in international paediatric ophthalmology and strabismus.

The key events in the development of international paediatric ophthalmology and strabismus in the last decade will be discussed.

Prof Frank Martin AM, MBBS, FRANZCO, FRACS

Dr Frank Martin specialises in paediatric ophthalmology and strabismus.

Dr Martin was head of the Department of Ophthalmology at the Children's Hospital at Westmead for 22 years and is currently a Visiting Medical Officer in Ophthalmology at the Sydney Children's Hospital Network, Sydney Eye Hospital and Royal Darwin Hospital.

Dr Martin is Clinical Professor in the Departments of Paediatrics and Ophthalmology at the University of Sydney.

He is President of the Board of the Children's Medical Research Institute and President of the Asia Pacific Society of Paediatric Ophthalmology and Strabismus. Dr Martin is on the Council of APAO and the Board of ICO. He is the Director of Society Development and Leadership for the ICO. He also chairs the Orthoptic Industry Advisory Committee at the University of Technology, Sydney (UTS)

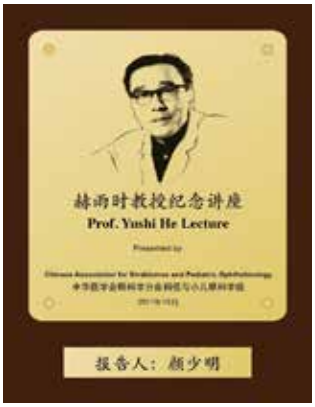
Dr Martin has received several awards including the Distinguished Service Award from the Asia Pacific Academy of Ophthalmology, the RANZCO College Medal, the Jose Rizal Medal, Michelle Beets Memorial Award, the Golden Apple Award, the Achievement Award from APAO and Secretariat Award from the AAO.

Dr Martin had published over 40 articles, has written several text book chapters, is a reviewer for the British Journal of Ophthalmology and the AIOS Journal of Ophthalmology. He is actively involved in clinical teaching of undergraduates and graduates. Dr Martin has given a number of named lectures including the Mrs Nagamani Dharmapuri Endowment Lecture, the Billson Lecture and the Keshmahinder Singh Oration.

Dr Martin consults privately in paediatric ophthalmology and strabismus at Sydney Ophthalmic Specialists.

A New Generation Random-dot Stereogram (RDS)

Yan Shaoming
PLA Navy General Hospital



颜少明，中国人民解放军海军总医院原眼科主任，教授，国内资深眼科专家，著名的立体视觉专家，中国研究立体视觉检查的开创者，从事斜弱视小儿眼科专业 50 余载。1981 年颜少明教授与中国科学院生物物理研究所郑竺英教授合作，研制出中国第一部随机点《立体视觉检查图》，1986 年研制《随机点同视机远立体视检查图》成功，形成了远 / 近立体视检测系列；1990 年研制出版《双眼影像不等视检测图》，2004 年研制出第二代《数字化立体视觉检查图》升级版，其英文版也随后出版。2016 年，颜少明利用高新 3D 技术研制出版了第三代大视野，低噪声，多视点裸眼化随机点《立体视觉检查图》全新升级版，将立体视觉检查推向信息化、数字化、智能化和裸眼化的时代快车，赋予了 RDS 新的时代内涵。《颜氏立体图》在中国备受青睐，该图的英文版《Yan's glasses-free random dot stereotest》现已出版，将在国际上产生影响力和较强的竞争力。

颜少明教授身为国家级专家，现已年过 80，一生致力于立体视觉研究，难能可贵。

Professor Shaoming Yan is the former chief of Ophthalmology Department in Navy General Hospital of PLA. He is most famous stereoscopic expert and ophthalmologist in China. Shaoming Yan has been focusing on Strabismus and Amblyopia as well as Pediatric Ophthalmology for more than 50 years and had set up the domestic standard of stereotest in China. On 1981, cooperating with professor Zhuying Zheng from the Institute of Biophysics, Chinese Academy of Sciences, Shaoming Yan had developed the first Chinese Stereotest Gram. On 1986, the development of Random Dot-Synoptophore Far Stereotest Gram had succeded. On 1990 and 2004, he developed and published the Heteropsia Image Testing Gram and the upgrade of the 2rd Digital Stereotest Gram respectively. On 2016, by using 3D technology, Shaoming Yan had developed and published the bran-new upgrade of the 3rd Stereotest Gram with wider visual fields, lower noise, multiple vision point and naked eye testing, which pushed the stereotest to the informational, digital, intelligent and nake-eye state. Yan's glasses-free random dot stereotest has now been worldwide published, which will generate influence and competitiveness internationally.

As the national expert, professor Shaoming Yan is over 80 and has devoted himself to the study of stereopsis, which is fairly precious.

In 1962, the Random-dot Stereogram (RDS) invented by American scientist Bela Julesz applying the computer technology, is a breakthrough in the study on the basic theory of stereoscopic vision and the theory of cyclopean eye entire stereovision has been created, which has rewritten the history of stereovision check. There is no monocular cue at all in RDS. It is just like a cryptogram which is hard to guess. The stereovision function is to be checked objectively and intelligently with RDS. Nowadays, the classical version of RDS such as TNO, Randot, Lang and Frisby has become popular all over the world and is widely used. It is considered to be the gold standard in stereovision check. Since1985, several versions of RDS have published in China and the clinic research on stereoscopic vision is hyperactive.

But the RDS of various versions currently popular came into being in 1980s with unprofessional random-dot pixel structure. Therefore, the pixels of parallax functions are less than 30% and non-functional camouflage pixels are more than 70%, which result in insufficient information and high noise as well as aging carrier means. A lot of information has been lost with the standard 3D glasses. The RDS still remains in the primitive technology level with limitations of constraints, and it is urgent to be upgraded.

In 2013, Professor Yan Shaoming applied the 3D high technology of the 21st century: 1. starting with optimizing the software of the RDS matrix pixel structure and focusing on optimizing the hardware of the carrier means; 2. enlarging parallax pixel in super constant so as to increase the intensity of information; 3. alienating the non-functional camouflage pixels greatly and reducing the noise interference to the minimum; 4. collecting information from multi-viewing points to improve the depth of vision field range and clarity; 5. discarding the aging carrier means of standard 3D glasses and applying the modern electronic 3D free display column mirror grating plate technology. A fully upgraded Stereoscopic Vision Check Chart of the new generation has been developed. It consists of two frames 10 multi-view-point information of the large field of vision of multi-layer stereoscopic blindness check chart with the maximum parallax of 2400", and two frames 16 multi-view-point information low-noise stereo-acuity check chart with the highest precision of 40". It has added new connotation to the RDS era, pushing it forward into the fast lane with the electronic, digital and glasses-free features. This chart is much more advanced, operable and practical than the classical and authoritative RDS versions currently canonized, forming a new, faster, humanized and intelligent platform for high level stereovision function check without glasses, updating new knowledge, spreading the new concept of cyclopean eye entire stereovision and studying the stereoscopic visual mechanism. This stereoscopic vision check chart is widely applied in ophthalmology clinic. This chart was published by the People's Health Publishing House in 2016 and the Expert Forum on Spreading and Applying Stereovision Check was held in October, 2016.

Stereovision is a high level stereovision function. It is the important criteria of the visual function assessment system and an important routine medical check in ophthalmology. It is an urgent research and important subject in the ophthalmology development to push forward and popularize the high level stereovision function check, optimize the connotation of the visual function assessment system.

Amblyopia and Binocular Function

John Sloper
Moorfields Eye Hospital, London

Biography

John Sloper studied medicine at Oxford and in London and then spent a number of years in basic science research studying the effects of visual deprivation on the lateral geniculate nucleus. After training in ophthalmology he undertook a Fellowship in Strabismus with Peter Fells and John Lee at Moorfields Eye Hospital. He was appointed Consultant to the Strabismus and Paediatric Service at Moorfields in 1996. Alongside his clinical commitments he has continued his research interest in amblyopia and visual development. Recently he has been involved in a UK multi-centre, randomised controlled study of surgery in children with intermittent exotropia. He is now an Honorary Consultant at Moorfields Eye Hospital, London.

Different kinds of abnormal visual experience have different effects on visual acuity and binocular function, with binocular function generally being better preserved in relation to acuity in children with anisotropic rather than strabismic amblyopia. New treatments for amblyopia are being developed that emphasise binocular stimulation as a means of improving both the acuity of the amblyopic eye and binocular function. This lecture will consider evidence of the effect of different types of abnormal visual experience on both visual acuity and binocular function, the part played by binocular interaction in the development of amblyopia and how established treatments can influence these. It will also discuss the results of recent RCTs comparing binocular treatment with patching and consider whether there is any evidence that these methods work in a different way from patching.

Rectus Muscle Strengthening in Thyroid Eye Disease

Monte A Del Monte, MD
Skillman Professor of Pediatric Ophthalmology University of Michigan

Dr. Monte A Del Monte, MD, *received his undergraduate and medical degrees from John's Hopkins University in 1974. He completed a complete residency in Pediatrics at the Harvard Boston Children's Hospital Medical Center and a residency in Ophthalmology at the Johns Hopkins Wilmer Eye Institute where he served as chief resident and assistant chief of service in 1982. He also completed postdoctoral fellowship training in ocular biochemistry and genetics at the Wilmer Institute and in pediatric ophthalmology and strabismus at the National Children's Hospital Medical Center in Washington D.C. Dr. Del Monte is board certified in ophthalmology. He is a past member of the Board of Directors of the American Association of Pediatric Ophthalmology and Strabismus, past president of the American Orthoptic Council and has served as committee chair of numerous committees on the American Association for Pediatric Ophthalmology and Strabismus, the American Academy of Ophthalmology, The American Orthoptic Council, the Joint Commission for Allied Health Professionals in Ophthalmology (JCAHPO) and the American Board of Ophthalmology. He has lectured and performed Medical Mission teaching and clinical care widely throughout the world with ORBIS and other organizations and has presented 45 invited, guest, keynote and named lectures. He has been director of Pediatric Ophthalmology Fellowship training at the University of Michigan for the past 32 years training clinical and research fellows from the United States and many countries throughout the world. He has also been medical director of the AOC accredited Orthoptic Training Program at the University of Michigan with program directors Ida Iaccobucci and Bruce Furr. He is an international expert on pediatric cataracts as well as pediatric and adult strabismus and strabismus surgery and has been involved in developing new treatment protocols and surgical techniques; especially for the treatment of cranial nerve palsies, complex strabismus, lost or damaged extraocular muscles and Thyroid Eye Disease. He has also done extensive research in the cell biology and tissue culture of human retinal pigment epithelium, was among the first to report the successful culture of differentiated human Retinal Pigment Epithelium (hRPE) and was involved in the early research involving the biochemistry and culture of other human ocular tissues for the study of inborn errors of metabolism such as cystinosis, muccopolysacharidosis and lipidoses. He is currently Director of of Pediatric Ophthalmology and Adult Strabismus, Skillman Professor of Pediatric Ophthalmology and Professor of Pediatrics and Communicable Diseases, all at the University of Michigan, and Director of Ophthalmology at the Mott Children's Hospital.*

Traditionally, strengthening of rectus muscles by resection or plication is not recommended in patients with Thyroid Eye Disease because of concern for increased restriction of already tight rectus muscles. However, patients with severe disease and large initial deviations often achieve only partial and unsatisfactory correction of diplopia even with maximal rectus muscle recession, leaving them with deviations too large for ground in prism - requiring long term Fresnel prisms or even fogging of one eye to eliminate diplopia.

We have recently been adding resection or plication of antagonist rectus muscles in these patients, either as a secondary procedure or during the initial procedure in selected cases. This presentation will review our experience this this technique. We have found rectus muscle strengthening to be a very effective procedure, resulting in predictable and stable realignment in these previously difficult or untreatable patients. My preferred technique for plication will be described. Plication, especially, should be recommended as it provides the additional benefit of easier vessel sparing in these patients at increased risk for developing anterior segment ischemia after surgery on multiple extraocular muscles.

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论文发言 / Free Paper

Efficacy of Botulinum toxin in the treatment of convergence spasm

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INTRODUCTION: Studies have shown that botulinum toxin has an important role in management of convergence spasm.
METHODS: We did a retrospective review of patients with convergence spasm at a tertiary care teaching hospital and collected data of those who received botulinum toxin over the last two years.
RESULTS: A total of six patients were identified with mean age of 44.3 years. Commonest symptom was diplopia followed by headache and blurred vision. Depression was present in 4 out of 6 patients. Average pre-injection angle for near was32.5 PD BO (prism dioptres base out) and for distance was 27.7 PD BO. All of the patients received botulinum toxin injection.
At two weeks post-injection, four patients were overcorrected with average deviation for near being 10 PD BI (range 20 PD BI to 25 PD BO) and for distance being 5 PD BI (range 25 PD BI to 30 PD BO). At three months, a gradual wearing off of the toxin effect was seen and near deviation changed to an average of 7 PD BO (10 PD BI to 35 PD BO). The distance deviation changed to 10 PD BO (range 25 PD BI to 45 PD BO). At the last follow up, the toxin effect had worn off completely and all the patients returned to the pre-injection levels with recurrence of symptoms.
DISCUSSION: Convergence spasm recurred after treatment with botulinum toxin.
CONCLUSION: We found botulinum toxin to the medial recti to be of limited success in our cohort of patients.

Range of Near Visual Acuity in Children with Pseudophakia

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INTRODUCTION: Aim of our study was to assess range of near visual acuity in children with pseudophakia.|
METHODS: Children between 5-15 years with pseudophakia were included.|Near vision assessment was done using M notation at 30cm. Assessment included unaided near vision, near vision with distant vision correction alone, near vision using minimum spherical power required to read 1M and child’s class textbooks.
RESULTS: Sixty four children were included. Near vision assessments showed 25% could read 1M unaided. With distant vision correction alone in place, 14.1% were able to read 1M without any additional near vision correction. A total of 64.1% could read 1M using < 2 D near add.One-third of children could be independent of spectacles for reading their class text book|
DISCUSSION: Bharati et al studied the uncorrected visual acuity in children with pseudophakia. Study included 41 eyes. 49% had good visual acuity at distance and near, 11 had good visual acuity at distance and 6 had good visual acuity at near. |In our study, 25% could read normal print size unaided. With distant vision correction alone in place, 14.1% were able to read 1M without any additional near vision correction.||
CONCLUSION: 14.1% of children in our study with pseudophakia could be independent of bifocal spectacles. 64.1% of them could read normal print size at 30cm with <2D near vision correction stating that children with pseudophakia may not require the full near vision correction.

A Modified Amblyopia Treatment Index in Beijing, China: Lessons Learned

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INTRODUCTION: Successful amblyopia treatment in children depends upon treatment adherence. Previous North American studies have characterized adherence using the amblyopia treatment index (ATI) questionnaire. However, there is limited literature on amblyopia treatment adherence in the Chinese population. The purpose of this study was to assess barriers to adherence and treatment outcomes in Chinese amblyopic children with a modified Chinese ATI.|
METHODS: A cohort study was conducted at Peking University 3rd Hospital from June to August 2016. Included were patients with a diagnosis of amblyopia (interocular visual acuity difference greater than logMAR 0.2) and completion of patching therapy. Clinical ophthalmic data was collected from medical records. Parents reported adherence to prescribed patching regimens and then completed the modified

ATI. Chi-square analysis was used to analyze association between sociodemographic data, adherence, and treatment success.|

RESULTS: 30 patients (14 male, 16 female) with mean age at diagnosis of 4.6 +/- 2.4 years participated. Twenty-four patients (80%) had refractive amblyopia, two (6.7%) strabismic, and four (13.3%) combined. Mean treatment duration was 15.1 +/- 11.9 months. At the end of treatment, 11 (36.7%) had residual amblyopia. Age greater than 6 years at diagnosis (p=0.037), belief that patching had adverse effects (p=0.007), and concerns about social stigma (p=0.007) were associated with adherence difficulties. Worse baseline vision (p = 0.006) and adherence difficulty (p = 0.013) were associated with residual amblyopia. Of note, treatment adherence was not affected by parental education or distance from treating hospital.|

DISCUSSION: Psychosocial factors and parental beliefs affect adherence and treatment outcomes in this cohort of Chinese patients with amblyopia. Our patients had higher levels of refractive amblyopia when compared to previous studies. Our small cohort size is a limiting factor in our analysis and a larger longitudinal study is recommended to better assess the barriers to adherence and treatment outcomes in Chinese amblyopic children. Of note, the modified Chinese ATI was successfully implemented and this is served as an important tool to improve the communication between physician and parent/caregiver.

CONCLUSION: Regardless of parental education or distance to tertiary hospital, Chinese parents are dedicated to treating amblyopia. However, Chinese parents, like parents in previous studies of other cultures, have challenges with treatment adherence due to psychosocial factors and social stigma of patching treatment. Our patients had higher levels of refractive amblyopia compared to previous studies. In this way, correcting refractive error treated the majority of our patients' amblyopia, contributing to a lower rate of residual amblyopia.

Prevalence and magnitude of amblyopia in Kamrup (Metro) district in Assam of North east India

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INTRODUCTION: To study the prevalence, determine the magnitude and cause of amblyopia among children aged 6months to 16 years in Kamrup district of Assam

METHODS: Among a total of 39,651 children from the study population, door to door screening was conducted by trained workers. 60 camps were conducted in nearby schools for children above 5 years with visual acuity <6/9, diagnosis was confirmed and referred for further management. Children less than 5 years were referred to the tertiary institute where examination and appropriate management was given.

RESULTS: Among 8388 out of 39651 children, 469 were diagnosed at the camp and 223 were diagnosed at the institute. The prevalence of amblyopia was 1.75% with males (52.50%) more common than females. Demographic data showed the higher prevalence among 11-16 years (63.58%) with refractive amblyopia being the most common cause. In children

< 5 years, sensory deprivation and strabismic amblyopia were more common.

DISCUSSION: Amblyopia is a major scourge if not treated on time. The prevalence of amblyopia in our study was comparable with the world wide review statistics. The majority of amblyopic children in our study (45.29%) had refractive amblyopia in contrast to a study conducted at referral strabismology practice in India where strabismic type was more prevalent.

CONCLUSION: Majority of the children had Amblyopia due to uncorrected refractive error, which could be avoided by timely detection and appropriate management. Lack of knowledge and awareness about Amblyopia has been the cause for late presentation and significant visual impairment associated with Amblyopia.

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Monitoring Objective Compliance with Intermittent Occlusion Therapy Glasses

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INTRODUCTION: Liquid crystal glasses (Amblyzâå,, ¢) utilize an intermittent occlusion technique (at 30-second opaque/transparent intervals) and avoid adhesive, potentially improving compliance. Several previous studies support the effectiveness of this new occlusion therapy device for amblyopia treatment. [1-3] However, previous studies had no objective compliance measured for these glasses, which limits understanding of the dose-response for this treatment. This study reports the feasibility and pilot data of a microsensor to monitor objective compliance with intermittent occlusion glasses.

METHODS: Ten children (3-8 yr) with unilateral amblyopia associated with strabismus and anisometropia were enrolled. Prior to enrollment, they wore glasses for 12 weeks. Amblyopia was defined as an interocular visual acuity difference of at least 0.2 logMAR. At enrollment, depends on severity of amblyopia, they were prescribed 4 or 12 hours of intermittent occlusion therapy glasses. An inexpensive, commercially available waterproof microsensor was attac-hed to the temple arm to monitor compliance with glasses wear for 3 to 4 weeks. Compliance was defined as the percentage of hours of actual glasses wearing compared to the hours of prescribed. Daily compliance was calculated, and general compliance was the average of daily compliance. General compliance at treating days was reported.

RESULTS: Compliance varies among individuals. For instance, Patient A had good general compliance (average 81%), but daily compliance declined to from 110% to 60% over three weeks; Patient B had approximately 52% general compliance, with poor daily compliance on weekends compared with weekdays. General compliance was averaged at 46.4% (ranged from 16% to 81%). Daily compliance declined with time for every patient, and mean daily compliance decreased by 2% everyday (Figure 1). Neither of the patients' parents reported that the child had discomfort or social concerns related to the attached sensor.

DISCUSSION: Objective compliance with intermittent occlusion therapy glasses varies among individuals, but on average declines over time course. These preliminary results are limited with short-term follow-up.

CONCLUSION: Objective compliance with intermittent occlusion glasses can be monitored with a microsensor. Objective compliance with intermittent occlusion therapy glasses varies among individuals, but on average declines over time course. These preliminary results are limited with short-term follow-up.

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Clinical Profile and surgical outcomes in children with posterior lenticonus

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INTRODUCTION: Posterior lenticonus is a rare abnormality of lens characterised by spherical deformity of the posterior capsule associated with progressive cataract .Lenticonus can be associated with pre existing posterior capsular dehiscence which can complicate cataract surgery

Objective of this study is to describe clinical profile of the patients diagnosed with posterior lenticonus at a tertiary eye care Center in South India . We also report surgical outcomes following cataract surgery in these patients

METHODS: Medical records of patients with a diagnosis of posterior lenticonus seen between January 2000 and December 2016 were retrospectively reviewed. Data collected included demographic details, vision, anterior and posterior segment findings and intra operative details. Patients with a follow up of less than 6 months were excluded. Clinical features and treatment measures with visual outcomes in eligible patients were analysed.We Defined visual acuity of less than 6/60 at the final follow up as poor outcome

RESULTS: Medical records of 180 patients with a diagnosis of posterior lenticonus in the specified time period were recovered. Of these, 48 eyes with posterior lenticonus had more than 6 months of follow up and were included in the study . The mean age of the patients at presentation was 7.2 +/- 5.9 years. Most frequent complaint at presentation was decrease in vision (68.8%) followed by leucocoria (18.8%) and strabismus (12.5%). 1 patient (2.8%) each had a morning glory disc, nystagmus, congenital nasolacrimal duct obstruction and a ventricular septal defect. Most of the patients (68.8%) had no significant refractive error. 6(12.5%) eyes had a clear lens with only a posterior capsular bulge, 6(12.5%) eyes had cataract which was visually insignificant and 36(75%) eyes had visually significant cataract requiring surgery.12 (25%) eyes had a preoperative PC dehiscence as evident on clinical examination or on ultrasonography. Of the 36 patients who

underwent surgery , 30 (83.3%) patients had IOL placed in bag. 6 (16.7%) patients had IOL placement in the sulcus as a secondary procedure. All 12 patients with a pre existing PC dehiscence, IOL was implanted in the bag. The mean presenting visual acuity in all eyes was 1.034+/- 0.56 logMAR units. The mean visual acuity at the final follow up was 0.57+/- 0.5 logMAR unitswhich was a significant improvement . Poor visual outcome defined as a visual acuity of < 6/60, was seen in 6 (12.5%) patients . 36(75%) patients required amblyopia therapy in the form of part time occlusion . 10(20.83%) patients underwent squint correction.

DISCUSSION: There is limited literature available on the outcome of cataract surgery in children with Lenticonus.Cheng et al the in their series have reported poor outcome in only 10 percent patients similar to what we found in our study .Nearly three fourth of the subjects included in this study required occlusion in addition to cataract surgery underlining the need for follow up post surgery . We examined the association between age at presentation , presence of strabismus and presence of posterior capsular and the final qvisual outcome . We found that presence of strabismus at presentation was associated with poor outcome . We did not find any clinically significant association between visual acuity (p=0.533) and age at presentation or presence of PC dehiscence (p=0.735) **CONCLUSION:** Cataract surgery in children with posterior lenticonus leads to significant improvement in vision with meticulous surgery combined with appropriate amblyopia therapy . It is possible to implant intraocular lens in the bag even in presence of posterior capsular dehiscence . Presence of strabismus at presentation may be a predictor for poor visual outcome

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Myopic shift after intraocular lens implantation in children less than two years of age over a 2 year period

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INTRODUCTION: To evaluate the myopic shift over a period of 2 years following implantation of intraocular lens (IOL) in children less than 2 years of age with axial length less than 22 mm.

METHODS: A retrospective analysis of cataract surgery with IOL implantation in children below 2 years of age over a period of 7 years was undertaken. Mean myopic shift was analyzed at 6 months, in first year and end of 2 years. Myopic shift in eyes with 3-4 Diopters undercorrection(group-I) and with 5-7 Diopters undercorrection (group-II) was compared using Mann-Whitney test.

RESULTS: Total 40 eyes of 23 children were included and mean myopic shift at end of 2 years was -2.35 ± 2.15. Mean myopic shift was -2.93 ± 2.55 in group-I and -1.88 ± 1.77 in group-II. There was no significant difference in myopic shift between two groups at 6 months and 1 year; a borderline significant difference was found in second year (p= 0.04).

DISCUSSION: In paediatric population below 2 years of age, the postoperative emmetropisation of refractive error is still debatable. The refractive strategy of undercorrecting the calculated IOL power to leave residual hyperopia of +6 to +7 with addition for near focus carries the risk of amblyopia . In our study the mean myopic shift over a period of 2 years was lesser as compared to previous studies .

CONCLUSION: There was no significant difference in myopic shift seen in the two groups suggesting that less postoperative residual hyperopic target refraction can be aimed to prevent risk of amblyopia below 2 years of age .

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Sensory fusion rehabilitation in patients using programable alternating occlusion of vision fields

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INTRODUCTION: Recovery of sensory fusion in children with congenital and early acquired strabismus is very important in the functional rehabilitation following strabismus surgery. This study aims to analyze sensory fusion recovery using method of programmable LCD glasses with alternating occlusion of vision fields and compare its efficacy with orthoptic treatment using synoptophore.
METHODS: 25 patients with prior esotropia and post-operative absence of sensory fusion were studied and divided into 2 groups. Main group (15 patients) underwent treatment with LCD glasses, while the control group (10 patients) underwent synoptophore treatment.
RESULTS: Mean age of patients was 7,4. All patients had hyperopic refraction. Post-operative angle of deviation was 3,7 ± 1,5 degrees. Patients in the main group wore LCD glasses with optimal correction 4 hours/day. Patients in the control group received 3-4 courses of synoptophore treatment during ?ne year.
The period of observation was 12 months. Stable sensory fusion was achieved in 12 patients, unstable – in 3 patients in the main group. 4 patients in control group reached unstable sensory fusion. Binocular vision was achieved in 8 patients in the main group, and in 2 patients in control group.
DISCUSSION: Sensory fusion recovery in 80% of cases using programmable LCD glasses with alternating occlusion of vision fields can be explained by a more effective daily influence on the patient's visual system, as compared to courses of synoptophore treatment.
CONCLUSION: Alternating occlusion of vision fields with LCD glasses is an effective mean of sensory fusion and binocular function recovery in patients after successful strabismus surgery.

The location of the eye's frontal equator and its role in the effectiveness of the horizontal muscle recession. A new method of recession dosing in esotropia

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INTRODUCTION: In clinical practice, the same magnitude of recession leads to a non-uniformal effectiveness of the surgery. Studying biomechanical basis of recession efficacy, we realized that surgical outcome depends primarily on the location of the equator relative to the limb and the location of the muscle attachment relative to limb-to-equator distance. This study aims to investigate the importance of the location of muscle attachment to the frontal equator for the recession surgery and to derive a mathematical calculation of the frontal equator zone depending on the individual parameters of the eyeball, to finally develop a new system of mathematical recession dosage calculation.
METHODS: All patients passed standard pre- and postoperative ophthalmologic examinations.
RESULTS: 153 patients were operated, mean age 6 ± 1,2 years. The average value of the deviation was 15 ± 5 degrees. Evaluation of the effectiveness of surgery was measured by postoperative objective angle of strabismus.
Mathematical surgery simulation differed from the actual surgical results by only ± 5 degrees.
DISCUSSION: Our calculation showed that recession beyond the equator has a turning effect on the eyeball, despite the fact that the point of muscle's force application does not change.
CONCLUSION: We mathematically calculated the equator location relative to limb, depending on the length of the longitudinal and transverse size of the eyeball, as well as derived a formula that allows to precisely dose the recession surgery beyond the equator. A mathematical model of the surgery was created, which allows to distribute the surgical effect on both eyes with high cosmetic and functional result.

Visual Acuity of Developmentally Delayed Infants Estimated Using a Near-Eye Optics Stimulator: From The Lab To The Clinic.

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INTRODUCTION: Obtaining an estimate of visual acuity of infants is difficult because of their inability to speak, a problem especially pronounced in children with severe developmental delay. We report on acuity estimates from developmentally delayed children evaluated

in a routine fashion with a near-eye optics stimulator.
METHODS: Flash and Pattern Visual Evoked Potential (VEP) estimates of acuity were performed on five severely developmentally delayed infants using a prototype Diagnosys Envoy® VEP system which employed a near-eye optics OLED stimulator hand-held over the patient's eye. Beginning with a flash stimulus, progressively smaller alternating checks were presented until a repeatable response could no longer be elicited.
RESULTS: In each case, physiological estimates of acuity exceeded that estimated behaviorally.
DISCUSSION: We reasonably infer that, for these children, a visual pathway to the occipital cortex is intact, although perhaps not fully developed for the patient's age*. Parents and guardians received this news enthusiastically. Although we have no way of knowing how the infant's brain further processes visual images, to promote visual development parents were encouraged to visually stimulate the child even though the child may appear functionally blind.
CONCLUSION: A routinely obtained estimate of a child's visual acuity is important for physicians, therapists and especially parents. The advent of near-eye optics used in virtual reality goggles allowed development of a visual stimulation system to overcome the problems of maintaining a child's fixation on a screen distant from the eye*, allowing acuity estimates in the same amount of lab time as a conventional pattern VEP in adults.
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A 6 year review on preseptal and orbital cellulitis and the use of steroids in its management within our tertiary centre in Abu Dhabi

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INTRODUCTION: The purpose of this study was to provide an analysis of paediatric patients with an orbital or preseptal infection and outcome of surgical intervention and the effect of steroid use on length of stay. Furthermore, the causative organisms were analyzed.
METHODS: The in-patient records were reviewed retrospectively from January 2011 to March 2017. The ocular findings, the duration of symptoms and hospital stay, microbiological culture reports, antibiotics and/or steroids used, surgical intervention, the response to therapy and complications were analyzed.|
RESULTS: A total of 37 patient records' were reviewed. The inclusion criteria: <18 years old, diagnosis of preseptal or orbital cellulitis. The average age of patients at presentation was 5 years. 68% were preseptal and 32% were orbital cellulitis. Out of the orbital cellulitis cases, 50% underwent a surgical procedure with no complications. The range of inpatient stay was between 4-51 days (mean 6.86 days). 84% of the cultures came back negative but the causative organisms identified were streptococcus, micrococcus, haemophilus influenza, aspergillosis and actinetobacter baumanni.
DISCUSSION: 30% of the patients received steroids and that did not influence the length of stay or prognosis compared to the 60% who did not receive steroids.Â It was noted that patients with orbital cellulitis(mean 13.1 days) had a longer inpatient duration compared to preseptal cellulitis (mean 3.88 days). |
CONCLUSION: Based on the six year review, it can be concluded that preseptal cellulitis remains the commonest among orbital infections and there was no benefit seen in the length of stay with steroid use.|
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Ophthalmic Evaluation in Beta Thalassemia

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INTRODUCTION: To determine the association of ocular manifestations in beta thalassemia cases with the patient's age, blood transfusion requirement, average serum ferritin and the dose and duration of iron chelation therapy.
METHODS: Sixty multi transfused beta thalassemia cases age 12 to 18 years on chelation therapy were included in this cross sectional analysis. Structural and functional evaluation of the retina was done using Optical Coherence Tomography (OCT) and Electroretinography (ERG), both flash and pattern ERG (PERG). Routine ophthalmic evaluation and B scan of the eye was also done. Flash ERG a and b waves

were recorded however b wave amplitude was evaluated. Pattern ERG n35, p50 and n95 waves were recorded and p50 wave evaluated.
RESULTS: Visual acuity was abnormal in 23% of cases. Ocular manifestations were detected in 38.3%and a significant correlation noted with increase in age (p=0.045). Abnormalities were noted in b wave amplitude on flash ERG in 20%, while reduced p50 amplitude on (PERG) noted in 15%. There was no correlation noted between ocular abnormalities and serum ferritin level, transfusion requirement or dose and duration of chelating agent.
DISCUSSION: Our study found no correlation of ocular abnormality with average serum ferritin levels, blood transfusion requirement, type, dose and duration of iron chelation.| ERG abnormalities help to detect retinal functional changes earlier than the development of structural abnormalities as seen on OCT. our study population comprised mainly of adolescents, hence ERG appears to be a promising tool for the screening of thalassemics and can serve as a follow up test for evaluating retinal function.|
CONCLUSION: ERG may be an important screening test for detection of early functional retinal changes.
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Comparison of outcome for Anomalous head posture following extraocular muscle surgery in Children with Oculocutaneous albinism operated before and after 3 years of age

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INTRODUCTION: The purpose of the study was to analyze the outcome of extra ocular muscle surgery on Anomalous head posture (AHP) in albinism and compare the results in children operated before and after 3 years of age.
METHODS: In a retrospective consecutive case series, the charts of 96 oculocutaneous albinism patients seen during a 2 year period were reviewed. The nature of AHP when present was documented. Patients operated elsewhere were included, if pre and post-operative photographs, videos and surgical records were available. Early surgery was defined as surgery before 3 years
RESULTS: 26 had surgery (17 early / 9 late) for one or more of the following; nystagmus, AHP, strabismus. Improvement in AHP was observed in 9(3/6) patients. 4(4/0) showed no improvement. 3(3/0), who had no AHP pre-operatively, developed one. 6 patients (6/0) developed a different AHP. 2 patients (0/2) neither had nor developed an AHP and AHP recurred in 2(1/1). Spontaneous changes in AHP were observed in 11(9/2) of the 70 un-operated patients
DISCUSSION: Extraocular muscle surgery can help improve anomalous head posture (AHP), dampen nystagmus, improve alignment, and improve visual acuity in albinism. Nystagmus intensity, alignment and visual acuity improved in both groups. Development of an AHP, change to a new AHP, no significant improvement were all more common when patients were operated before 3 years of age
CONCLUSION: Spontaneous changes in AHP are common in albinism especially in the first 3 years. Extraocular muscle surgery should be approached with caution in this age group.
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Retinal Origin of Motion Direction Selectivity in the Superior Colliculus

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INTRODUCTION: In the visual system, many neurons at various stages of processing respond selectively to stimuli moving along specific directions or having particular orientations. Such direction and orientation selectivity are critical for motion sensing and image processing. The circuit mechanisms of direction and orientation selectivity have been extensively studied. However, these studies have mostly focused on the retina and primary visual cortex (V1), while neglecting the superior colliculus (SC), a major retinal target and vision center for ocular motor control.

METHODS: In this study, we set out to determine the underlying circuit mechanisms giving rise to direction selectivity in the visual layers of mouse SC. In one set of experiments, we isolated the retinal inputs that individual SC neurons receive, by combining in vivo whole-cell voltage clamp and optogenetic silencing. In another, we reduced the selectivity of direction selective ganglion cells (DSGCs) by genetically manipulating retinal circuits and then studied the impact on direction selectivity in the SC using 2-photon calcium imaging.
RESULTS: We find that the retinal input to SC neurons is already selective as a result of precisely converging inputs from similarly-tuned retinal ganglion cells. The direction selective retinal input is linearly amplified by the intracollicular circuits without changing its preferred direction or level of selectivity. Finally, using 2-photon calcium imaging, we show that SC direction selectivity is dramatically reduced in transgenic mice that have decreased retinal selectivity.
DISCUSSION: The SC, or optic tectum,was the most sophisticated visual center until the neocortex recently evolved in mammals. It is mostly known for its functions in initiating rapid gaze shift towards salient stimuli, controlling fixational saccadic eye movement, and other important ocular motor behaviors. Neurons in its superficial layers display diverse visual response properties. Our study demonstrate that SC neurons inherit their direction selectivity from DSGCs in the retina, a finding that has important implications for understanding signal processing in the early visual system. It reveals the importance of retinal selectivity in setting up downstream response property. Furthermore, given the fundamental importance of the SC in visually-guided behaviors and ocular motor control, our discovery will motivate exciting future studies of visual system organization, function and development.
CONCLUSION: Together, our studies demonstrate a retinal origin of direction selectivity in the SC, and reveal a central visual deficit as a consequence of altered feature selectivity in the retina.
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Evaluation of the Awareness of Pediatric Eye Health Among the Parents of Pediatric Patients

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INTRODUCTION: Refractive errors may cause severe decrease in visual acuity and children usually don’t complain about their vision, thus regular eye examination became more important in children. In this study, we aimed to evaluate the awareness of patients about eye health and children’s ophthalmologic situation.|
METHODS: A total of 330 children who were aged 3-16 years old and their parents were recruited in this study that visited general ophthalmology clinic, from February 2016 to February 2017. All children were underwent total ophthalmologic examination and their parents were asked a questionnaire about children’s eye health.
RESULTS: There were 141 (41.7%) men with a mean age of 9.52 (± 3.62; 3-17) years. Mean first ophthalmologic examination age was 7.1 (± 3.81) years. Only being prematurity effects first examination age. A hundred and sixty four (49.7%) patients’ parents declared that they take their children regular yearly ophthalmologic examination, 126 (38.2%) of them per 6 months, 36 (10.9%) of them declared that when children complains from eyes and 4 of them declared that they didn’t take their children to the ophthalmologist. Any of the parameters effects regular ophthalmologic examination interval.
DISCUSSION: Our study showed that mean first ophthalmologic examination age is late for diagnosis and treatment of ambliyopia and

refractive errors. Also regular examination intervals were variable. Screening of preschool children, especially aged 3-5, seems to be effective for refractive errors and ambliyopia diagnoses, as shown previous studies. However, treatment follow-up is as important as diagnose in amblyopia.

CONCLUSION: We suggested that, increasing the awareness of families is more important than screening program for appropriate treatment of this situation.

Early Recurrence of Retinopathy of Prematurity after Initial Intravitreal Ranibizumab Therapy - Experience From a Tertiary Referral Center in Abu Dhabi, UAE.

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INTRODUCTION: A retrospective study of 30 babies (59 eyes) seen between May 2013 to March 2017. They received initial Ranibizumab for threshhold disease.

METHODS: All babies had 2.5mg of Ranibizumab injection 1.75 to 2.00mm posterior to the limbus either with local anesthesia, sedation or general anesthesia.|

RESULTS: 39% had early recurrence (12/30 babies, 23/59 eyes). The recurrence occurred between 1 to 11 weeks (mean: 6.9, median:7.6, mode: 10.9 weeks) post initial injection. 41.7% of those cases had second recurrence (5/12 eyes, in 3 babies), range 1 to 8 weeks (mean 4.2 weeks) post-injection. Furthermore, 1/5 eyes had third recurrence (8.3%) 8 weeks' post injection.

11/12 babies with recurrent disease (20/23 eyes, 86.9%) received Diode laser as secondary treatment. 2 babies, (3 eyes,15%) of this group had second recurrences. Two babies with aggressive posterior disease (2 eyes) had retinal detachments, the first 1-week post-laser and the second 8 weeks' post laser.

1/12 babies (1/23 eyes, 4.3%) received Diode laser with injection none had second recurrence.

One baby developed a cataract in one eye and another baby developed glaucoma bilaterally after injection.|

DISCUSSION: Nearly 40% of patients had early recurrence after initial injection and the mean onset of recurrence is approximately 7 weeks.

CONCLUSION: Ranibuzimab is useful option as an initial treatment for threshold disease, especially for those with significant comorbidities who cannot tolerate the longer duration of laser treatment with sedation / general anesthetic. We highly recommended a stringent follow up protocol to look for recurrences post injection, especially the initial three- month period.

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A Prediction Model for Retinopathy of Prematurity: Primary Results from the Postnatal Growth and ROP (G-ROP) Study

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INTRODUCTION: Current ROP guidelines, based upon studies of high-risk infants and expert opinion, have low specificity for treatment-requiring disease. Postnatal-weight-gain-based models improve specificity but have been limited by complexity, small development cohorts, and decreased sensitivity in validation studies. The G-ROP Study was undertaken to develop a clinically implementable, birth weight (BW), gestational age (GA), and weight-gain (WG) prediction model, using data from a large, broad-risk cohort of premature infants.

METHODS: The G-ROP Study was a retrospective cohort study of infants undergoing ROP examinations at 30 North- American hospitals during 2006-2012. A hybrid modeling approach was used, combining BW/GA criteria; weight comparison to expected growth from infants without ROP; multiple growth-interval assessments; consideration of non- physiological WG; and user-friendly screening criteria. Numerous BW/GA levels, postnatal-age periods, numbers of time- intervals, time-interval lengths, and WG-percentile thresholds were evaluated to identify the most robust parameters.

Primary outcomes were sensitivity for ETROP type 1 ROP and reduction in infants receiving examinations.

RESULTS: 7,483 infants were studied, with median BW-1070g/(range 310-3000), GA-28wks/(22-35). Infants meeting any of 6 criteria

undergo examinations: GA<28wks; BW<1051g; WG<120g, <180g, or <170g during days-of-life 11-20, 21-30, or 31-40, respectively; or hydrocephalus. This model predicted 459/459 Type 1 (sensitivity 100%, 95%CI 98.9-100%), 524/524 treated, and 466/472 Type 2 cases, while reducing infants requiring examinations by 30%.

DISCUSSION: This large study cohort, broadly representative of infants undergoing ROP examinations, can provide more generalizable, evidence-based screening criteria.

CONCLUSION: With additional validation, the G-ROP model could be incorporated into modified ROP guidelines to reduce infants requiring examinations.

Role of preoperative prism trial in predicting postoperative diplopia

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INTRODUCTION: Intractable diplopia after strabismus surgery is rare if the desired alignment is obtained surgically. We aim to assess the role of preoperative use of prisms in predicting the occurrence of post strabismus surgery diplopia.

METHODS: Retrospective medical records of patients who underwent prism trial in the Orthoptics Clinic from January 2014 to December 2015, prior to strabismus surgery, were reviewed. Preoperative diplopia on prism trial was compared with post strabismus surgery diplopia.

RESULTS: Medical records of 60 patients were studied. Of these, 47 (78.3%) were males and 13 (21.7%) were females. The mean age was 25.63 ± 10.88 (range 8 to 59 years).

11 patients (18.3%) experienced diplopia when tested preoperatively with prisms to simulate the desired surgical outcome. 3 of these had temporary post-operative diplopia which resolved in all cases at 6 weeks with one loss to follow-up.

Out of 49 patients who showed no diplopia on preoperative prism test, 12 patients (24.5%) were found to have temporary diplopia which resolved in 7 cases during further follow-up. 3 patients having residual deviation were lost to follow-up whereas 2 patients developed intractable diplopia.

DISCUSSION: Diplopia may be observed after squint surgery in adult patients who have been over or undercorrected. Paradoxical diplopia may be observed after surgical correction of squint in those patients which exhibit ARC.

CONCLUSION: The presence of preoperative diplopia with prism testing did not correlate with the occurrence of post strabismus surgery diplopia. The possibility of postoperative diplopia cannot be ruled out in patients who fused with prisms preoperatively.

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Comparison between medial rectus pulley fixation and augmented recession in children with convergence excess and variable-angle infantile esotropia

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INTRODUCTION: To compare the outcomes of medial rectus (MR) muscle pulley fixation and augmented recession in children with convergence excess esotropia and variable-angle infantile esotropia.

METHODS: This was a prospective randomized interventional study in which children with conver- gence excess esotropia or variable-angle infantile esotropia were randomly allocated to either augmented MR muscle recession (augmented group) or MR muscle pulley posterior fixation (pulley group). In convergence excess, the MR recession was based on the average of distance and near angles of deviation with distance correction in the augmented group, and on the distance angle of deviation in the pulley group. In variable-angle infantile esotropia, the MR recession was based on the average of the largest and smallest angles in the augmented group and on the smallest angle in the pulley group.

Pre- and postoperative ductions, versions, pattern strabismus, smallest and largest angles of deviation, and angle disparity were analyzed.|

RESULTS: Surgery was performed on 60 patients: 30 underwent bilateral augmented MR recession, and 30 underwent bilateral MR recession with pulley fixation. The success rate was statis- tically significantly higher (P 5 0.037) in the pulley group (70%) than in the augmented group (40%). The postoperative smallest and largest angles and the angle disparity were statistically significantly lower in the pulley group than the augmented group (P \ 0.01).

DISCUSSION: In the current study, patients with variable-angle infan- tile esotropia and convergence excess esotropia who had pulley fixation achieved a statistically significantly greater reduction in the largest angle of strabismus and in the angle disparity after surgery. Clark and colleagues12,13 performed 2 retrospective studies to evaluate the effects of pulley fixation. They compared the effects of pos-

terior scleral fixation and pulley fixation in patients with high AC/A ratio esotropia and variable-angle infantile esotro- pia. Their results were slightly better than ours. However, the preoperative near-distance disparity in their study was lower. Mitchell and Kowal14 performed another retrospec- tive study to assess the effect of pulley posterior fixation on partially accommodative esotropia and also achieved good results.

CONCLUSION: Medial rectus muscle pulley fixation is a useful surgical step for addressing marked variability of the angle in variable angle esotropia and convergence excess esotropia. (J AAPOS 2016;20:405-409)

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Sliding shape extra ocular muscle plication: Novel Technique

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INTRODUCTION: In some indications need both extra ocular muscle transposition procedure with strengthening the muscle and the blood supply protection. In this study, we want to present a novel operation technique that will meet all these needs.

METHODS: There were 12 patients operated on with this new technique. The patients' files were reviewed retrospectively. All patients underwent complete eye examinations both preoperatively and postoperatively. Follow up of patients were at least six months.

Operation technique: After being exposed and the rectus muscle is freed from the facial structure as far as planned resection amount. 6-0 coated vicryl sutures are then placed through the two sides of the muscle while protecting the blood vessels. Then, when one suture is placed to the muscle insertion, other is put same level but one muscle width laterally to aimed transposition side.

RESULTS: In patients who were planned resection 7 mm and over, the procedure for complete muscle widening transposition was successful. Only 2/3 transpositions could be achieved in 4 patients who underwent less than 7 mm of strengthening. There was no anterior segment ischemia in 3 patients who underwent 3 rectus muscle surgery in the same eye.

DISCUSSION: In some cases needed transposition and preserving the vessels during perform the plication, and surgeon prefered resection obligatorily. This new created technique, seems to solve the problem.

CONCLUSION: 'Sliding shape' design extra ocular muscle plication found simple, safe and effective procedure. More patients and longer follow-up are needed to evaluate the real effectiveness.

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The effect of extra ocular muscle surgery on corneal biomechanics: a preliminary study

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INTRODUCTION: Studying the early effect of different extra ocular muscle (EOM) surgeries on corneal biomechanics .

METHODS: This is a comparative study , N=42, candidates for EOM surgery for strabismus correction at Cairo university hospitals. Age 14 - 37 years, equal gender distribution. Written consent was obtained for all participants. All participants had 1. Measuring of the visual acuity, refraction(spherical equivalent(SE)),assessment of the EOM motility and muscle balance , sensory evaluation & fundus examination.2.Assessing the ocular biomechanics using the Ocular response analyzer (ORA)(Reichert,model30classic,soft ware version 2.0) noting the Corneal hysteresis(CH)&Corneal resistance factor (CRF)).3.Different standard EOM surgery (Recti weakening/strengthening & Inferior oblique weakening either by myectomy or graded recession) according to the surgical indication.4.Same patients were reassessed using ORA 1 month postoperatively. â^+CH &â^+CRF were calculated ,each is the preoperative - the postoperative value.

RESULTS: ^CH =-0.78 ± 1.56. A highly significant difference was found between each of the pre and postoperative CH & the pre and postoperative CRF(p<0.001). 18 eyes had single EOM surgery while 24 had multiple(2or3) EOM surgery, ^CH in single group =-1.28 ± 1.5, ?CH in multiple group=-0.4 ± 1.49,P=0.07. 23 eyes had EOM weakening surgery while 18 had combined weakening & strengthening EOM surgery, ^CH in weakening group =-1.24 ± 1.77, ^CH in combined group=- 0.26 ± 1.07,P =0.04.A non significant difference was found for ^CRF

DISCUSSION: The release of anterior traction forces on the sclera is the suggested explanation of postoperative increase of CH

CONCLUSION: Different EOM surgery has an early tendency for increase of the postoperative CH specially for muscle weakening procedures(Recti recession /Inferior oblique muscle weakening).

Comparison of bilateral medial rectus muscle plication and resection for treatment of convergence insufficiency type of intermittent

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INTRODUCTION: To compare bilateral medial rectus plication and resection for treating convergence insufficiency (CI)-type intermittent exotropia (IXT).

METHODS: Fifty-six patients with CI-type IXT were included in this prospective study with six months follow-up. All patients were randomly divided into two groups: bilateral medial rectus plication (BMP) group (27 cases) and bilateral medial rectus resection (BRR) group (28 cases). Intraoperative bleeding, operative time and postoperative conjunctival inflammation were recorded. Surgical success was defined as alignment between 10 PD esodeviation and 10 PD exodeviation.

RESULTS: The mean preoperative deviations at distance were -33.74 ± 12.60PD in the BMP group and -36.07 ± 11.00 PD in the BRR group.At 1 day postoperatively, the mean deviation at distance was +6.56 ± 5.56PD in the BMP and +10.79 ± 9.30 PD in the BRR (p=0.046); the success rate in the BMP (77.8%) group was higher than that in the BRR (50%) group (p=0.032). At 1, 3, 6 months postoperatively, the deviations angles were not significant (p>0.05), and the success rate were 88.9%, 69.2%, 64% in the BRP group and 89.3%, 73.1%, 61.5% in the BRR group (p>0.05). The operative time in the BRP (12.92 ± 1.44 minutes) group was shorter than it in the BRR (14.70 ± 1.40 minutes) (p=0.000). The intraoperative bleeding and postoperative conjunctival inflammation in the BRR group were milder than those in the BRR (p=0.000).

DISCUSSION: The results of deviations and success rate indicate that the effect of BMP is similar to that of BRR. Plication avoids lost muscle and preserves anterior segment circulation, so that the BRP procedure is of highly safety.

CONCLUSION: The BRP surgery is an alternative procedure for treating CI-type IXT with simpler, safer and less traumatic

FP-01

提前光照刺激对小鼠视网膜中 capase-3 表达的影响

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目的：人工开睑使小鼠提前睁眼提前接受光照，观察早期光暴露对小鼠屈光状态的影响，研究小鼠视网膜中 caspase-3 的表达变化。

方法：随机选取实验用新生C57BL/6小鼠共30只，随机分成3组（A、B和C组）。于P6和P10分别处理A组和B组小鼠右眼，使其提前睁眼接受光照，左眼为自身对照，C 组小鼠于 P14 自然开睑。所有小鼠于 P14 检影验光，数显千分尺测量眼轴长度，免疫组化和 Western-Blot 检测小鼠视网膜中 caspase-3 的表达。

结果：1. A 组小鼠右眼平均屈光度（31.40 ± 0.25）D 与左眼（38.95 ± 0.36）D 相比较，形成了（-7.55 ± 0.15）D 的相对近视；B 组小鼠右眼形成了（-5.40 ± 0.10）D 的相对近视；C 组小鼠双眼比较无明显差异 2. A 组及 B 组小鼠右眼眼轴均明显短于 C 组 3. 免疫组化检测 caspase-3 在提前开睑眼视网膜中均有阳性表达，Western-Bolt 结果显示，提前接受光照时间越早，caspase-3 蛋白表达越高。

结论：1. 提前光照刺激可诱导小鼠形成相对近视 2. 早期光暴露小鼠近视眼中视网膜中 caspase-3 表达增高，可能参与视网膜细胞凋亡过程。

Expression of retinal caspase-3 in premature lid-opening myopia animal model

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PURPOSE: To investigate the influence of lighting in advance on the development of ocular growth and refractive error, to study the expression of Caspase-3 in the mice retina.

METHODS: 30 Newborn C57BL/6 mice were selected and divided randomly into 3 groups (group A，group B，group C) in the experiment. To separate the right eyelid of mice of group A with operation in the 6th day after birth, and the same way for the group B in the 10th day after birth. Left eye is self controlled eye in both group A and group B. Besides, eyes of group C open naturally without any treatment. The refraction of all eyes of mice were checked at P14, ocular axial dimensions were measured. Immunohistochemistry and Western-Blot were used to detected the expression of Caspase-3 in mice retinal.

RESULTS: The right eyes of the mice in group A , which Average value was (38.95 ± 0.36)D , developed significant myopia (-7.55 ± 0.15) D, compared with the untreated left eye which Average value were(31.40 ± 0.25) D. Compared with the left eye , the right eye in group B were developed significant myopia（ -5.40 ± 0.10 ）D.

There is no significant difference in group C. In addition, immunohistochemistry and Western-Blot showed that the Caspase-3 in the treated eyes retina in premature lid-opening myopia animal model increased.

CONCLUSION: 1. Premature visual exposure can induce relative myopia. In addition, the longer the light , the higher the degree of myopia of the eye of mice. 2. During the development of premature myopia mice model, apoptosis of retinal cells occurs and is mediated by caspase-3, which was increased in the treated eyes retina.

FP-02

甲状腺相关眼病易感基因与疾病严重程度相关性研究

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目的：选取了 6 个基因片段上 14 个单核苷酸多态性（SNP）位点，旨在发现甲状腺相关眼病（TAO）易感基因及其与 TAO 严重程度的相关性。

方法：纳入研究 495 人：健康组 152 人，GD 无眼征组 189 人，TAO 组 154 人。TAO 组：轻度 52 人，中重度 55 人，危及视力 47 人。Taqman 实时荧光定量 PCR 分析技术检测 14 个 SNP 位点的基因型。

结果：健康组、GD 组、TAO 组 14 个 SNP 的基因型差异无统计学意义。健康组（ 152 人，组 1 ）、GD+ 轻度 TAO 组（241 人，组 2 ）、中重度危及视力 TAO 组（ 102 人，组 3 ）进行分析：TNF alpha-863C/A CC 基因型频率组 3 低于组 2（ P ＜ 0.05，OR=0.57 ）和组 1（ P ＜ 0.05，OR=0.51 ）。TNF alpha -1031T/C 位点 TT 基因型频率组 3 低于组 2（ P ＜ 0.05，OR=0.55 ）和组 1（ P ＜ 0.05，OR=0.47 ）。CTLA-4 CT60A/G 位点 AA 基因型频率组 3 高于组 2（ P ＜ 0.05，OR=6.1 ）。

结论：TNF alpha-863C/A、TNF alpha -1031T/C、CTLA-4 CT60A/G 是 TAO 易感基因。

Association between TAO susceptibility genes and disease severity

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PURPOSE: Our group selected 14 SNPs based on previous studies, aiming to find out susceptibility genes of TAO and the association with disease severity.

METHODS: 495 participants were selected, including 152 controls, 189 GD patients without ophthalmopathy and 154 TAO patients. TAO was classified into mild(n=52), moderate to severe(n=55) and sight-threatening(n=47) groups. TaqMan real-time quantitative polymerase chain reaction was used to test the polymorphism of 14 SNPs.

RESULTS: The genotypes of TAO, GD, and controls were compared, but no significant difference was found. We analyzed controls(n=152,Group1), GD patients without ophthalmopathy and mild TAO patients(n=241,Group2),moderate-to-severe and sight-threatening patients(n=102,Group3).CC genotypic frequency of TNF alpha-863C/A was lower in Group3 than in Group2（ P ＜ 0.05，OR=0.57 ）and in Group1（ P ＜ 0.05，OR=0.51 ）.TT genotypic frequency of TNF-a -1031T/C was lower in Group3 than in Group2（ P ＜ 0.05，OR=0.55 ）and in Group1（ P ＜ 0.05，OR=0.47 ）. AA genotypic frequency of CTLA-4 CT60A/G was higher in Group3 than in Group2（ P ＜ 0.05，OR=6.1 ）.

CONCLUSIONS: TNF alpha-863C/A,TNF alpha -1031T/C and CTLA-4 CT60A/G are susceptibility genes of TAO, and are associated with the disease severity.

FP-03

8 个先天性眼外肌纤维化 I 型家系 KIF21A 基因突变热点研究

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目的：*KIF21A* 基因突变是先天性眼外肌纤维化 I 型（CFEOM1）的主要原因。本研究探索了致 8 个中国 CFEOM1 家系的突变原因。

方法：经过眼科详细检查，确定 8 个先天性眼外肌纤维化 I 型家系。对先证者直接测序 *KIF21A* 的编码外显子和相邻的 100 个碱基的内含子区域。当家系中的序列变异和该家系表型共传递，且未在 192 个种族相配的染色体上发现，被认为致病突变。

结果：7/8 先证者找到了 *KIF21A* 杂合性突变，包括 6 个已知 R954 位置上的突变和 1 个新突变（E1230D）。在 6 个 R954 位置的突变中，2 个先证者的（R954T）突变在该家系中的患病兄妹中找到，但是父母并不携带相同突变，进一步通过单体型分析证明其与生殖系嵌合体相关。总之，87.5%(7/8) 的家系找到了 *KIF21A* 突变。

结论：本研究表明 R954 可能是中国人 CFEOM1 中 *KIF21A* 基因的突变热点。 另外，本研究证明 *KIF21A* 的突变热点直接测序是找到 CFEOM1 致病原因的研究与临床应用的有效方法。

KIF21A gene hotspot region in eight Chinese families associated with congenital fibrosis of the extraocular muscles type 1 (CFEOM1)

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PURPOSE: Congenital fibrosis of the extraocular muscles type 1 (CFEOM1) is associated with heterozygous mutations in the KIF21A gene. To determine the mutations responsible for the congenital fibrosis of the extraocular muscles type I (CFEOM1) in 8 Chinese families.

METHODS: Eight Chinese families with congenital fibrosis of the extraocular muscles (CFEOM) type 1 were identified by Ophthalmological examinations. Direct sequencing of *KIF21A* coding exons and adjacent intronic regions were analyzed. Sequence changes were considered pathogenic when they segregated with the disease in the family as well as their absence in 192 ethnically matched control chromosomes.

RESULTS: Of these 8 families subjected to direct sequencing, seven probands showed KIF21A heterozygous mutation, including six (R954) and one novel (E1230) mutation. Two of 6 revealed heterozygous (R954T) in affected siblings but not in parents (Haplotype analysis suggested paternal inheritance which consistented with parental germline mosaicism). Overall, mutations were detected in approximately 87.5% (7/8) of CFEOM1 families tested, with one 12.5% (1/8) unidentified.

CONCLUSIONS: These results suggest R954 is likely to be the hotspot region of KIF21A in CFEOM type1 Chinese population. In addition, this study demonstrates that R954 region sequencing remains a powerful tool for identifying the genetic defect of CFEOM1 family for both research and clinical applications.

FP-04

正常婴幼儿视力发育评估

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目的：了解正常婴幼儿视力发育特点。

方法：对一组 1506 名正常儿童在 42 天、9 个月、18 个月及 3 岁的视力分别进行检测。对 42 天，9 个月及 18 个月的婴幼儿应用 TAC（The Teller Acuity Card）进行强迫性选择性观看视力检查。3 岁儿童应用 Lea Symbols 视力表分别进行视力检查。在 3 岁时对接受视力检查的儿童同时进行眼位及屈光筛查。

结果：双眼视力检查：婴幼儿 42 天 (n=1062) 时视力中位数为 1.3cpd(29.9%),9 个月时 (n=1260) 为 6.4cpd(45.6%)，18 个月时 (n=1026) 为 9.6cpd(59.9%)。单眼视力检查：9 月龄儿童中 71.75% 可以配合完成检查，其中位数为 6.4cpd (56.5%) ，在 18 月龄儿童为 33.82% (65.3%) ，中位数为 6.4cpd，3 岁时 (n=202) 为 20/32(57.3%)。

结论：对于低龄幼儿 Teller 视力卡进行选择性观看是有效的检测方法。正常婴幼儿随年龄增长，视力水平逐渐提高，42 天至 9 月龄段发育迅速，9 月龄至 18 月龄发育较为平缓。单眼视力检查，在 9 个月配合度较高，18 个月较低。

Assessment of visual acuity in normal infant and young children

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PURPOSE: To assessment of visual acuity in normal infant and young children.

METHODS: All children (n=1506) born in 2013 in Sanhe, Hebei province have been followed from birth to 3 years of age. Visual acuity was examined at the ages of 42 days, 9 months, 18months and 3 years(36 months). At the age of 3, ocular inspection and refraction examination of the eyes was performed. Visual acuity(binocular) was tested in 42 days, 9 months and 18 months by the Force Choice Preferential Looking with Teller visual acuity cards. The visual acuity (right eyes and left eyes) measured with the Lea Symbols in 3 years age. If refraction error and strabismus have been found, the children's visual acuities were exclusive.

RESULTS: Binocular vision: The median in 42 days, the median of visual acuity in 42 days (n=1062) is 1.3cpd(29.9%), in 9 months (n=1260) is 6.4cpd (45.6%), in 18 months (n=1026) is 9.6cpd(59.9%). Monocular vision: For 9 months old children, 71.75% of them can finish monocular visual acuity test. The median of visual acuity is 6.4cpd (56.5%). For 18 months old children, 33.82% of them can finish monocular visual acuity test The median of visual acuity in right eye is 6.4cpd (65.3%), in 3 years (n=202) is 20/32(57.3%).

CONCLUSION: Using Teller Acuity Card and Lea symbol is an effective way to assessment young children's visual acuity. Visual acuity in children form 42 days to 9 months developed rapidly. Form 9 months to 18 months, visual acuity developed gently. For monocular vision test, 9 months old children can cooperate better than 18 months old children.

FP-05

屈光参差性弱视儿童运动视觉功能的功能磁共振研究

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目的：利用血氧水平依赖性功能磁共振成像（BOLD-fMRI）技术对屈光参差性弱视儿童运动视觉功能受到的影响。

方法：采用水平左向、右向移动垂直正弦光栅，1.5T 磁共振成像系统扫描图像获取数据，从我院眼科门诊连续抽取屈光参差性弱视 25 例；正常对照 25 例。受试者完成视觉任务及数据采集后，应用 SPM5 软件进行数据处理和统计分析。

结果：①正常对照组激活最明显的区域为中颞区、Brodmann37 和 19 区；②弱视眼较正常对照组在中颞区、Brodmann 19、37 区减少显著，额叶有较大范围激活；③对侧眼较正常对照组在颞中回、楔叶、舌回为低于正常对照的主要脑区。

结论：1. 屈光参差性弱视儿童视觉运动功能皮层 BOLD-fMRI 信号异常表现为脑皮层激活区体积和强度较正常儿童明显下降，非弱视眼亦存在显著性异常 ;2. 单眼视觉运动刺激时，弱视眼有更多的脑区参与反应。

Study of the perception of visual motion in children with anisometropic amblyopia using functional MRI

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OBJECTIVE: To detect the pathogenetic mechanism of motion-sensitive cortical deficit in response to motion stimuli in children with anisometropic amblyopia using blood oxygenation level dependent-functional magnetic resonance imaging.

METHODS: BOLD-fMRI technique on 1.5T MRI and block design task conditions were used . Subjects included 20 anisometropic amblyopia and 25 normal subjects. All data obtained were processed and analyzed with the software of SPM5.

RESULTS: ① Middle temporal area (MT)、middle temporal lobe 、inferior temporal lobe and middle occipital lobe were the most obvious activation areas in the normal controls; ② In contrast to the normal controls ,the spatial extent and intensity of the amblyopic eye was obviously decreased in the visual cortex of MT、Brodmann area19、37、17、18; the increased activation area was frontal gyrus; ③ The fellow eye mainly decreased in the visual cortex of middle temporal gyrus、cuneus、lingual gyrus; ④ The spatial extent and intensity of the visual cortex activation in the cortex of MT、middle temporal gyrus and cuneus was obviously decreased in the amblyopic eye than in the fellow eye，with middle frontal gyrus increased obviously.

CONCLUSION: ① The spatial extent and intensity of the visual cortex activation in the visual cortex were decreased in the amblyopic eye than in normal controls ;the fellow eye was also abnormal; ② More visual cortex area was involved when stimulating the amblyopic eye.

FP-06

微视野计评定弱视旁中心注视患者的注视特性

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目的：利用微视野计观察弱视旁中心注视患者的注视特性。

方法：连续性收集 2015 年 6 月至 2017 年 2 月我院斜弱视门诊的弱视患者，用直接检眼镜筛查后纳入旁中心注视患者 13 例 13 眼 (男性 5 例，女性 8 例)，年龄 13.38 ± 9.57 岁 (6 ~ 40 岁). 所有患者均用微视野计进行注视稳定性检查，用二维轮廓椭圆面积 (BCEA) 量化注视稳定性，用注视点到中心凹的距离表示偏心度，分析注视稳定性与偏心度的相关性，并分析注视点在视网膜的好发象限。

结果：13 例患者中，7 例为屈光参差伴斜视性弱视，4 例为斜视性弱视，1 例为屈光参差性弱视，1 例为形觉剥夺性弱视；患眼最佳矫正视力 (BCVA)0.05 ~ 0.4，平均 logMAR BCVA 为 0.90 ± 0.33。平均 BCEA 为 (15.73 ± 2.64)deg^2，注视点到中心凹的距离与 BCEA 正相关 (r = 0.859，P<0.002)。7 例患者的注视点分布在右侧视网膜 (53.8%)，4 例在左侧视网膜 (30.8%)，2 例在上方视网膜 (15.4%)，0 例在下方视网膜。

结论：推荐使用微视野计确诊旁中心注视；弱视旁中心注视患者的注视点距离中心凹越远，注视稳定性越差；注视点分布在右侧视网膜最多。

Fixation Patterns of Amblyopia with Eccentric Fixation Assessed by the MP-1 Microperimeter

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OBJECTIVE: To investigate fixation patterns of amblyopia with eccentric fixation with the MP-1 microperimeter.

METHODS: Using direct ophthalmoscope to screen eccentric fixation，we recruited 13 consecutive patients(13 eyes) from the strabismus and amblyopia clinic at Eye and ENT Hospital of Fudan University between 1 June 2015 and 28 February 2017. Participants were aged 13.38 ± 9.57years (ranged 6~40 years). 5 were male. Fixation test was performed with MP-1 microperimeter on all 13 patients, bivariate contour ellipse area(BCEA) was applied to quantify fixation stability, and eccentricity was quantified by the distance from preferred fixation pionts to the fovea. We analyzed the relationship between fixation stability and eccentricity and which retinal quadrant that preferred fixation points occured in more frequently.

RESULTS: Among all 13 participants, 7 had anisometropic and strabismic amblyopia, 4 were strabismic amblyopia, 1 was anisometropic amblyopia and 1 was deprivation amblyopia. Best-corrected visual acuity(BCVA) of amblyopia eyes was 0.05 ~ 0.4，mean logMAR BCVA is 0.90 ± 0.33. Mean BCEA was (15.73 ± 2.64)deg^2, the distance from preferred fixation points to the fovea and BCEA were positively correlated (r = 0.859，P<0.002). 7 participants developed the preferred fixation points in the right retina(53.8%)，4 in the left retina(30.8%)，2 in the upper retina(15.4%) and 0 in the lower retina.

CONCLUSIONS: We recommend using the MP-1 microperimeter to confirm eccentric fixation. In amblyopia with eccentric fixation，the farther the eccentricity is，the worse the fixation stability. Preferred fixation points occurred more frequently in the right retina.

FP-07

远视屈光参差性弱视眼脉络膜和黄斑神经节细胞复合体厚度分析

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目的：分析并比较远视屈光参差性弱视儿童弱视眼与对侧非弱视眼的脉络膜和黄斑神经节细胞复合体的厚度差异。

方法：选取远视屈光参差性弱视儿童 41 人，利用图像增强的光学相干断层扫描技术（EDI-OCT）分别检测双眼黄斑中心凹下脉络膜层厚度和黄斑区神经节细胞复合体厚度；同一受检者弱视眼与对侧非弱视眼采用配对 *t* 检验。

结果：弱视眼黄斑中心凹下脉络膜层厚度为 321.83um ± 12.74um 而非弱视眼的黄斑中心凹下脉络膜层厚度为 316.78um ± 18.76um(P>0.05)；弱视眼黄斑神经节细胞复合体的厚度为 83.78um ± 4.81um 而非弱视眼的黄斑神经节细胞复合体的厚度为 83.26um ± 4.17um(P>0.05)。

结论：远视屈光参差性弱视儿童的弱视眼与非弱视眼在黄斑区脉络膜厚度与神经节细胞复合体厚度的差异无统计学意义。

Choroidal Thickness and Macular Ganglion Cell Complex Thickness In Hyperopic Anisometropic Amblyopia

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OBJECTIVE: To compare the subfoveal choroidal thickness and macular ganglion cell layer (MGCL) thickness in hyperopia anisometropic amblyopic children between the amblyopic eyes and the fellow eyes.

METHODS: The subfoveal choroidal thickness and the MGCL were measured by enhanced depth imaging spectral-domain optical coherence tomography(EDI-OCT) in 41 hyperopic anisometropic amblyopic children. The value of subfoveal choroidal thickness and the macular ganglion cell layer thickness were compared between the amblyopic eyes and the fellow eyes. The average thickness of the eyes between the different types was compared using the paired *t* test.

RESULTS: Mean subfoveal choroidal thickness measurements were 321.83um ± 12.74um and 316.78um ± 18.76um in amblyopic and fellow eyes. There was no statistically significant difference between the groups (P>0.05). Mean MGCL thickness was 83.78um ± 4.81um in amblyopic eyes and 83.26um ± 4.17um in the fellow eyes. Statistically signi? cant difference was not seen between the groups (P>0.05).

CONCLUSIONS: There was no statistically difference between the two groups. Mean subfoveal choroidal thickness and MGCL thickness were not statistically significant between hyperopic anisometropic amblyopic eyes and normal fellow eyes.

FP-08

临床已治愈弱视患者双眼平衡及微眼动研究

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目的：探讨临床已治愈弱视患者在视力达到正常水平的同时双眼平衡及微眼动是否达到正常。

方法：收集 2015 年 6 月至 2016 年 7 月在我院眼科门诊就诊的已治愈弱视患者 14 例，年龄 6 ~ 11 岁，要求双眼最佳矫正视力 ≥1.0，随访时间达到 1 年以上。门诊随机选取相应年龄的 15 例正常儿童做为对照组。所有被试进行由中国科学技术大学视觉研究实验室编写的 Matlab 程序进行双眼相位整合平衡点测试，立体视测量采用 RDS 立体视图谱；其中 11 例已治愈弱视患者和 5 例正常对照参与微眼动检测，采用 Eyelink-1000 高速眼球运动记录系统（加拿大 SR Research 公司）进行眼球运动波形的记录。对实验的结果采用 SPSS 16.0 统计软件进行处理分析。

结果：临床已治愈弱视组与正常对照比较双眼平衡功能仍存在显著差异；弱视眼的微眼动幅度下降（0.83 ± 0.02），峰值角速度下降（51.96 ± 0.78；），但与正常组无显著差异（p = 0.19）；已治愈弱视组微眼动的发生率上升，与正常组有显著差异（p < 0.01）。

结论：临床已治愈弱视虽然视力达到正常水平，但在双眼平衡及微眼动的发生率上仍与正常对照存在差异，仍需进一步的随访。

Study of binocular balance and microsaccade in clinical treated amblyopia

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OBJECTIVE: To evaluate whether the binocular balance and microsaccade reached normal in clinical treated amblyopia.

METHODS: 14 treated anisometropia amblyopia were screened, ages range 6 to 11 years old, and 15 normal children were screened as the control group, ages range 7 to 11 years old, all the participants were tested by Matlab procedures (balance point measurement), RDS stereogram was used to test stereoacuity. 11 treated amblyopia and 5 normal subjects were tested with Eyelink-1000 (Canada SR Research) to record the eye movement. The results was analyzed by SPSS 16.0 statistical software.

RESULTS: There is significantly different between treated anisometropia amblyopia group and normal control group on the balance point. t (27) = 4.907, P = 0.000, P < 0.001). The amplitude of microsaccade in treated amblyopia is decreased, the peak angular velocity of microsaccade in treated amblyopia is decreased, and there is no significant difference between the treated amblyopia and the normal controls. The average amplitude of treated amblyopia is 0.83 ± 0.02； The average amplitude of normal control is 0.87 ± 0.03. The average peak angular velocity of treated amblyopia is 51.96 ± 0.78； The average peak angular velocity of normal control is 54.23 ± 1.54.

The rate of microsaccade is arise, there is significant difference between the treated amblyopia and the normal controls, p < 0.01. The average rate of microsaccade in treated amblyopia is 1.66 ± 0.07； The average rate of microsaccade in normal control is 1.34 ± 0.07.

CONCLUSION: Although the visual acuity reached normal in cured amblyopia, there is still abnormal function in binocular balance and microsaccade.

FP-09

斜视性弱视患者脑部自发性活动的改变：静息态功能性核磁共振成像研究

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目的：研究斜视性弱视成人与正常受试者在静息状态下脑部自发性活动的异同，并分析这些差异的可能意义。

方法：纳入符合入组标准的 13 例成人斜视性弱视患者和 41 例性别、年龄相匹配的正常对照。采用 Siemens Trio 3.0T 磁共振扫描仪进行静息态 fMRI 检查，对数据进行处理，获得每名受试者的标准局部一致性脑图。采用 REST 软件对两组图像进行两独立样本 t 检验的分析，对比两组间图像的差异，定位出存在显著差异的脑区，比较斜视性弱视组相较正常对照组脑部自发性活动的改变。

结果：与正常对照组相比，斜视性弱视组右侧楔叶、舌回、枕上回局部一致性降低；右侧楔前叶、右侧额上回和额中回局部一致性增高；斜视性弱视组中右侧楔叶、舌回和枕上回、右侧额上回和额中回以及右侧楔前叶 ReHo 值的改变与弱视眼的视力没有显著的相关性。

结论：斜视性弱视成人与正常受试者相比，在静息状态下存在部分脑区的自发性活动的异常。其中自发性活动降低的脑区主要位于初级、高级视觉皮层的部分区域，该发现证实了斜视性弱视成人视觉皮层的功能损伤；而自发性活动升高的脑区主要集中于与眼动、意识活动相关的区域，提示斜视性弱视成人大脑可塑性的功能代偿。

Changes of spontaneous brain activities in patients with strabismic amblyopia: a resting-state fMRI study

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PURPOSES: To compare the spontaneous brain functional activities under the resting state between subjects with strabismic amblyopia and normal control, and to explore the possible significances of these differences.

METHODS: Thirteen adult subjects with strabismic amblyopia and 41 normal control whose age and gender matched with strabismic amblypoia group were enrolled into the study. All of them accepted the scanning with Siemens Trio 3.0T magnetic resonance scanner under resting-state. The software named DPARSF was applied based on the platform of Matlab for data processing. ReHo values were then calculated and standardized. The software named REST was used to make statistical analysis for two groups, different regions were located to reflect the changes of brain spontaneous activities between two groups.

RESULTS: Compared with the normal control group, some parts of right occipital lobe such as lingual gyrus, cuneus and superior occipital gyrus were found with reduced regional homogeneity in strabismic amblyopia group; right precuneus and some parts of right prefrontal cortex including superior frontal gyrus and middle frontal gyrus were found with increased regional homogeneity in strabismic amblyopia group; In strabismic amblyopia group, although changes of regional homogeneity values were found in the right lingual gyrus / cuneus/superior occipital gyrus, right superior frontal gyrus and right middle frontal gyrus, no significant correlations were found between ReHo values and the distant visual acuity (logMAR) of the amblyopic eye.

CONCLUSIONS: Compared with normal control subjects, there are some differences of brain spontaneous activities in patients with strabismic amblyopia. The brain regions of decreased ReHo value were mainly located in the primary and advanced visual cortices, which demonstrates functional impairment of visual cortex in adults with strabismic amblyopia. And the regions of increased ReHo value were mainly located in the visual motor and cognitive activities related areas, which suggests functional compensation of brain plasticity in adults with strabismic amblyopia.

FP-10

儿童顺规散光度数变化对视觉质量的影响

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目的：探讨儿童顺规散光度数变化对视觉质量的影响。

方法：收集就诊于大连医科大学附属二院眼科门诊的 7-10 岁儿童，选取符合入选标准的顺规散光儿童。59 例患者依散光度

大小分为 A 组（1.0D≤散光度＜2.0D）、B 组（2.0D≤散光度＜3.0D）、C 组（3.0≤散光度＜4.0D）。通过 OPD 检查获取波前像差、调制传递函数（MTF）和点扩散函数（PSF）等光学信息，进而分析全眼的总高阶像差、总彗差、总球差、总三叶草所对应的均方根值（RMS）和 MTF 曲线对应的 Area Ratio（AR 值）及 PSF 曲线对应的斯特列尔率（strehl ratio, SR）。采用单因素方差分析比较三组间各高阶像差所对应的 RMS 值、AR 值及 SR 值的差异。

结果：4mm 瞳孔直径下，RMS-HO、RMS-T. Coma 及 RMS-T. Tre 随着散光度的增加而增大，且三组之间差别均有统计学意义（$P < 0.05$）。RMS-T. Sph 随着散光度的增加而增大，但组间差别无统计学意义（$P > 0.05$）。

结论：儿童顺规散光度的变化对高阶像差、调制传递函数、点扩散函数均有干扰，且主要对高阶像差的不对称成分产生影响，从而影响了视觉质量。

The effect of the degree of with-the-rule astigmatism on visual quality of children

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AIM: To investigate the effect of the astigmatism values of children on optical quality.

METHODS: The children, ranging in age from 7 to 10 years, were dilated the pupils with 1% atropine ointment for three days, performing optometry examination. Fifty-nine children who met the inclusion criteria were divided into three groups according to the degree of astigmatism: A (1.0D≤astigmatism ＜ 2.0D), B (2.0D≤astigmatism ＜ 3.0D), C(3.0D≤astigmatism ＜ 4.0D). In the meantime, OPD-SCAN-III aberrometer was used to measure corneal topography, point spread function (PSF), modulation transfer function (MTF) and other optical images. Total higher order aberrations, total coma aberration, total spherical aberration, total trefoil aberration corresponding to the RMS value and the AR(Area ratio)value of MTF, the SR(Strehl ratio) value of PSF with a 4mm pupil diameter were assessed. Three groups of higher order aberrations corresponding to the RMS value and the AR value of MTF, the SR value of PSF were respectively compared by one-way ANOVA.

RESULTS: Three groups of RMS-HO (the RMS of total higher order aberrations), RMS-T.Coma (the RMS of total coma aberrations), RMS-T. Tre (the RMS of total trefoil aberrations) and RMS-T.Sph (the RMS of total spherical aberrations) significantly increased with the degree of astigmatism increasing. While there were no significant differences in RMS-T.Sph of groups. The AR value and the SR value decreased with the degree of astigmatism increasing. And there were significant differences in the AR value and in the SR value.

CONCLUSION: Astigmatism has a significant influence on the higher-order aberrations, MTF and PSF in the children with-the-rule astigmatism. The astigmatism with-the-rule mainly has an effect on the asymmetric components of higher order aberrations, then affect optical quality.

FP-11

小儿眼前节微创手术的技巧探讨

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目的：探讨微创小儿眼前节手术的技巧。

方法：对 2007 年 2 月至 2017 年 2 月在我科住院的（<13 岁）儿童白内障和无晶体眼患者 854 例 1275 眼，前房积血患者 58 例 58 眼，瞳孔残膜或机化膜患者 28 例 42 眼的临床资料进行分析。回顾所有患者的术中操作：1、均在前房灌注下进行；2、灌注口和辅助切口分开，大小均为 1.1mm；3、在手术中均使用了 23G 玻璃体显微手术器械：玻切头行囊膜切除和前段玻璃体切除，或行前房凝血块切除，或行瞳孔残膜和机化膜切除；显微剪用于剪切组织；膜镊可用于囊膜撕开。术后使用激素和抗生素眼液 2-4 周。

结果：10 年来共治疗小儿眼前节疾病患者 940 例 1375 眼。患者年龄 2 个月到 12 岁，平均 7.13 ± 2.47 岁；随访时间 6 月到 10 年，平均 5.72 ± 3.12 年。术中未出现严重并发症；术后早期前房炎症轻，瞳孔活动度好；术后远期未见其他并发症。

结论：采用微创手术方法保证了在小切口状态下完成所有小儿眼前节手术，因此很好地维持了前房深度，稳定术中眼压，保持瞳孔扩大，从而易于各种前房操作，最终达到减少医源性组织损伤，减轻术后炎症和术后感染的发生率的目的。

Techniques of minimally invasive anterior segment surgery in children

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PURPOSE: Due to the special anatomical features in children's eyes, the complications after anterior segment surgeries in children are common so we developed some minimally invasive techniques in the operations.

METHODS: A retrospective design was used between Feb 2007 and Feb 2017. All patients were aged between 2 months and 12 years old, and there were 854 cases (1275 eyes) of cataract or/and aphakia, 58 cases (58 eyes) of traumatic hyphema, 28 cases (42 eyes)

of persistent pupillary membrane. The minimally invasive techniques in all the operations are including: 1. Using an anterior chamber maintainer (ACM). 2. Two separate limbal 1.1mm paracenteses are created for the insertion of the ACM and the vitrectomy probe or other instruments. 3. The 23G Vitreo-Retinal instruments are used in all the operations. Such as, capsulotomy, anterior vitrectomy, pupilloplasty and membrane ablation are performed with a vitrectomy probe. The forceps and straight/curved scissors can also be used in the procedures.

RESULTS: Those minimally invasive techniques were performed in 1375 eyes of 940 children during the past 10 years. Average age at surgery was 7.24 ± 2.56 years with an average follow-up period of 5.72 ± 3.12 years. No serious complication has been detected during the operations and in the follow-up period. There were no cases of heavy AC reaction shortly after the operations so only 2-4 weeks of antibiotic and anti-inflammatory drops were needed.

CONCLUSIONS: By using the minimally invasive techniques, all the anterior segment surgeries in children could be performed under small incisions so deep AC depth, stable IOP and big pupils could be maintained during the whole operation. In the long run, we can achieve the goals of reducing iatrogenic damages and decreasing the complications during and post operations.

FP-12

阈值期早产儿视网膜病变治疗效果观察

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目的：观察阈值期 ROP 治疗后的效果。

方法：对在昆明市儿童医院眼科确诊的 153 例阈值期 ROP，评估各种治疗后患眼视网膜情况

结果：153 名阈值期 ROP 共 306 眼，3 期 267 眼接受视网膜激光治疗，术后均视网膜稳定；4 期中，5 眼接受抗 VEGF+ 玻璃体切割术 + 视网膜激光术，3 眼接受抗 VEGF 治疗，2 眼接受抗 VEGF+ 视网膜激光术，治疗后视网膜均稳定。5 期中，1 眼行玻璃体切割 + 抗 VEGF+ 视网膜激光治疗，术后视网膜稳定，1 眼接受抗 VEGF 治疗后视网膜全脱离；APROP 患儿中，8 眼接受抗 VEGF 治疗后，其中 7 眼视网膜稳定，6 眼接受抗 VEGF+ 视网膜激光光凝术后视网膜稳定

结论：阈值期 ROP 接受治疗后，3 期预后较好；4 期通过治疗视网膜稳定，但不接受治疗将导致视网膜脱离而失明；5 期预后差；APROP 通过早期积极治疗效果满意。

Treatment effect of threshold disease in ROP

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OBJECTIVE: To observe treatment effect of threshold disease in ROP.

METHODS: Retrospective cases series study. Observe treatment effect of 153 threshold disease in ROP in Kunming children's hospital from Jun 2013 to Jan 2017.

RESULT: 267 eyes are stage 3, 13 eyes are stage 4,12 eyes are stage 5, 14 eyes are AP-ROP. 267 eyes in stage 3 retinas remain stable. stage 4 retinas remain stable. 1 eye in stage 5 retina remain stable. 1 eye in stage 5 occur retina detachment. 7 of 8 AP-ROP remain stable, 1 of them occur part of retina detachment.

CONCLUSION: Treatment of threshold disease in ROP, prognosis of stage 3 are better. stage 4 retina remain stable with treatment but lead retina detachment without treatment. Prognosis of Stage 5 are worst. Prognosis of AP-ROP is stable with positive treatment.

FP-13

2001-2015 年中国北部儿童眼球摘除的临床分析

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目的：回顾 2001-2015 年中国北部儿童眼球摘除的临床特点。

方法：收集 2001 年到 2015 年于山东省眼科研究所行眼球摘除的 14 岁及以下儿童的病历资料。

结果：15 年中，行眼球摘除的患儿共 71 例（71 眼），男童 64.79%，女童 35.21%。15 年中的总眼球摘除率为 0.76%，并有明显的下降趋势。其中 2001-2005 年为 3.45%，2006-2010 年为 0.80%，2011-2015 年为 0.04%。眼外伤是最主要的病因，占 52.11%。其中 78.38% 为男童，21.62% 为女童。89.19% 患儿为开放性眼外伤，8.11% 为闭合性眼外伤，2.7% 为化学伤。平均年龄为 9.97 岁。自眼外伤发生至眼球摘除平均经历了 1060.32 天。平均花费为 13538.47 元。RB 是第二位的病因，占眼球摘除总数的 22.54%。其中 68.75% 为女童，31.25% 为男童。2011-2015 年间未发生一例因 RB 造成的眼球摘除。平均年龄为 2.19 岁。平均花费为 5000.30 元。

结论：15 年来，中国北部儿童眼球摘除率明显下降，这归功于眼外科手术技术的提升、RB 治疗的进步和公众对儿童健康安全关注的提高。

The epidemiology and etiology of pediatric enucleation in North China,2001-2015

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PURPOSE: To review the epidemiology and primary disease of pediatric enucleation in North China over time.

METHODS: Case records of pediatric enucleation（aged from 0 to 14 years-old）at Shandong Eye Institute from January 2001 to December 2015 were reviewed. Changes during three periods were compared and analyzed：from 2001 to 2005; from 2006 to 2010 and from 2011 to 2015.

RESULTS: Case records of 71 eyes from 71 pediatric patients were analyzed, consisting of 46 boys（64.79%）and 25 girls（35.21%）.The prevalence of pediatric enucleation during the whole 15 years was 0.76%（71/9307）, with an obvious decrease trend, during 2001 to 2005, the figure was 3.45%（43/1245）, and it dropped to 0.80%（26/3231）during 2006 to 2010, a further drop to 0.04%（2/4831）during 2011 to 2015.

Trauma（52.11%, 37/71）was the first most etiology of in pediatric enucleation. 78.38%（29/37）of the pediatric enucleations because of trauma happened to boys，while 21.62%（8/37）to girls. 91.90%（34/37）of the trauma patients had at least one operation before their enucleation. 70.27%（26/37）of the trauma patients had at least one surgery in their local hospital，while 29.73%（11/37）had their first surgery in our hospital, among which, only 7 patients（7/11,63.6%）had their first surgery timely operated within 24 hours. 33 eyes（89.19%）exhibited open globe injures，3 eyes（8.11%）suffered from closed globe injures，1 eye（2.7%）suffered from chemical injures. The mean trauma patient age was 9.97 ± 3.40years. The mean period from injury to enucleation was 1104.70 ± 1211.82 days. The mean total charges were ￥13538.47 ± 8836.58 per person.

Retinoblastoma（22.54%, 16/71）was the top second etiology in pediatric enucleation. 68.75%（11/16）of the pediatric enucleations due to RB happened to girls，while 31.25%（5/16）to boys. No children lost their eye because of Rb during 2011 to 2015. The mean RB patient age was 2.19 ± 1.42 years. The mean period from symptoms showing to enucleation was 59.69 ± 76.44days. The mean total charges were ￥5000.30 ± 3806.09 per person.

CONCLUSIONS: Over time, a decrease in pediatric enucleation in North China was observed, possibly attributable to better surgical techniques, improvements in treatment of RB and public health interventions on children.

FP-14

分期晶状体切割和玻璃体切割手术在晚期小儿玻璃体视网膜病变的应用

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目的：探讨分期晶状体切割术和玻璃体切割术在晚期小儿玻璃体视网膜病变治疗中的安全性和有效性。

方法：回顾性研究 8 例 10 眼晚期小儿玻璃体视网膜病变（包括 6 例 8 眼 5 期早产儿视网膜病变，2 例 2 眼 5 期家族性渗出性玻璃体视网膜病变）的治疗效果。患儿 月龄 4-26 月（平均 14+/-5.8 月），男性 5 例，女性 3 例。所有患者术前前房消失或晶状体混浊，且伴有角膜混浊，眼底观察不清，无法行一晶状体切割联合玻璃体切割手术，B 超提示有视网膜脱离。患眼均接受分期晶状体切割和玻璃体切割手术。所有患儿在玻璃体切割术后随访至少 6 个月以上。

结果：晶状体切割术后 3-9 个月后所有患眼中央角膜水肿消失或缓解，再次行二期玻璃体切割手术。在随访中，术后 5 眼角膜保持透明，另 5 眼由于角膜内皮失代偿而出现中央角膜混浊。4 眼视网膜部分或大部分展开，余 6 眼视网膜未展开。

结论：晚期小儿玻璃体视网膜病变并发前房消失，角膜混浊时治疗非常棘手。分期手术可以在一定程度上避免一些严重的并发症，如角膜皮内失代偿，角膜白斑和继发性青光眼等，并留存一定视力。治疗越早预后越好。

Staged lensectomy and posterior vitrectomy in advanced pediatric vitreoretinal diseases

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PURPOSE: To verify the safety and feasibility of the staged lensectomy and vitrectomy in advanced pediatric vitreoretinal diseases, including stage 5 retinopathy of prematurity (ROP) and stage 5 Familial exudative vitreoretinopathy (FEVR).

PATIENTS AND METHODS: This study is a retrospective, interventional, consecutive case series. Ten eyes of 8 patients, including

8 eyes of 6 patients of stage 5 ROP and 2 eyes of 2 patients of stage 5 FEVR were included in this analysis. The mean age was 14+/-5.8 months (range 4-26 months), including 5 males and 3 females. All the patients had flat anterior chamber and opaque central cornea with invisible fundus. Ultrasound B scan confirmed the diagnosis of retinal detachment. Regular combined lensectomy and vitrctomy were difficult to perform due to the invisible fundus. Staged lensectomy and posterior vitrectomy were performed in these ten eyes. All these eyes were followed for at least 6 months after vitrectomy.

RESULTS: Corneal opacity disappeared or reduced in all these ten eyes 3 to 9 months later after lensectomy. When the fundus was visible, further posterior vitrectomy were performed. Five of ten eyes had transparent cornea during the follow up, while the remaining five eyes had central corneal opacity due to the cornea vulnerability in the patients and corneal endothelium decompensation. Retina was partially or subtotally attached in four eyes and remained detached in the other six eyes.

CONCLUSIONS: Advanced pediatric retinal diseases, such as stage 5 ROP and stage 5 FEVR patients with flat anterior chamber and central corneal opacity are very difficult to manage. Staged lensectomy and posterior vitrectomy is the procedures which can prevent further complications, such as corneal endothelium decompensation, leucoma and secondary glaucoma, and preserve some useful eyesight. The earlier the lensectomy is performed, the better the prognosis is.

FP-15

植入式眼外肌电刺激在先天性眼球震颤中的应用研究

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目的：探析眼球震颤患者在不同电刺激条件下眼球震颤波形的变化，探索先天性眼球震颤治疗的新方法。

方法：选择2015年3月~2015年11月在我院治疗的7例先天性眼球震颤患者为研究对象，于右眼外直肌及内直肌植入电极，比较刺激前及三种不同电刺激后的患者眼球震颤的频率、幅度及黄斑中心凹注视时间的变化。

结果：(1) 患者三种电刺激条件下，眼球震颤频率均小于刺激前频率。重复测量方差分析，F=0.868，P<0.05，四种条件下的眼球震颤频率差异有显著性，有统计学意义。(2) 患者三种电刺激条件下，眼球震颤幅度均小于刺激前震颤幅度。重复测量方差分析，F=4.669，P>0.05，四种条件下的眼球震颤幅度差异无显著性，无统计学意义。(3) 患者三种电刺激条件下，每秒的黄斑中心凹注视时间均大于刺激前的注视时间。重复测量方差分析，F=5.759，P<0.05，四种条件下的每秒的黄斑中心凹注视时间差异有显著性，有统计学意义。(4) 给予患者变压刺激，有一个患者在 0.6V 30Hz 时出现出现眼球震颤停止的情况。(5) 同一患者不同时间眼震波形可能不同。

结论：植入式眼外肌电刺激有望成为新的治疗 CN 的方法。

Analysis of Implantable Extraocular Muscle Electrical Stimulation in Treating Congenital Nystagmus

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OBJECTIVE: To investigate the influence of different kinds of electrical stimulation on nys-tagmus waveforms, in order to provide a new treatment for congenital nystagmus patients.

METHODS: Between March 2015 - october 2015 in our hospital 7 cases of congenit-al nystagmus for the study were enrolled. The electrodes were implanted in later-al and medial rectus of right eyes. There were 3 kinds of electrical stimulation, 0.5V 30Hz,1V 10Hz,1V 30Hz. Eye movement parameters were recorded by video eye tracker EYELINK2000. Analyzed nystagnus frequency, amplitude and foveation time.

RESULTS: (1) The nystagmus frequency before stimulation was lowest among the 4 conditions. The nystagmus frequency before stimulation was 4.27 ± 1.81Hz; 2.90 ± 0.88Hz after stimulation of 1V 10Hz; 2.67 ± 1.10Hz after stimulation of 1V 30Hz; 2.75 ± 0.53Hz after stimulation of 0.5V 30Hz. Sphericity test, p>0.05, repeated measurement analysis of variance, F=0.868，P<0.05，was statistically significant.(2)The nystagnus amplitude before stimulation was lowest among the 4 conditions. The nystagnus amplitude before stimulation was 3.02 ± 2.44° ; 1.49 ± 1.32° after stimulation of 1V 10Hz; 1.65 ± 1.32° after stimulation of 1V 30Hz; 1.46 ± 1.31° after stimulation of 0.5V 30Hz. Sphericity test, p<0.05, after correction by Green-house-Geisser coefficient, repeated measurement analysis of variance, F=4.669，P>0.05，was not statistically significant. (3)The foveation time before stimulation was longest among the 4 conditions. The nystagnus frequency before stimulation was 0.12 ± 0.13ms; 0.29 ± 0.24ms after stimulation of 1V 10Hz; 0.21 ± 0.13ms after stimulation of 1V 30Hz; 0.37 ± 0.24ms, after stimulation of 0.5V 30Hz. Sphericity test, p<0.05, after correction by Greenhouse-Geisser coefficient, repeated measurement analysis of variance, F=0.868，P<0.05，was statistically significant. (4)The nystagmus stopped when extraocular muscles were given stimulation of 0.6V 30Hz. (5) Both pendular and jerk wave forms maybe observed in the same individual at different times.

CONCLUSIONS: (1)Implantable extraocular muscle electrical stimulation can significantly improve nystagmus frequency and foveation time. But there was no significant improvement in amplitude. (2) Implantable extraocular muscle electrical stimulation is expected to become a new method for the treatment of congenital nystagmus.

FP-16

婴幼儿眼外肌纤维瘤病：8 例临床病例回顾性分析

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目的：回顾性分析 8 例婴幼儿眼外肌纤维瘤病的临床及病理特征。

方法：总结分析天津市眼科医院自 2004 年 11 月至 2011 年 4 月收集的 8 例婴幼儿眼外肌纤维瘤病患儿的所有临床诊治资料。

结果：8 位患者包括 2 位男婴，6 位女婴。7 位患儿发病年龄小于 1 岁，1 位患儿发病年龄为 17 个月。所有患儿均患有限制性斜视。1 位患儿患有眼球突出，1 位患儿患有眼睑退缩。CT 扫描显示所有病例均有界限不清的软组织占位侵及一条或多条眼外肌及周围组织。所有患儿均接受手术治疗，术中发现占位均灰白而坚硬与周围组织粘连不可分离，受累眼外肌显著挛缩。组织学上，肿瘤主要由胶原纤维组成，散在分布着成纤维细胞及肌成纤维细胞。免疫组织化学染色显示梭形平滑肌肌动蛋白及波形蛋白阳性。

结论：婴幼儿眼外肌纤维瘤病较罕见，多无痛性增大，可侵及眼外肌，引起限制性斜视、眼球突出等病变。本病为良性病变，但由于难以完整切除多易复发。

A retrospective review of 8 cases of infant fibromatosis in Orbit

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PURPOSE: To report the clinical and pathologic features of infant fibromatosis in orbit of 7 cases.

METHOD: Reviewed the clinical and pathologic features of 7 cases with infant fibromatosis.

RESULTS: 2 cases are male and 5 are female. The age of onset of all patients was not older than 1 year old. All patients had restricted strabismus. One case also had exophthalmos, while another one also with retraction of eyelid. CT scan all showed occupying soft mass with unclear margin, some EOMs and orbit wall involved. Grossly, tumors were white–grey, firm. Involved EOMs were contracted seriously. The tumors were mainly composed of collagen fibers, mixed fibroblasts and myofibroblast. Tumors showed sporadic smooth muscle actin and vimentin immunoreactivity.**CONCLUSION**:Infantile fibromatosis in orbit is rare, presenting as a painless and enlarging mass. It can involve EOMs and orbital bones,causing in fixed strabismus, exophthalmos, et al. It isbenign disease but is hard to resected completely.

FP-17

UBM 在先天性白内障术前评估中的应用

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目的：研究不同类型的先天性白内障的超声生物显微镜影像学特征 , 探讨 UBM 用于先天性白内障术前评估中的应用价值。

方法：对我院诊断为先天性白内障的患者 50 名术前行 UBM 检查 , 结合临床资料对 UBM 检查结果进行影像学特征分析。

结果：不同先天性白内障的 UBM 图像有其特有的影像特点，前囊膜混浊表现为前囊膜增粗的不连续的强回声光带；皮质液化表现为膨胀的晶体声影，伴有机化或钙化时混杂有中等回声或强回声光团，硬核表现为较均匀的强回声；后囊膜均匀混浊，可见混浊皮质或核回声相似的中等密度至高密度回声，而致无法区分后囊膜与皮质。后囊膜缺如：前后囊膜相贴的后囊缺如，后囊膜回声带连续性中断，可见后囊缺如部分混浊皮质位于突出于晶体后囊膜后。膜性白内障表现为晶体前后囊膜相贴的不光滑的水平中等回声光带。

结论：超声生物显微镜可作为先天性白内障术前评估的重要检查工具 , 通过观测皮质的性质、后囊膜有无缺损等，由于混浊晶体的阻挡，UBM 为用于晶体后囊膜评估的辅助检查工具，有助于术前对先天性白内障手术难度的把握，对于有虹膜粘连导致瞳孔无法散大的白内障患者的类型的评估，UBM 检查更有价值 / 更有意义。

The preoperative evaluate for congenital cataract by UBM

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PURPOSE: To study lens opacity in pediatric cataract images captured using ultrasound biomicroscopy (UBM).

METHODS: Study design: retrospective study

Study period: between September 2012 and October 2013

Prior to surgery, patients were placed in the supine position under sedation with oral chloral hydrate for UBM imaging. Lens morphology was evaluated by UBM examination with a 50 MHz probe that was equipped with a water bag instead of the standard plastic shell. UBM images were compared to images captured from intraoperative videos.

RESULTS: UBM examination was performed in 50 patients (including 10 infants) aged 2 months to 6 years. The UBM ecographic images showed features specific to pediatric cataract lenses. These features were used to define 2 types of anterior capsule of the lens, 4 types of cortex and nucleus of the lens, 3 types of posterior capsule of the lens, and membranous cataracts.

CONCLUSIONS: Capsule morphology and the cortex density of pediatric cataracts could be evaluated before surgery using UBM imaging. Adoption of this technique could provide useful preoperative information to surgeons.

FP-18

儿童非器质性视力损伤

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目的：探讨儿童非器质性视力损伤的临床特点。

方法：回顾性分析 2009 年至 2016 年在眼科门诊就诊和病房住院的诊断为非器质性视力损伤的儿童患者 19 例。

结果：2009 年至 2016 年诊断为非器质性视力损伤的儿童患者共 19 人，年龄为 5 ~ 13 岁；其中住院患者 3 人，门诊患者 16 人；男性 6 人，女性 13 人；单眼 1 人，双眼 18 人；主诉为单眼或双眼视力明显下降，病史在 2 天 ~ 1 年；最初诊断为球后视神经炎 4 人，青光眼 1 人，弱视 14 人；初诊时视力（矫正视力）≦ 0.1 的 3 人（5 眼），0.1 ~ 0.4 的 12 人 (24 眼)；0.5 ~ 0.6 的 4 人（8 眼）。屈光状态：+2.50D ~ -2.00D。诊疗经过：所有患者眼科裂隙灯及眼底镜检查均无异常发现，6 名患者 P-VEP、脑 CT 检查均无异常。患儿经详细观察、安慰及语言诱导，以及采用不同方法检测视力后，视力均可达到 1.0。

结论：儿童非器质性视力损伤在眼科临床并不少见，主诉多为双眼视力明显下降，可发生在学龄前及小学阶段的儿童，女性多于男性，多有一定诱因。临床工作中我们要掌握其特征，采取合理有效方法进行诊断和鉴别诊断，避免误诊误治，及时消除家长的焦虑，寻找并疏解患儿心理方面的困惑。

Non-organic visual loss in children

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OBJECTIVE: To report clinical characteristics of children with non-organic visual loss.

METHODS: We performed a retrospective study in 19 cases during a period of 7 years.

RESULTS: Non-organic ocular disorders were seen among 13 young girls and 6 boys between 5 and 13 years. The primary diagnoses were glaucoma, retrobulbar neuritis, and amblyopia in other hospitals. The pattern of non-organic visual loss was a normal visual field in the presence of reduced visual acuity, mostly with bilateral, symmetrical and rapid visual loss. The ocular examination was normal. Brain imaging and electrophysiology testing (if done) were normal in all cases. All cases were examined by one or more specific methods: provocation of reflectory responses, deception, measurement the visual acuity with different methods. The results were reproducible. The diagnosis of non-organic visual loss was proven after excluding of differential diagnoses such as optical disturbances, amblyopia, optic nerve disease and cortical lesions. Normalization of visual function occurred in all of patients. The acuity was 1.0 in 100% of cases after the consultation.

CONCLUSION: Non-organic visual loss is not uncommon in children, is typically bilateral, and involves mostly visual acuity. Patients were predominantly female. An early diagnosis of non-organic visual loss is important. A suspicion and the management of this situation are essential for a proper diagnosis, not only to avoid unnecessary examinations, but also to avoid wasting time, in addition to reducing parental distress.

FP-19

直肌止端移位辅助治疗眼性斜颈的临床观察

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目的：探讨采用直肌止端移位辅助治疗儿童不同类型眼性斜颈手术疗效。

方法：2--6 岁儿童，水平斜视 15-40° ，垂直斜视 5-15° ，旋转斜视 10-25° ，眼性斜颈 10--30° 患者共 136 例。其中伴有水平斜视 70 例，做过肌性斜颈者 4 例，做过其它术式残留斜颈者 24 例。112 例上斜肌麻痹者，其中 20 例继发患眼下斜肌功能过强不明显者，患眼上直肌后徙 3-5 ㎜，同时将上直肌止端颞侧移位 5-10 ㎜。其余 92 例上斜肌麻痹患者均继发患眼下斜肌功能过强（合并健眼下直肌功能过强者 12 例），采取患眼下斜肌减弱术，联合患眼上直肌后徙 4-6 ㎜，同时将上直肌止端颞侧移位 5-10 ㎜。伴有水平斜视者同时做水平肌矫正。24 例已做过其它斜视手术残留旋转斜视的眼性斜颈患者 9 例做内直肌上移，10 例做外直肌上移，5 例做内直肌下移位术。

结果：全部病例经 1 或 8 年的观察，一次手术治愈 122 例（89.7%）改善 14 例（10.3%）.14 例改善病例中有 8 例经过二次手术治愈，另外 4 例未再次手术，还有 2 例术后眼位良好，残留代偿头位 5-10° ，半年后再次手术斜颈消失。

结论：采用直肌止端移位术是辅助治疗儿童不同类型眼性斜颈的一种科学有效的方法。

Clinical observation on transposition apodeum of rectus treatment on ocular torticollis

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OBJECTIVE: to explore the curative effect of different types of torticollis in children by rectus muscle displacement auxiliary treatment.

METHODS: 2 to 6 years old children, horizontal Strabismus 15 to 40, vertical Strabismus 5 to 15, rotate Strabismus 10 to 25, yanxing torticollis patient total 136 cases. Among them, 70 cases of horizontal strabismus, 4 cases of muscular torticollis, and 24 cases of residual relieved. Of the 112 cases of superior oblique muscle, 20 of them secondary to the inferior oblique muscle of the inferior oblique muscle, the lateral rectus muscle of the rectus muscle 3, and shift the superior rectus shift. The other 92 cases of superior oblique muscle paralysis secondary to the inferior oblique muscle function (12 cases of the strong), took the immediate xiejijian, combined with affected eye 4, and displaced 5 no-go side. Simultaneous horizontal rectus muscle correction. Of the 24 cases who had undergone other strabismus surgery, 9 cases of ocular torticollis were removed, 10 cases were moved to waizhi muscles, 5 cases were performed medial rectus muscle transposition.

RESULTS: after 1 or 8 years, 122 cases (% %) improved in 14 cases (10.3 %), 8 cases were cured by secondary operation, 4 cases were not operated again, and 2 cases were good, the residual head position was 5 to 10, and the operation torticollis disappeared half a year later.

CONCLUSION: using transposition is a scientific and effective method for the treatment of different types of torticollis in children.

FP-20

致密性儿童白内障的术后视力观察

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目的：研究致密性儿童白内障术后视力恢复情况，分析影响视力恢复的相关因素。

方法：收集 2007 年 1 月至 2012 年 12 月在山东省立医院眼科中心接受单眼或双眼致密性儿童白内障手术治疗的患儿资料，对影响视力恢复的相关危险因素进行分析。

结果：105 例（181 眼）患儿完成了随访，双眼白内障 76 例，单眼白内障 29 例；平均随访时间 46.77 个月。在有最佳矫正视力（BCVA）记录的 158 眼中 , 4.43% 的患儿视力 ≥0.1 logMAR；15.19% 的患儿 BCVA 为 0.1~0.3 logMAR；18.99% 的患儿 BCVA 为 0.3~0.5 logMAR；46.84% 的患儿 BCVA 为 0.5~1 logMAR; 14.55% 的患儿 BCVA≤1 logMAR。3 月龄前接受手术的患儿平均 BCVA 优于 3 月龄至 12 月龄期间接受手术的患儿 (p=0.001)。相关危险因素分析显示，白内障摘除术晚于 3 月龄、术后发生并发症、术后发生斜视及眼球震颤是患儿视力恢复不良的主要危险因素。

结论：在 3 月龄前手术、植入人工晶体、及时处理术后并发症、术后早期进行光学矫正和健眼遮盖治疗弱视均可提高致密性儿童白内障患儿的术后视力。

Visual outcomes of dense pediatric cataract surgery in eastern China

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PURPOSE: To evaluate the visual outcomes of dense pediatric cataract surgery in eastern China.

METHODS: Medical records of children who underwent surgery for dense unilateral or bilateral pediatric cataract in Shandong Provincial Hospital between January 2007 and December 2012 were collected. Patients who cooperated with optical correction and aggressive patching of the sound eye and who had a minimum postoperative follow-up of more than 2 years were included. Risk factors for poor visual outcomes were analyzed.

RESULTS: Of the 105 eligible patients (181 eyes), 76 had bilateral cataract, and 29 unilateral. With a mean follow up of 46.77 mo (range 24.0~96.0 mo), the final best corrected visual acuity (BCVA) of 158 eyes were recorded, and 4.43% (7/158) achieved 0.1 logarithm of the minimum angle of resolution (logMAR) or better; 15.19% (24/158) obtained a BCVA between 0.1 logMAR and 0.3 logMAR; 18.99%, (30/158) between 0.3 logMAR and 0.5 logMAR; 46.84% (74/158), between 0.5 logMAR and 1 logMAR; 14.55%, worse than 1 logMAR. The mean BCVA of the patients who underwent lensectomy before 3 months of age was significantly better than that of patients who underwent lensectomy between 3 and 12 months (p=0.001). In the same lensectomy age groups, the final BCVA of the children in the bilateral and unilateral groups did not differ significantly ($P > 0.05$). Lensectomy after 3 months of age, postoperative complications, strabismus and nystagmus were shown to be risk factors for poor visual outcomes.

CONCLUSIONS: Lensectomy before 3 months of age, IOL implantation, proper managing of postoperative complications, early optical correction and aggressive postoperative patching of the sound eye would increase the final BCVA for patients with dense pediatric cataract.

FP-21

儿童色素失禁症相关视网膜病变的临床观察

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目的：总结分析一组儿童色素失禁症（IP）患者的眼部表现和探讨色素失禁症相关视网膜病变（IPR）分级。

方法：对于我科就诊的 18 岁以下的色素失禁患者的临床资料进行了回顾性分析，包括人口统计学特征，病史，眼科检查及治疗。将 IPR 分为五期。

结果：共 61 例连续就诊的 IP 患者纳入本研究，其中位数年龄为 3.1 个月，随访时间的中位为 13.4 个月。其中共 47 例患者存在眼部病变，其中 28 例双眼受累，19 例单眼受累。在 61 例 122 只眼中，73 眼存在玻璃体视网膜病变，包括仅有视网膜色素上皮细胞变化 8 眼（1 级），视网膜血管异常 22 眼（2 级），视网膜膜或纤维化增生合并无血管区 5 眼（3 级），视网膜新生血管 6 眼（3 级），玻璃体出血 1 眼（3 级），部分视网膜脱离（RD）10 眼（4A 期），全视网膜脱离 15 眼（4B 期），眼球萎缩、继发性青光眼 8 眼（5 期）。

结论：77%的儿童IP患者存在各种玻璃体视网膜病变。色素失禁症相关视网膜病变的主要特征性改变是以视网膜血管病变，双眼病变往往是不对称。

Incontinentia Pigmenti Associated Ocular Anomalies of Pediatric Incontinentia Pigmenti Patients in China

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AIMS: To characterize ocular manifestations in a cohort of pediatric patients with incontinentia pigmenti (IP) and to define the guidelines for grading of IP-associated retinopathy (IPR).

METHODS: This retrospective review was performed on patients under the age of 18 years with a diagnosis of IP. Data included demographics, medical history, ocular examination, medical interventions performed. IPR were classified into five stages.

RESULTS: Sixty-one children with median age of 3.1 months were observed consecutively. The median follow-up duration was 13.4 months. A total of 47 patients had various ocular anomalies. Among them, 28 patients had bilateral ocular anomalies and 19 had unilateral anomalies. Vitreoretinal changes were noted in 73 of 122 eyes, including 8 eyes with retinal pigment epithelium changes only (stage 1), 22 eyes with retinal vascular abnormalities (stage 2), 5 eyes with epi–retinal membranes or fibrotic hyperplasia combined with avascularized zones (stage 3), 6 eyes with retinal neovascularization(stage 3), 1 eye with vitreous hemorrhage(stage 3), 10 eyes with partial retinal de-

tachment (RD) (stage 4a), 15 eyes with total RD (stage 4b) and 8 eyes with phthisis bulbi and secondary glaucoma (stage 5).

CONCLUSION: Various vitreoretinal disease can be found in 77% pediatric patients in this cohort. IPR, characterized by retinal vasculopathy, tend to be asymmetrical.

FP-22

儿童人工晶体植入术后屈光误差的影响因素分析

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目的：分析儿童人工晶体植入术后屈光误差原因。

方法：回顾性研究。收集在我院行人工晶体植入术的白内障患儿 106 例（171 眼）。依手术年龄分三组：A 组 2 ~ 3 岁（83 眼）；B 组 4 ~ 6 岁（48 眼）；C 组 7 ~ 9 岁（40 眼）。术前行眼轴长度、角膜曲率检查，按 SRK/T 人工晶体计算公式及预期屈光状态选择晶体度数。73 眼行Ⅰ期白内障摘除联合人工晶体植入术（囊袋内）；98 眼行Ⅱ期人工晶体植入术，其中人工晶体植入睫状沟 72 眼，人工晶体巩膜瓣下缝合固定 26 眼。术后随访 3 月检查视力、眼压、人工晶体位置、屈光状态和前房深度。分析预期屈光误差与手术年龄、眼部生物学参数、手术方式及人工晶体位置等因素的关系。

结果：1. 手术年龄越小，预期屈光误差越大。2. 手术年龄较小的白内障儿童眼轴较短、角膜曲率较高。3.Spearman 相关回归分析结果示预期屈光误差与术后前房深度呈负相关。4. 手术方式不同导致预期屈光误差的差异。囊袋组较睫状沟组及缝线晶体组的预期屈光误差小，睫状沟组和缝线晶体组间的无差异。

结论：手术年龄较小的儿童术后预期屈光误差较大。手术年龄和方式均会影响术后预期屈光状态，术后前房深度是影响预期屈光误差的的主要原因。

Influencing factors of prediction refractive error after pediatric cataract surgery

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OBJECTIVE: to analyze the reasons of value of prediction error after intraocular lens(IOL) implantation in pediatric cataract.

METHODS: Retrospective review of 171 eyes from 106 consecutive pediatric patients undergoing intraocular lens implantation in our hospital received.

RESULTS: 1.The younger the pediatric cataract was,the larger the prediction error was.

CONCLUSION: The younger the pediatric cataract had larger prediction error.

FP-23

水平斜视手术中保留睫状前血管对血房水屏障功能的影响

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目的：了解常规水平斜视手术对血房水屏障的影响，探讨常规斜视手术中睫状前血管保留的重要意义。

方法：征集 100 名水平斜视患者，随机分为 2 组（保留睫状前血管组和不保留睫状前血管组），手术眼再根据手术直肌的数量进一步分为 A 组（单条直肌手术联合保留血管）、B 组（两条直肌手术联合血管保留）、C 组（单条直肌手术无保留血管）、D 组（两条直肌手术无血管保留）。采用 FM-600 型激光蛋白检测仪检测患者手术前和术后第一天前房闪辉值。采用 SPSS 17.0 统计软件中的配对 t 检验比较手术前后各组前房闪辉值的差异。

结果：血管保留成功率在 A 组和 B 组中分别为 81.8%（27/33）和 70.0%（28/40）。A 组和 B 组房水闪辉值术后与术前无统计学差异；C 组和 D 组房水闪辉值术后与术前有统计学差异。

结论：涉及单条或两条直肌的常规斜视手术会对血房水屏障造成不良影响，睫状前血管的保留对减少手术的不良影响有重要临床意义。

The effect of preservation of anterior ciliary vessels on blood-aqueous barrier functions during the horizontal strabismus

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OBJECTIVE: By determining the effect on the blood-aqueous barrier, our aim was to investigate the meaning of the anterior ciliary

vessels (ACVs) preservation during the conventionally horizontal strabismus surgeries.

METHODS: Patients with horizontal strabismus were randomly allocated into two groups as follows: Group 1 with the preservation of ACVs during the strabismus surgery, Group 2 without ACVs preservation. The eyes were further divided into Group A (one rectus operated with ACVs preserved), Group B (two recti operated with ACVs preserved), Group C (one rectus operated without ACVs preserved) and Group D (two recti operated without ACVs preserved). Before and 1st day after the strabismus surgery, the anterior chamber flare measurement of each eye by KOWA FM-600 was recorded. Analyses were performed using SPSS version17.0, and the flare values between pre- and post-operation in each group was compared by a paired t-test.

RESULTS: The success rate of ACVs preservation in Group A and Group B was 81.8% (27/33) and 70.0% (28/40) respectively. The pre- and post-operation value of the flare measurement in each Group was 4.378 ± 1.527/4.544 ± 1.452, 4.625 ± 1.090/4.989 ± 1.468, 4.661 ± 1.031/5.039 ± 1.310, 4.933 ± 1.691/5.502 ± 1.430, respectively. The flare value between pre- and post-operation had no significant difference (t=-0.643, P=0.526, t=-1.696, P=0.101 respectively) in Group A and B and had significant difference in Group C and Group D (t=-2.323，P=0.025 ,t=-3.808，P=0.000 respectively).

CONCLUSION: Routine strabismus surgeries on one or two rectus muscles have undesirable influence on the blood-aqueous barrier, while the ACV preservation has the clinical value to reduce the bad effect on eyes.

FP-24

一例特殊的连续性斜视——对中轻度 Helveston 综合征诊断与治疗的思考

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目的：报导一例 Helveston 综合征合并连续性斜视患者的临床特点以及诊疗过程。

方法：患者为一 20 岁女性，6 年前因“间歇性外斜视”于外院行手术治疗，术中右眼外直肌后徙 7mm。术后不久患者出现左眼内斜合并上斜症状。收集该患者的临床资料并查体，重新设计手术方案。

结果：在原在位，患者左眼呈 +15 △内斜合并 10 △的上斜视，然向下方 25° 注视时呈正位。双眼交替注视时可呈 20 △左右的上斜视。眼球运动查体与眼底照相结果提示其双眼上斜肌轻度亢进。因此，该患者系连续性斜视合并 Helveston 综合征。Helveston 综合征即分离性垂直性斜视 (DVD) 合并 A 型斜视。手术设计方案为双眼上斜肌断腱加双眼上直肌后徙 7mm 并向外移位二分之一肌腹宽度。术后 2 月，患者在原在位呈正位，A 征消失，DVD 症状亦大幅改善。

结论：中轻度 Helveston 综合征的诊断与手术设计是目前面临的一项挑战，在诊断不明情况下贸然手术会为后续的治疗带来困难。对该类患者进行手术时，应常规矫正水平斜视，并考虑上直肌和上斜肌的减弱术。

A special case with ‘consecutive esodeviation’ indicates the challenge of moderate DVD with A pattern deviation in diagnosis and surgical outcome

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PURPOSE: To report the clinical characteristics, diagnosis and reoperation procedure for a special case who complained about consecutive esodeviation.

METHODS: A 20-year-old female was diagnosed with intermittent exotropia at 14 when she first visited another hospital. She received lateral rectus recession on right eye. Shortly after that, she reported to develop an esotropia and hypertropia on left eye. General ophthalmic examinations and complete motor and sensory examinations were performed on the patient when she visited our clinic. Reoperation was designed and performed accordingly.

RESULTS: The patient presented a left eye esotropia (15 PD) and hypertropia (10 PD) in primary gaze, and ortho in downgaze at near. Moderate overaction of bilateral superior oblique (SO) was found and confirmed by fundus image. Alternative hypertropia of ~20 PD at lateral gaze of each eye was noticed. Thus, the patient was diagnosed as dissociated vertical deviation (DVD), consecutive esodeviation with A-pattern. Bilateral 7 mm recession of superior rectus with horizontal offset of 1/2 tendon width toward lateral side, as well as tenectomy of bilateral superior oblique were performed. Follow-up period after surgery was two months. The patient presented orthophoria at primary gaze at last visit. A-pattern was vanished and DVD was obviously improved.

CONCLUSIONS: Patients with moderate DVD and A pattern deviation would challenge the clinical diagnosis, surgical design and surgery outcome. As a consequence, a simple surgery may lead the doctor and the patient to a difficult situation. Weakening of superior rectus and SO should be routinely considered or at least discussed with such patients.

FP-25

外直肌倾斜后徙联合下斜肌后徙术治疗间歇性外斜视集合不足型合并下斜肌亢进的早期疗效观察

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目的：观察外直肌倾斜后徙联合下斜肌后徙术治疗儿童间歇性外斜视集合不足型合并下斜肌亢进的早期疗效。

方法：前瞻性设计，连续观察患儿 20 人。手术前后测量远近斜视度，黄斑 - 视盘夹角，检查眼球运动状态和立体视等，随访 6 个月。术前术后远近斜视度及差值比较用 Wilcoxon 配对符号秩和检验，以 $P < 0.05$ 为差异有统计学意义。手术前后远近斜视度差值的变化除以倾斜后徙量计算每倾斜 1mm 减少的远近斜视度差值。

结果：共观察患儿 20 人，男性 11 人，女性 9 人，平均年龄 9.5 岁 (4~13 岁)。手术前后斜视度 ($M(Q_R)$)：视远斜视度术前 25(13)PD(15~50PD)，术后 1.5(4)PD(0~5PD)；视近斜视度术前 37(16)PD(25~63PD)，术后 4(4)PD(0~8PD)；远近斜视度差值术前 12(3)PD(10~20 PD)，术后 2(3)PD(0~5PD)。术前术后差异有统计学意义。每倾斜 1mm 减少的远近斜视度差值平均 3.8PD。术前 13 人有 V 征，术后均消失，未发现新发生的 A-V 型斜视。术后无患者出现连续性内斜视，眼球运动障碍，垂直旋转性斜视或复视。

结论：一期联合两种术式治疗，手术安全、有效。

Early results of slanted lateral rectus recession combined with inferior oblique recession for intermittent exotropia with convergence insufficiency and inferior oblique overaction

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OBJECTIVE: To observe the early results of slanted lateral rectus recession combined with inferior oblique recession in the treatment of children with intermittent exotropia with convergence insufficiency and inferior oblique overaction.

METHODS: This prospective study continuously observed 20 children diagnosed as intermittent exotropia with convergence insufficiency and inferior oblique overaction who underwent slanted lateral rectus recession combined with inferior oblique recession in our hospital from December 2015 to July 2016. Before and after the operations, alternating prism cover tests were used to measure the distance (6m) and near (33cm) deviations in all the nine diagnostic positions of gaze while the patients were wearing their best optical correction, the fovea-disc angle (FDA) was measured by fundus photography to evaluate the objective ocular torsion, and extraocular muscle motility and stereopsis at near were examined. The follow-up period was 6 months, and missing data was replaced by The Last Observation Carried Forward (LOCF) method. Pre- and post-operative angles of deviation at near and distance and the difference between them were compared by Wilcoxon paired signed-rank tests and FDA differences by paired *t*-tests. Differences were considered significant if $P < 0.05$. Pre- and post-operative change of angles of the difference between near and distance exodeviation divided by the amount of slant is how many angles were improved by 1mm of slanted recession.

RESULTS: 20 children were observed, including 11 males and 9 females with a mean age of 9.5 ± 2.8 years (range, 4~13 years). Pre- and post-operative exodeviations ($M(Q_R)$, *range*): The preoperative mean deviation angle was 25 (13) PD (15~50 PD) at distance and 37 (16) PD (25~63 PD) at near, and after 6 months, the mean exodeviation angles were reduced to 1.5 (4) PD (0~5 PD) at distance and 4 (4) PD (0~8 PD) at near, and the differences between distance and near reduced from 12 (3) PD (10~20 PD) to 2 (3) PD (0~5 PD) postoperatively. 1mm of slanted recession of lateral rectus was associated with an improvement of 3.8 PD in the difference between the near and distance angles of exodeviation. The FDA of inferior oblique overaction eyes ($\bar{x} \pm s$, range): The right eye FDA was -6.35° ± 3.04° (-10.79° ~0°) preoperatively, -2.28° ± 3.71° (-8.00° ~+2.93°) postoperatively, and corrected by 4.06° ± 2.67° (-1.00° ~9.22°). The left eye FDA was -7.71° ± 3.52° (-14.42° ~-1.77°) preoperatively, -1.02° ± 3.84° (-10.72° ~+4.21°) postoperatively, and corrected by 6.69° ± 2.80° (2.53° ~11.53°). There were statistically significant differences between pre- and post-operation. Post-operative eye movements were all normal, and observed preoperative V sign in 13 patients are disappeared after surgery, and none of the patients demonstrated new occurrence of A-V pattern strabismus. The stereopsis at near in 55% of all patients were normal preoperatively, and 75% were normal postoperatively. 35% of them show increased stereopsis postoperatively. None of the study patients had postoperative consecutive esotropia, extraocular muscle motility dysfunction, vertical-torsional strabismus, or diplopia as a result of surgery.

CONCLUSION: The application of slanted lateral rectus recession combined with inferior oblique recession in the treatment of children with intermittent exotropia with convergence insufficiency and inferior oblique overaction is safe and effective.

FP-26

斜视矫正术后的自我评价

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目的：研究成人斜视患者矫正手术后对治疗效果的自我评价，并探讨影响其评价的主要因素。

方法：收集获得成功斜视矫正手术效果且随诊 1 年以上的成年患者，末次随访时通过问卷调查评估患者自我感觉是否仍有斜视，及评估其生存质量水平。患者术前术后的斜视度、一般资料和双眼视功能情况等同时收集。

结果：91 例纳入研究的成功斜视手术矫正患者，22 例（24%）仍自我评价存在一定的斜视，这些患者相比自我评价没有斜视的患者，伴有更大度数和更高比例的垂直斜视，其生存质量量表得分更低。多因素方差分析显示存在微小程度的垂直斜视是影响患者术后自我评估的主要因素。

结论：获得成功斜视矫正手术效果的成年患者中仍可能自我评价存在斜视，这些患者伴有更差的术后生存质量，术后伴有垂直斜视是影响其自我评价是否有斜视的主要因素。

Self perspective of surgical outcome in adults strabismus

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OBJECTS: To evaluate the self perspective of surgical outcome in adults with successful corrective surgery, the factors associated with the judgment were studied also.

METHODS: Self perspective of surgical outcome were evaluated by reviewed through questionnaire about perspective of strabismus and health related quality of life (HRQOL) in adult patients with defined as successful outcome with more than 1 year post-operative visit follow-up. Pre- and post-operative deviation, as well as the characters, including general characters and binocular vision, were collected also.

RESULTS: In the 91 adults with successful surgical outcome, 22 (24%) cases still had self perspective of strabismus. Subjects with perspective of strabismus had larger size and more prevalence of post-operative vertical deviation, poorer stereo function and lower HRQOL scores than those with perspective of no strabismus. Present of post-operative vertical deviation was the factor that associated with the self-perspective of strabismus.

CONCLUSION: Self perspective of strabismus was present in some adults with successful surgical outcome. Those patients with self-perspective of strabismus were associated with worse HRQOL status. Present with small vertical deviation was the main factor related with the self perspective of strabismus.

FP-27

鼻窥镜手术引起斜视的诊疗

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目的：鼻内窥镜手术（FESS）误入眶内引起的不同程度的斜视 23 例，分析 FESS 眶内并发症的临床特点，治疗方法及预后的关系 , 探寻最佳治疗方案。

方法：经过眼位，眼球运动，牵拉试验等临床检查及影像学检查明确诊断，按病情轻重分为 3 组，A 组部分内直肌离断，B 组单纯完全内直肌离断，C 组内直肌离断合并其他眶内损伤。适时对上述 3 组实施肉毒毒素外直肌注射治疗，垂直肌转位等斜视手术，眶壁整复术等治疗。

结果：A 组仅需肉毒毒素注射即可达到原在位无复视，仅存轻度的内转不足，B 组经过肉毒毒素合并手术预后较好，部分患者（22.22%）原在位无复视，仅企图内转时出现复视 ,C 组仅能部分改善外观。

结论：在 FESS 引起眶内损伤中，被动牵拉试验等临床检查与影像学检查对损伤程度的把握及治疗方案的选择起着同等重要的作用。早期进行外直肌肉毒毒素注射，可缓解外直肌的张力性收缩，为手术赢得时间，还可能缓解粘连和瘢痕形成，注射前后适时的进行上下直肌部分截除转位手术不失为治疗此类斜视的最佳选择。此类医源性斜视的治疗预后与伤情轻重直接相关，单纯内直肌离断多数病例可以达到原在位无复视，内直肌离断合并粘连者多数仅能改善外观，并残留有明显复视。

The treatment for the strabismus induced by functional endoscopic sinus surgery

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OBJECTS: Strabismus with diplopia is the main injury in orbital complication of functional endoscopic sinus surgery (FESS). To find out a more effective treatment, clinic findings, treatment and the outcome of 23 cases of orbital were analyzed.

METHODS: 23 cases were divided into 3 groups based on the severity of each case. Group A, partial transection of medial rectus, Group B full transection of medical rectus, Group C transection of medial rectus combined with other orbital injury. Full range of ophthalmology test, including eye alignment, eye motility, force duction test, force generation text, general eye exam, and medical imaging (orbital CT or MRI) were performed for each case. Accordingly, treatment includes: botulinum toxin (Botox) injection to lateral rectus muscle, transposition of vertical rectus muscle, and orbital surgery if needed.

RESULTS: Group A, with Botox injection, all the cases achieved single vision in primary position, but still remained some adduction weakness. Group B, after vertical transposition surgery combined with Botox, 22% case got single vision in primary gaze. Group C, even with more effort of treatment, cases with orbital injury can only get cosmetic improvement, but still with diplopia and adduction disfunction in most cases.

CONCLUSION: Due to the variety of the complication of FESS, force duction test is a crucial exam to detect the direction and severity of synechia in the orbit, which will give solid information to surgery approach as well as prognosis. Botox injection at early stage will minimize the contraction of antagonist lateral rectus, help to postpone the transposition surgery which may cause antero-segment ischemia when performed right after medial rectus transection injury. Botox may even reduce the synechia by minimizing the scarring process. Partial vertical recuts transposition combined with muscle resection may effectively correct the eye misalignment in primary gaze and improve eye motility. The prognosis of FESS induced orbital complication is quite related with the severity of the injury, Botox combined with surgery may help medial rectus transection cases to achieve single vision in primary gaze, but when combined with other orbital injury, treatment may only improve cosmetic appearance.

FP-28

反向 Knapp 手术的在重度下直肌麻痹中的治疗效果

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目的：探讨反向 Knapp（Inverse-Knapp）手术方式在重度下直肌麻痹中的治疗效果。

方法：回顾性分析 2009.1 至 2017.1 我院收治行反向 Knapp 手术的患者斜视病因、术前和术后的斜视度、眼球运动、双眼视功能情况。

结果：12 例患者，年龄 6 至 53 岁 , 后天获得性 10 例，先天性下直肌发育缺如 2 例。其中 2 例曾行垂直斜视矫正，余均为第一次手术。术前原在位垂直斜视度 25 到 50PD，患眼眼球运动下转受限 -3 到 -5。被动牵拉试验患眼拮抗肌均无明显受限或已经解除限制。手术方式：9 例单纯反向 Knapp、2 例改良 Knapp（根据水平斜视度行水平肌截除）；1 例联合同眼下斜肌转位术。全部患者术后垂直斜视 0 到 10PD。平均原在位垂直斜视矫正量 25 ~ 40PD（平均 32.1 ± 6.6PD），下转功能平均改善程度为 2.3 ± 0.5 级（约 20° ~ 30° ）。合并水平外斜视患者 2 例，内直肌截除 5 ~ 6mm 矫正水平斜视 20 ~ 25PD。10 例后天性患者中 8 例无三棱镜矫正下，2 例予以小度数三棱镜于原在位与下方功能视野获得双眼单视。

结论：反向 knapp 术适于严重下直肌麻痹矫正，利于改善眼球运动和双眼视恢复。

Inverse-Knapp procedure for the treatment of severe inferior rectus palsy

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PURPOSE: To investigate the efficacy of inverse-Knapp procedure in the treatment of severe inferior rectus (IR) palsy.

METHODS: Retrospective study. Twelve patients with severe IR palsy were enrolled. The preoperative and postoperative vertical deviation in the primary position, ocular motility, and binocular vision were analyzed and compared.

RESULT: In 12 patients, 10 had acquired IR palsy and 2 were congenital IR palsy due to IR aplasia. The inverse-Knapp procedures performed in 9 patients, modified inverse-Knapp procedures with horizontal rectus resection in 2 and inverse-Knapp procedures combined ipsilateral inferior oblique (IO) anterior transposition in 1. The preoperative and postoperative vertical deviations in the primary position were 34.6 ± 8.6 prism diopters (PD) and 2.5 ± 3.9 PD ($p<0.05$). The average corrected vertical deviation was 32.1 ± 6.6PD (25 ~ 45PD). The mean ocular motility in downgaze was reduced from -4.0 ± 0.7 on scale (-3 to -5) to -1.7 ± 1.0 (-1 to -3) ($p<0.05$). The mean improved

downgaze was 2.3 ± 0.5 after surgeries. The operative success rate was 83.3%. Only 2 patients had residue hypertropia 10PD.

CONCLUSIONS: Inverse-Knapp procedure was the efficient procedures for treatment of severe IR palsy. The procedure had benefit for improving ocular motility in downgaze and obtaining BSV in functional visual field.

FP-29

共同性斜视术后的 A-V 型斜视的手术特点

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目的：探讨水平斜视手术后 A-V 型斜视伴有斜肌异常或肌肉附着处异常的手术特点。

方法：分析水平斜视手术后因 A-V 型斜视再次手术 37 例，3~30 岁平均 9 岁，A 型斜视 24 例，V 型斜视 13 例。伴斜肌异常 28 例，无斜肌异常 9 例。手术前后记录各方向眼位、远近斜视角、眼球运动、眼底照相等；手术原则原在位过矫或欠矫的水平斜视选择外直肌主要解决看远、内直肌解决看近斜视角，选择减弱下斜肌或上斜肌亢进术，解决开口方向斜视角，联合原水平直肌探查术以及瘢痕组织的处理。

结果：1、斜肌异常组：伴上斜肌亢进 A 型外斜视和内斜视分别 14 例和 5 例，施行上斜肌减弱术，伴下斜肌亢进 V 型斜视，水平直肌联合双下斜肌减弱术 6 例，上斜肌折叠 3 例，其中 2 例下斜肌与外直肌粘连。2、斜肌无异常组：A 型斜视探查原直肌超常后徙量 6 例、肌止端呈斜面粘连 3 例。联合直肌移位术。3、术后疗效：正位 32 例 (86.5%)，单纯内外直肌截除 5~6mm 或完全复位术，均解决原在位欠矫量或过矫量 30~40△，A-V 型斜视消失 31 例 (83.7%)。

结论：水平直肌超常量后徙产生 A 型斜视，原水平直肌再次手术可以明显解决原在位斜视角，同期处理直肌附着异常联合减弱亢进斜肌。

The surgery characters of A-V pattern after concomitant strabismus treatment

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PURPOSE: To investigate the surgery characteristics of A-V pattern with abnormality of oblique muscle or point of attachment of muscle.

METHOD: Patients who underwent surgery for the A-V pattern strabismus after concomitant strabismus surgery were enrolled in our study. The age of onset was recorded in all patients. The vision, deviation, ocular movement and clinical characteristics examined and analyzed, and fundus photo were obtained. Surgery Design: Lateral rectus and medial recuts surgeries were for the distance and near deviation, respectively. Weakening the inferior oblique and superior oblique were for the V-pattern and A-pattern strabismus, respectively, combination with rectus exploratory and distraction test.

RESULTS: . A total of 37 patients were included, including 24 patients with A pattern strabismus and 13 patients with V pattern strabismus. Among these patients, there were 28 patients with abnormality of oblique muscle. The average age at surgery was 3 years (range, 3-30 years).

1. Oblique muscle abnormality group: This group included 28 patients. 14 patients with A-pattern exotropia and superior oblique muscle overaction and 5 patients with A-pattern esotropia and superior oblique overaction were taken oblique muscle weakening surgery. Furthermore, 6 of 9 patients with V-pattern strabismus and inferior oblique muscle overaction underwent horizon recuts surgery with both inferior oblique myecomy surgeries, and 3 of 9 patients together with superior oblique muscle tucking. Among the 9 patients, adhesion between lateral rectus and inferior oblique muscle was found in 2 patients.

2. Oblique muscle normality group: 9 patients with A-pattern strabismus were included in this group. We found 6 patients had supernormal rectus recession surgeries and 3 patients had abnormal attachment of muscle. We performed horizon rectus surgery with recuts transposition.

3. Outcome: 32/37 (86.5%) patients ended with postoperative orthophoria, and the surgery could correct nearly 30-40 PD. 31/37 (83.7%) A-V pattern patients were corrected.

CONCLUSION: Horizon rectus muscle surgery together with weakening oblique muscle and adjust attachment of muscle is option for A-V pattern after concomitant strabismus surgery.

FP-30

上斜肌折叠手术前后 Bielschowsky 歪头试验的变化

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目的：探讨先天性上斜肌麻痹患者行上斜肌折叠术前后 Bielschowsky 歪头试验的变化。

方法：收集 2014 年 2 月至 2015 年 2 月于 xxxx 医院因先天性上斜肌麻痹行单眼上斜肌折叠的 22 例患者。根据患者原在位垂直斜度、眼球运动、客观旋转度数，代偿头位，采用上斜肌折叠的手术方式。采用三棱镜遮盖法定量进行 Bielschowsky 歪头试验，以头部向患眼侧倾斜与向健眼侧倾斜时患眼的垂直斜视度数 ≥5.0△为 Bielschowsky 歪头试验阳性。采用 Kolmogorov — Smirnov(K-S)、秩和检验、Spearman 相关性分析统计学方法。

结果：22 例患者术前均有垂直斜视、明显的代偿头位，行上斜肌折叠术后垂直斜视、代偿头位明显改善或消失，术前、术后 1d、末次复诊头部向患眼侧倾斜及向健眼侧倾斜时，患眼的斜视度数的差值分别为 5.00△~17.00△，平均（8.68 ± 3.23）△；1.00△~8.00△，平均为（3.36 ± 2.01）△；0.00△~14.00△，平均（3.77 ± 3.01）△（Z= -4.637, $P < 0.05/3$）。

结论：上斜肌折叠手术 Bielschowsky 歪头试验转阴率较高

The effect of superior oblique tucking on the Bielschowsky head tilt test

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OBJECTIVE: To investigate the effect of superior oblique tucking on the Bielschowsky head tilt test.

METHODS: A retrospective analysis of 22 patients of congenital unilateral superior oblique palsy， who underwent tucking of the superior oblique tendon in xxxx Hosptial .According to vertical deviation in the primary position,eye movement, objective cyclotorsion and abnormal head positio. Bielschowsky head tilt test was evaluated quantitatively before and after the operation by the prism cover test while the patient fixated at 33 cm and 5 m on the small light target.A positive Bielschowsky head tilt test was defined as one in which the vertical deviation when the head tilt to the side of the paresis was at least 5. 0△ greater than that on tilt to the uninvolvedside.Kolmogorov-Smirnov (K-S), rank sum test and Spearman correlation analysis statistical methods were used in this study.

RESULTS: All patients had vertical deviation and significant abnormal head position before this operation .After underwent superior oblique tucking, their vertical deviation and symptom of unacceptable abnormal head position were ameliorated or disappeared.Before the operation, the hyperdeviation on tilt to the side of the paresis D-value the uninvolved side was 5.00△~17.00△,average（8.68 ± 3.23）△.A positive Bielschowsky head tilt test was found in all cases preoperatively. One day after the operation,. was 1.00△~8.00△,average（3.36 ± 2.01）△. The last review after the operation,. was 1.00△~8.00△,average（3.36 ± 2.01）△.P ＜ 0.05 ／ 3 .The result of Bielschowsky tilt test was still positive in 5cases and negative in17cases(77.27%).

CONCLUSION: In most cases with unilateral superior oblique paresis, the results of Bielschowsky tilt test change to negative after superior oblique tucking.The long-standing results is worthy of observation.

FP-31

间歇性外斜视远立体视与年龄、斜视度数、控制力的相关性研究

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目的：研究间歇性外斜视 [X(T)] 患者的远立体视与年龄、斜视度数、远控制力的相关性，进一步探究手术时机。

方法：收集就诊于我院的基本型 [X(T)] 患者 79 例。所有患者术前均评估患者的远立体视、斜视度数及远控制力。通过偏相关分析分别计算远立体视与年龄、斜视度数、远控制力的相关性，建立多元回归模型分析三个因素对远立体视的影响。

结果：79 例患者的年龄范围为 4-24 岁，斜视度数范围为 20-100PD ，远控制力分数为 3，4 或 5。术前仅有 3 名患者远立体视小于 100″ 。76 名（96.2%）患者有异常的远立体视，其中 28 名（36.8%）患者没有远立体视（即大于 720″ ）。年龄与远立体视之间、斜视度数与远立体视之间、远控制力与斜视度数之间经偏相关分析均为正相关（p< 0.01）。其中，远控制力与远立体视之间的相关性更为明显。远立体视与其余三个因素间的多因素回归模型的建立有效（sig=0.000 ＜ 0.005,F=39.009 ＞ 0.001）。

结论：年龄、斜视度数、远控制力均对远立体视有影响。三个因素中，远控制力对远立体视的影响最大，其次是斜视度数，最后才是年龄。好的远控制力往往伴随着好的远立体视。

The relationships between stereoacuity and age, angle of deviation, control grade in intermittent exotropia

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PURPOSE: To evaluate the timing of surgery, we conducted the study to identify the relationships between stereoacuity and age, angle of deviation ,control grade in intermittent exotropia[X(T)].

METHODS: We collected consecutive 79 basic X(T) patients from June,2015 to August,2016 in the department of ShanXi Eye Hospital. All subjects underwent a complete ophthalmic and orthoptic assessment. The angle of deviation and control grade were rigorously measured at distance(6m) before surgery. Statistical analysis was performed using SPSS statistical software (SPSS, Inc., Cary, NC). A *P*-value of less than 0.05 was regarded as statistically significant. Partial correlation analysis was done between distance stereoacuity and one of age, distance control grade and angle of deviation. Expect that, the model of multiple regression was established to compare the influences of the three factors above to distance stereoacuity.

RESULTS: The age of the 79 cases who prepared for strabismus operation ranged from 4 to 24 years. Their degrees of deviation ranged from 20 PD to 100 PD. Their distance control scores were equal or more than 3. The distance stereoacuity of only 3 (3.8%) patients was better than 100″ (arc second). 76 (96.2%) patients have abnormal distance stereoacuity preoperatively, while 28 (36.8%) cases have no distance stereoacuity (more than 720″). There are positive correlations between age and distance stereoacuity($p < 0.01$), angle of deviation and distance stereoacuity($p < 0.01$) and distance control grade and distance stereoacuity ($p < 0.01$). The correlation between distance control grade and distance stereoacuity was more obvious. Multiple regression model was built successfully between the four factors($sig=0.000 < 0.005$, $F=39.009 > 0.001$).

CONCLUSIONS: All the three factors have influences to distance stereoacuity. Among them , control grade has the most influence than the other two. The next one is angle of deviation while the last one is age. Better control grade was significantly accompanied by better distance stereoacuity.

FP-32

间歇性外斜视患者远距离眼位控制能力评估的研究

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目的：应用诊室内 6 级眼位控制能力评估法，对间歇性外斜视儿童远距离眼位控制能力进行分析和评估。

方法：52 例间歇性外斜视儿童纳入本前瞻性、非干预性病例系列研究。应用诊室内 6 级眼位控制能力评估法，评估患儿注视室内 6m（ID）视标和 33cm 视标的眼位控制能力。然后，应用该方法评估患儿注视室内 30m（IFD）视标及户外 50m (OFD) 视标时的眼位控制能力。结果取其评分的平均值。

结果：52 例中，基本型 33 例，分开过强型 4 例，类似分开过强型 16 例。在 52 例患儿中，注视户外视标时的眼位控制能力差于（31%）或等于（70%）注视室内 30m 视标时的眼位控制能力；注视室内 30m 视标时的眼位控制能力差于（64%）或等于（35%）注视室内 6m 视标时的眼位控制能力；注视户外视标时的眼位控制能力差于（69%）或等于（31%）注视室内 6m 视标时的眼位控制能力。平均眼位控制能力评分在 OFD 与 IFD、IFD 和 ID、OFD 和 ID 之间的差异均有统计学意义。

结论：户外及室内更远距离的眼位控制能力评估能够提高诊室内 6 级眼位控制能力评估法的敏感性，我们推荐将该方法应用到对间歇性外斜视患者眼位控制能力的评估中。

Far distance control scores for assessing intermittent exotropia

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PURPOSE: To assess the level of control in intermittent exotropia by applying the office-based 6-point control scale to far distance testing.

METHODS: Fifty-two children with intermittent exotropia were enrolled in this prospective, non-interventional case series. Testing of control was done prior to dissociative testing. Control of exodeviation was assessed in current refractive correction at indoor distance (ID) (3 m) and near (33 cm) using the Office Control Score described by Mohney and Holmes. Additionally for this study, the same control scale was applied to indoor far distance (IFD) fixation (30 m) and outdoor far distance (OFD) fixation (50 m). The control scale ranged

from 0 (phoria, best control) to 5 (constant exotropia, worst control). The mean of each control score was calculated.

RESULTS: The mean age of 52 enrolled children was 7.5 years, ranging from 5 to 12 years. There were 33 patients with basic type, 4 with divergence excess type, and 16 with pseudo divergence excess type of IXT. In all 52 patients, the level of control at OFD fixation was either worse than (31%) or the same as (70%) the level of control at IFD fixation and the level of control at IFD fixation was worse than (64%) or the same as (35%) the level of control at ID fixation. The level of control at OFD fixation was worse than (69%) or the same as (31%) the level of control at ID fixation for all the 52 patients. The differences between mean control scores of OFD and IFD fixation ($P = 0.002$), IFD and ID fixation ($P < 0.001$), OFD and ID fixation ($P < 0.001$) were statistically significant.

CONCLUSIONS: The outdoor and indoor far distance control scores can increase the sensitivity of the office-based 6-point control scale. We recommend this new application of the office control scale for assessing control in patients with IXT.

FP-33

上斜肌后部断腱术治疗 A 型斜视的临床效果

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目的：评估上斜肌后部断腱术治疗继发于单侧或双侧上斜肌功能亢进的 A 型斜视而无眼球旋转患者的临床效果。

方法：回顾性研究 2013 年 9 月至 2016 年 12 月期间诊断为继发于上斜肌功能亢进的 A 型斜视，行上斜肌后部断腱的 10 例患者。手术前后评估患者的眼位、眼球旋转、A 型斜视和眼球运动。应用三棱镜检查患者正前方、上转注视 25 度和下转注视 25 度的斜视角度，眼底照相检查眼底旋转角度。

结果：共有 10 位患者（平均年龄：15 岁，6 位男性，4 位女性）进行了单侧或双侧上斜肌后部断腱术，术前平均的 A 型斜视角度为 15 三棱镜度，术后平均的 A 型斜视角度为 2.25 三棱镜度，平均降低了 12.75 三棱镜度。术前平均的上斜肌功能亢进程度为 2.27，术后平均的上斜肌亢进程度为 0.5，平均减弱了 1.77。眼球旋转，垂直和水平斜视角度改变情况和上斜肌后部断腱术无相关性。

结论：上斜肌后部断腱术保留前部纤维完整，选择性减弱了眼球下转时的内转作用，而保留了内旋转作用，导致上斜肌麻痹和转为 V 型斜视的几率很低，是治疗 A 型斜视而不引起眼球旋转状态改变的一种有效的手术方式。

The efficacy of superior oblique posterior tenotomy in the treatment of A-pattern strabismus without ocular intorsion

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PURPOSE: To evaluate the surgical results of superior oblique posterior tenotomy procedures to treat A-pattern strabismus patients who had bilateral or unilateral superior oblique overaction without ocular objective intorsion.

METHODS: The records of 10 consecutive patients who underwent surgery of superior oblique posterior tenotomy close to its insertion with superior oblique overaction (SOOA)-associated A-pattern strabismus between September 1, 2013 and August 31, 2015 were retrospectively reviewed. Ocular alignment, objective torsion, A-pattern and ocular motility were assessed. Ocular alignment was measured in the primary position, 25° upgaze, and 25° downgaze using the prism bar cover test, and torsion was measured using fundus photographs.

RESULTS: A total of 20 patients (mean age: 15 years; 6 male, 4 female) underwent bilateral or unilateral superior oblique posterior tenotomy and simultaneous horizontal rectus muscle surgery were included. The mean preoperative A-pattern deviation was 15 PD and the mean postoperative A-pattern deviation was 2.25 PD with a mean reduction of 12.75 PD. The mean preoperative superior oblique overaction was 2.27 and the mean postoperative superior oblique overaction was 0.5 with a mean reduction of 1.77. There was no significant correlation between the ocular torsional, vertical and horizontal alignment change and the superior oblique posterior tenotomy procedure.

CONCLUSIONS: Superior oblique posterior tenotomy leaving the anterior fibers intact will result in selective weakening of the abduction in downgaze while preserving its intorsion, and the risks of inducing superior oblique palsy or V-pattern were rare. Superior oblique posterior tenotomy surgery selectively improved the A-pattern but not affect the primary position vertical and horizontal deviation, as well as the ocular torsion. So the superior oblique posterior tenotomy is an effective procedure to treat the A pattern without inducing tortional changes.

FP-34

不明原因双眼外展神经不全麻痹致小角度内斜——附 3 例报告

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目的：探讨 3 例小角度麻痹性内斜视可能病因

方法：对我院近期遇到 3 例青年发病小角度麻痹性内斜视进行分析。

结果：2 例男性，1 例 14 岁出现内斜视、伴复视，1 例 12 岁出现内斜视伴复视；另 1 例女性，26 岁出现复视，检查发现小角度内斜视。3 名患者均未有全身症状，无外伤史。神经内科及内科检查除外神经系统及内分泌系统病变。3 例患者均主诉在长时间注视电脑屏幕并睡眠不足后突发复视，发病至今症状无明显变化。眼科检查：矫正视力均正常，斜视度分别为 33CM/6M：15/25Δ; 15~20/20Δ;0~9/9Δ；3 例均为 REF=LEF。眼球运动：第 1 例双眼外展各欠 1MM；第 2、3 例眼球运动无明显异常。眼前节、眼底及瞳孔均无异常。Hess 屏检查均发现双侧外展不同程度受限，内收过度，两侧较为对称。第 1 例目前在随访观察中，第 2 例行单眼内直肌后徙术后眼位正位，复视消失。第 3 例戴三棱镜消除复视。

结论：外展神经麻痹虽可发生于任何年龄，多由于脑干、颅底、外部压迫或外展神经自身病变、炎症、内分泌疾病等引起。本文 3 例病程已达 3-4 年，未发现以上病变。病因是否与长期盯视电脑，眼持续处于调节状态导致内直肌持续紧张有关？希望与同道探讨。

Paralytic Esotropia of small angle suffered from paralysis of Sixth Nerve

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PURPOSE: To report 3 cases of paralytic esotropia with small angle and to discuss potential reason

METHODS & RESULTS: 3 cases of paralytic esotropia were presented with some common clinical characteristic such as, onset of disease at young age, small angle of deviation with REF=LEF,, double vision without apparent abnormal function of extrocular muscles when examining the eye movement, Insufficient function of dual lateral rectus and over action of bilateral medial rectus exposed by Hess screen tests, no systemic problem was found after extensive examination including MRI and laboratory tests and 3~4 years follow-up.

Another uniform state of 3 cases is that double vision was suffered after a longer time gazing on computer screen without sufficient sleep. By now, one case has been still under follow up. One case has accepted surgery and double vision disappeared. One case has gotten press prism to eliminate double vision.

CONCLUSION: Paralysis of bilateral abducens nerve are usually suffered from lesions in brainstem or in abducens. Tumor, vascular disease, inflammation, and demyelization are common reason. But all these reasons are not found in the 3 cases. If long time excessive convergence due to long time gazing on screen should be blamed which probably cause excessive over action or even long term spasticity of bilateral medial rectus.

FP-35

比较双眼内直肌折叠术与双眼内直肌截除术治疗集合不足型间歇性外斜视的研究

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目的：比较双眼内直肌折叠术（BRP）与双眼内直肌截除术 (BRR) 治疗集合不足型间歇性外斜视 (CI) 的有效性与安全性。

方法：本试验为前瞻性临床试验，收集 56 例 CI 患者，随机分配至折叠组 27 例，行 BRP，截除组 28 例行 BRR，术后随访半年。记录术中出血、手术时间、术后结膜反应以及术后斜视度。以术后视远眼位 ≤ ± 10 △为正位。

结果：术前折叠组视远斜视度为 -33.74 △ ± 12.6，截除组为 -36.07 △ ± 11。术后 1 天，折叠组视远斜视度为 +6.56 △ ± 5.56，低于截除组 +10.79 △ ± 9.3（p=0.046）; 折叠组正位率 77.8%，高于截除组正位率 50%（p=0.032）。术后 1、3、6 月，两组斜视度差异无统计学意义，折叠组正位率分别为 88.9%、69.2%、64%，截除组正位率分别为 89.3%、73.1%、61.5% 组间差异无统计学意义（p ＞ 0.05）。折叠组手术用时（12.92 ± 1.44 分）少于截除组（14.70 ± 1.40 分）（p=0.000）, 折叠组术中出血及术后结膜反应均轻于截除组（p=0.000）。

结论：BRP 治疗 CI 的有效性与 BRR 相似，具有手术操作简便、安全、术后反应轻的特点。

Comparison of bilateral medial rectus plication and resection for treatment of convergence insufficiency type of intermittent exotropia

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PURPOSE: To compare bilateral medial rectus plication and resection for treatment of convergence insufficiency(CI)-type intermittent extropia(IXT).

METHODS: 56patients with CI-type IXT in this prospective study with 6 months follow-up. All patients were randomly devided into two groups: bilateral medial rectus(BRP) group(27 cases) and bilateral medial rectus resection(BRR)group(28 cases). Intraoperative bleeding scores,operative time and postoperative conjunctival inflammation were recorded.Surgical success was defined as alignment between 10PD esodeviation and 10PD exodeviation.

RESULTS: The mean preoperative deviations at distance were -33.74 ± 12.6PD in the BRP and -36.07 ± 11PD in the BRR. At 1 day postoperatively, the mean deviation at distance was +6.56 ± 5.56PD in the BRP and +10.79 ± 9.3PD in the BRR(P=0.046); success rate in BRP(77.8%) was higher in the BRR(50%)(p=0.032).At 1,3,6 months postoperatively, the deviation angles were not significant($p > 0.05$), and the success rate were 88.9%,69.2%,64%in the BRP group and 89.3%,73.1%,61.5% in the BRR group($p > 0.05$). The operative time in the BRP(12.92 ± 1.44 minutes)group was shorter than it in the BRR(14.70 ± 1.40minutes)(p=0.000). The intraoperative bleeding and postoperative conjunctival inflammation in the BRR group were milder than those in the BRR(p=0.000)

CONCLUSION: The BRP surgery is an alternative procedure for treating CI-type IXT with simpler, safer and less traumatic characters.

FP-36

眶壁固定术矫正复杂性斜视

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目的：探讨眶壁固定术矫正复杂性斜视的手术效果。

方法：回顾分析 2010 年 1 月至 2015 年 6 月收治于中山大学中山眼中心的复杂性斜视患者的完整病例资料。术前明确常规的斜视矫正手术无法矫正。眶壁固定术采用简单的丝线将眼球联结到眶壁深部结构，实现眼外肌与眼眶骨壁间的“肉肉”吻合，术中观察眼球的位置，以能达到稍许过矫作为最终的矫正眼位。

结果：8 例复杂性斜视患者接受了眶壁固定术，包括严重的眼眶损伤或骨折修复术后斜视 4 例，鼻窦内窥镜手术致内直肌断裂 2 例，动眼神经麻痹 1 例，外直肌麻痹 1 例。男 5 例，女 3 例；年龄 20.0 到 57.0 岁，平均 38.1 岁；右眼 7 例，左眼 1 例；采用内侧眶壁固定术者 5 例，外侧眶壁固定术者 2 例，下方眶壁固定术者 1 例。术前水平方向斜视度平均达到 60.625 ± 27.443 △，治疗后经随访至少 6 个月，平均水平方向斜视度降至 16.250 ± 12.464 △，平均垂直方向斜视度由术前的 15.000 ± 12.313 △降至 7.5 ± 5.244 △。2 例术后达到正位，6 例术后均欠矫，但外观均明显改善。无其它手术并发症。

结论：应用丝线将眼球与眶壁进行“肉肉”吻合的眶壁固定术矫正复杂性斜视效果满意。

Suture fixation of globe to the orbital wall for complicated strabismus

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PURPOSE: To observe the surgical outcomes of suture globe fixation to the orbital wall for patients with complicated strabismus.

MATERIALS AND METHODS: The medical records of patients with complicated strabismus who were treated at the Zhongshan Ophthalmic Center of Sun Yat-sen University, Guangzhou, China from January 2010 to June 2015 were retrospectively reviewed. Routine strabismus surgery was not possible in these cases. Eyes were anchored to the orbital wall by simple strong anastomosis of the extraocular muscle and orbital wall tissues using silk suture, which resulted in slight overcorrection of the ultimate ocular position after anchoring.

RESULTS: Eight patients with complicated strabismus received suture globe fixation to the orbital wall in our hospital, including 4 cases of strabismus that occurred after severe orbital injury and/or fracture repair, 2 cases of medial rectus rupture after endoscopic sinus surgery, 1 case of complete third nerve palsy and 1 case of complete sixth nerve palsy. Five patients were male and 3 female, with ages ranging from 20.0 to 57.0 years old (mean = 38.1 years). The right eyes were involved in 7 cases and the left in 1 case. Five cases underwent globe fixation to the medial orbital wall, 2 cases to the lateral orbital wall, and 1 case to the inferior orbital wall. After at least 6 months follow up, preoperative horizontal deviation of 60.625 ± 27.443 prism diopter (PD) (mean + standard deviation) was reduced to 16.250 ± 12.464 PD. The vertical deviation was reduced from 15.000 ± 12.313 PD to 7.5 ± 5.244 PD. Two patients achieved ortho-

phoria, and although the remaining 6 patients showed some residual strabismus (undercorrection), their appearance was significantly improved. No other surgical complications occurred in these cases.

CONCLUSION: Suture fixation of the globe to the orbital wall by flesh-to-flesh anastomosis of the extraocular muscle and orbital wall tissues achieved a desirable surgical result for complicated strabismus.

FP-37

反 Knapp 手术与下斜肌全肌腹转位手术治疗先天性及获得性下直肌功能不足疗效比较

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目的：不同手术方法治疗下直肌功能严重不足的疗效比较 ;

方法：对 15 例下直肌缺如或全麻痹采用上直肌后徙联合反 knapp 手术（6 例）或下斜肌全肌腹转位联合上直肌后徙术（9 例）进行回顾性分析。观察项目包括患者性别、年龄、临床表现、手术方式及术后效果（术后正前方及下方斜视度、眼球运动、代偿头位）;

结果：两种手术方式主要适应症为眼眶爆裂性骨折引起的下直肌严重损伤或麻痹，以及先天下直肌缺如及全麻痹。反 Knapp 手术与下斜肌全转位均可改善患者第一眼位及工作眼位；眼球下转到一定程度改善，具有代偿头位的患者，术后头位明显改善。行反 Knapp 手术组 1 位患者要求二次手术。

结论：两种手术方式均可有效改善下直肌缺如或全麻痹引起的上斜视，但较反 kanpp 手术联合上直肌后徙需分期手术，上直肌后徙联合下斜肌全肌腹转位手术有着一期完成，且手术便捷的优点。鉴于上述优势，我们提出后者作为先天性或获得性（包括外伤引起的眶下壁爆裂性骨折）下直肌功能明显不足的有效治疗手段之一。

Comparisons between different surgical procedures for congenital and acquired inferior rectus weakness: inverse Knapp procedure Versus integrated anterior transposition of inferior oblique muscle procedure

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PURPOSE: To compare and evaluate the indications and results of inverse Knapp procedures and integrated anterior transposition of inferior oblique muscle performed at Tianjin Eye Hospital over a 15 year period between 2002 and 2017.

METHODS: The records of patients who had undergone inverse Knapp procedures or integrated anterior transposition of inferior oblique muscle were retrospectively reviewed. Demographic data were collected, pre- and post-operative orthoptic assessments were evaluated, and pre- and post-operative eye movement and compensatory head posture were compared.

RESULTS: Twenty patients were identified and records were available in 15(6 cases for inverse knapp procedure and 9 cases for integrated anterior transposition of inferior oblique muscle, with or without super rectus recession). The main indication for the operation was orbital trauma and congenital absence or palsy of the inferior rectus. The mean vertical deviation in primary position and downgaze improved from 35 prism dioptres (PD) to 5.47 PD and 50 PD to 4.5 PD for inverse knapp procedure respectively. Also there are significant improvement at primay and downgaze position from 43 PD to 6.37PD and 53PD to 5.2 PD. The infraduction were improved, from -3.0 to 1.2 for inverse knapp procedure and from -3.0 to 1.4 for integrated anterior transposition of inferior oblique muscle. The head posture of patients in both group have improved. Further operations were required for 1 patients in inverse knapp procedure group.

CONCLUSIONS: Inverse Knapp procedure is an uncommon strabismus operations but an extremely useful method in selected cases. The procedure that integrated anterior transposition of inferior oblique muscle works as well as Inverse Knapp procedure. And the advantage of this procedure are the simplicity of the surgical technique and one-stage operation. We recommend the latter procedure, as another option, for the treatment of marked inferior rectus weakness, congenital or acquired, for post-traumatic inferior rectus underaction with or without orbital blow-out fracture and for residual large hypertropia in patients with poor binocular functions.

POSTERS

Esotropia and Retinal Deposits in a Patient with Gaucher Disease Type 3: A Case Report.
Saadet F. Yilmaz, MD; Funda Dikkaya, MD; Elvan Yalcin, MD; Mustafa Elcioglu, MD

Predisposing Factors and Ophthalmic Manifestations in Children with Periventricular Leucomalacia Presenting to a Tertiary Eye Care Centre in Northern India
Suma S. Ganesh, MS; Rolli R. Khurana, MS; Sonia S. Sharma, Optom; Batriti B. Wallang, MS

The Effect of Cholinerqic Mechanisms on the Retrobulbar Hemodynamics
Sevinj S. Salmanova, PhD; Elmar Kasimov, Prof.; Saida Haciyeva, Prof.; Afet Mamedzade, PhD

Langerhans Cell Histiocytosis (LCH) Mimicking a Chalazion
Neepa Thacker M. Dave, MD; Rupali Sinha, MD; Seema Pallawkar, MD

Anisohypermetropia as a Sign of Unilateral Glaucoma in the Pediatric Population
Deborah K. Tan, MBBS; Gillian Teh, MBBS; Ching Lin Ho, FRCS; Boon Long Quah, FRCS

Acute Acquired Incomitant Esotropia Related To Nutrional Status
Pei-Tzu Kuan, MD

Augmentation with Botulism Toxin A in Large-Angle Sensory Exotropia Surgery - Case Report
Chih-Yu Chen, MD; Chien-Liang Wu, MD

Relation between Early Postoperative Deviation and Long-term Outcome after the Unilateral Lateral Rectus Recession and Medial Rectus Resection Procedure for Adult Exotropia
Parnchat Pukrushpan, MD; Ponnarun Kanjanawasee, MD; Pokpong Praneeprachachon, MD

壁报交流 / Poster

Choroidal Thickness in Children with Hyperopic Anisometropic Amblyopia

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INTRODUCTION: The purpose of this study is to determine the choroidal thickness in children with hyperopic anisometropic amblyopia and to compare the outcomes with that of fellow eyes and age-sex matched control subjects.
METHODS: Twenty patients (6.6 ± 2.2 years, mean ± SD) with hyperopic anisometropic amblyopia and twenty age-matched controls (6.7 ± 1.9 years) were erolled in this study. Complete ophthalmic examination and choroidal thickness measurement were performed to all patients and control subjects. Choroidal thickness was measured vertically from fovea center and 1.500 μm and 3.000 μm temporal and nasal regions of fovea by spectral domain optical coherence tomography.
RESULTS: The mean age was 9.4 ± 2.6 years (range 5-10) in the hyperopic anisometropic amblyopia group, and 9.8.2 ± 3.2 years (range 5-10 years) in the control group.The mean subfoveal choroidal thickness measurement was found 338.3 ± 52.6 μm in the amblyopic eyes, 276.4 ± 54.2 μm in the fellow eyes and 274.52 ± .3 μm in the control eyes.
DISCUSSION: The subfoveal choroid of eyes with hyperopic anisometropic amblyopia is significantly thicker than that of the fellow eye and the age-matched controls.
CONCLUSION: This study indicates that Hyperopic anisometropic amblyopia is related to a thicker choroid. This result may be a useful parameter to verify the diagnose of amblyopia.

Anisometropic Amblyopia in a Hydrocephalus child

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INTRODUCTION: To report a case of anisometropic amblyopia in a child with a history of hydrocephalus that was already treated with ventriculo-peritoneal (VP) shunt
METHODS: Observational case report
RESULTS: A 3 year old female presented in the clinic for eye evaluation referred by a neurosurgeon. She had undergone VP-shunt surgery at age 6 months due to post-hemorrhagic hydrocephalus. She had a history of premature birth of 31 weeks with birth weight of 1500

grams. She is now coping well postoperatively and thriving according to age developmental scale. Ophthalmology examination revealed an unaided visual acuity of 1 meter finger counting on the right eye and 6/12 on the left eye with a Kay picture chart at 6 meter distance. There was right exotropia on primary position of 10 prism diopter and becoming alternate on cover test examination. No abnormalities on anterior segments. We performed cycloplegic refraction on both eyes that revealed a high myopia on right eye -15.00/-2.00 x180 and -0.25 on left eye. No optic atrophies were found in both eyes. Full correction of spectacles was given straight away and the child was seen again after 2 months. Compliance of spectacle wear was quite good at the follow-up that visual acuity on the right eye improved to 6/60. An occlusion therapy of the left eye was then started at 4 hours/day and we expect to see her again in the clinic in 2 months.

DISCUSSION: Hydrocephalus in children has many etiologies and can cause ophthalmological abnormalities (refractive errors, strabismus, impaired depth perception and simultaneous perception and visual field constriction in up to 80% of cases and visual impairment in one-third of cases. Though the most severe case would cause optic atrophy thus blindness, in cases with spared optic nerve, refractive errors were reported to be as high as 67%. Hyperopia and astigmatism was the most common, however myopia and anisometropia has also been reported. In this case we have not been able to evaluate the visual field due to young age.|

CONCLUSION: Ophthalmology abnormalities is common in post-hemorrhagic hydrocephalus. It is important to have preoperative and postoperative ophthalmology evaluation especially in a visually developing child

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To study the role of omega fatty acids in amblyopia

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INTRODUCTION: To study the role of omega fatty acids in amblyopia

METHODS: This randomized controlled study included thirty two patients aged 5- 12 years of age with unilateral amblyopia. One group (A) of sixteen patients were prescribed occlusion therapy and the other group (B) received 1000 mg per day of omega fatty acids along with occlusion for a period of three months. Two follow up assessments at 1 week and end of three months.

RESULTS: Mean age of the patients was 8.68 Â ± 1.55 years. The mean baseline visual acuity for distance was 0.142 (SD - 0.071) for Group A and 0.155 (SD - 0.073) for Group B. At the end of therapy, the mean visual acuity was 0.33 (SD - 0.192) and 0.392 (SD - 0.196) for Group A and B respectively. Within the Groups there was statistically significant improvement in vision Group A (p value-0.0008) and Group B (p value-0.0001). Lines of improvement of two and more than two observed in omega fatty acid group along with occlusion (10 of 16 patients) as compared to only occlusion (8 of 16 patients) (p value-0.25, insignificant).

DISCUSSION: Mean visual acuity within the group was increased and found to be statistically significant. Occlusion when compared with omega fatty acids plus occlusion was found to be statistically insignificant.

CONCLUSION: Omega fatty acids improves visual acuity in patients with amblyopia and maintains improved visual acuity. This study encourages further research on this subject.

Ophthalmic Manifestations of Homozygous Protein C Deficiency in the Off-Springs of First Cousin Parents

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INTRODUCTION: Marriages between the first cousins is known to double the risk of having a child with potentially life and vision threatening birth defects. Here we present three cases with homozygous protein C deficiency (HPCD). All of these children were born full term after unremarkable pregnancies to healthy first cousin parents with no history of HPCD or thrombotic disorders in their families.

METHODS: The medical, ophthalmic, laboratory and genetic records for the three HPCD diagnosed patients and their parents, two of these cases were siblings, were reviewed.

RESULTS: Laboratory findings showed extremely low levels of protein C activities (Ranging between 0.01 to 0.08 U/ml, which is less than 1% of normal reference range) indicating severe deficiency of Protein C. The molecular findings are consistent with homozygous state of the patients and heterozygous state of their parents with two different protein C gene mutation.

The systemic manifestation showed disseminated intravascular coagulation (DIC) with purpura fulminant (PF) since birth. Ophthalmic manifestations at birth included bilateral leukocoria in two cases, bilateral vitreous, retinal hemorrhage and retinal detachment in one case. Blindness was the outcome all patients.

DISCUSSION: HPCD secondary to consanguineous marriages resulted in severe ocular damage. Further studies are warranted to determine the mechanism of HPCD related severe ocular defects.

CONCLUSION: The result of this study further support the earlier claims that consanguineous marriages may enhance the risk of HPCD in the off-sprigs. Premarital genetic counseling as well as prenatal screening are prudent choice for consanguineous couples.

Esotropia and Retinal Deposits in a Patient with Gaucher Disease Type 3: a case report

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INTRODUCTION: This is a case report of a 12-year-old patient diagnosed with Type 3 (subacute neuronopathic form) Gaucher disease, presenting with intermittent esotropia and retinal deposits.

METHODS: The patient, a 12-year-old Caucasian female, was diagnosed with Gaucher disease Type 3 at the age of one. Since the diagnosis, she was given enzyme replacement therapy. The patient was also experiencing moderate mental retardation, epilepsy and genu valgum deformity. An ophthalmic examination showed a visual acuity of 7/10 in the right, and 10/10 in the left eye. The examination of ocular motility demonstrated an overaction in the inferior oblique muscle of both eyes. The patient had 25 prism diopters of alternating intermittent esotropia, and went through a medial rectus recession of the right eye when she was 8 years old. Dilated fundoscopy showed yellowish-white oval deposits, bilaterally obscuring the vessels on the inferior vascular arcades. |

RESULTS: This case shows that, despite long term enzyme replacement therapy, the presence of intermittent esotropia and retinal deposits in a patient with Gaucher disease Type 3 can be observed.

DISCUSSION: Gaucher disease is an autosomal recessive lysosomal storage disease, and characterized by glucosylcerebroside deposition in reticuloendothelial cells due to a deficiency of lysosomal glucocerebrosidase enzyme.1 Horizontal version anomalies, congenital oculomotor apraxia, strabismus and retinal white deposits have been previously reported in Gaucher disease Type 3.2 However, the presence of retinal deposits, despite use of long term enzyme replacement therapy, is limited in the literature. A possible explanation for this finding is based on the molecular size of recombinant glucocerebrosidase. Due to its large molecular size, it cannot cross the blood-brain-barrier and reach the eye, and as a result, lead to the formation of retinaldeposits.

CONCLUSION: With the presented findings, it is suggested that careful ophthalmic assessment should be included as part of annual follow-up in patients with Gaucher’s disease Type 3.

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The Effect of Strabismic Surgery on Intraocular Pressure

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INTRODUCTION: The aim of the study is evaluation of the effect of strabismus surgery applied on horizontal muscles on intraocular pressure

METHODS: In this one year cross sectional study, patients undergoing horizontal strabismus surgery were retrospectively reviewed. Criteria for recruitment to work; Patients are between the ages of 5 and 50, have been followed for at least 6 months, and have no glaucoma. A complete ophthalmologic examination including a strabismus examination of all patients was performed. Measurements were made with an Ocular Response Analyzer before and after strabismus surgery. Goldmann-correlated IOP (IOPg) and corneal-compensated IOP (IOPCC) values were compared

RESULTS: The mean age of our patients was 19.7 ± 12.6 years. Thirty-four male and 33 female patients were included in the study. Preoperative IOPg value averages were 15 ± 3.9 mmHg and IOPCC value was 14.5 ± 4.6 mmHg. At the postoperative 6th month, the mean IOPg value was 16.6 ± 4.3 mmHg and the IOPCC value was 14.4 ± 4.2 mmHg. There was a statistically significant difference between before and after IOPg values, but no significant difference between before and after IOPcc values.

DISCUSSION: It has been pointed out earlier that, the separation of the rectus muscles from the sclera and the interruption of the anterior ciliary arteries may cause intraocular pressure decrease. But they use different instrument for IOP measurement. In our study, no significant intraocular pressures were detected after strabismus surgery.
CONCLUSION: These results need to be supported by IOP's measurements made with the Ocular Response Analyzer, and with larger series of studies.

Predisposing factors and Ophthalmic Manifestations in children with Periventricular leucomalacia presenting to a tertiary eye care centre in Northern India

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INTRODUCTION: Periventricular leucomalacia (PVL) is a form of white matter brain injury and can affect newborns , premature infants are at the greatest risk . Impairment of visual function is a common finding in PVL.
This study aims to identify the common predisposing factors and associated ophthalmic manifestations in children diagnosed with PVL on MRI in a tertiary care centre of Northern India
METHODS: Thirty two patients records with PVL diagnosed by MRI were reviewed retrospectively for demographic data, possible predisposing factors , presenting visual behaviour and associated systemic associations. Visual acuity ,refractive errors, anterior segment, disc findings, strabismus, nystagmus, and tracking eye movements mentioned in records were noted.
RESULTS: Mean presenting age was 51.25 months and 23 children were male . The commonest visual behaviour noted was inability to see or focus on objects in 53.4%. Antenatal history and perinatal history was positive in 43.75%, and 96.8% respectively. 62.5% had vision recordable on Snellen's. Myopic astigmatism was the commonest refractive error. 12(37.5%) patients had exotropia whereas 10(31.25%) were esotropic. 13(40.6%) had nystagmus and 15 had disc pallor.
DISCUSSION: Impairment of visual function was significant in all our cases of PVL and 78.1% patients had associated motor as well as verbal developmental delay .Improvement of visual function is important for recovery of motor function and significant children had refractive errors and strabismus which were corrected by glasses and surgery for strabismus.
CONCLUSION: Early detection and early intervention of visual impairments in PVL cases can help in better therapeutic recovery in these children
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The effect of cholinerqic mechanisms on the retrobulbar hemodynamics

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INTRODUCTION: Cerebral visual impairment (CVI) comprises visual malfunction due to retro-chiasmal visual and visual association pathway pathology. This can be isolated or accompany anterior visual pathway dysfunction. It is a major cause of low vision in children in the developed and developing world due to increasing survival in pediatric and neonatal care. CVI can be present in many combinations and degrees. |Purpose:To study the status of hemodynamic parameters of children with refractive errors and poor accommodation on the background of cholinergic mechanisms of neonatal encephalopathy.
METHODS: In 12 patients (24 eyes) age from 3 to 14 were studied the state of regional blood flow. On Toshiba Diagnostic Ultrasound System Nemio XG SSA-580A, true triplex imaging, with 7,5 MHz frequency built-in sensor probe Colour Doppler Imaging (CDI) were materialized.
RESULTS: Thus, Vmax indicators decreased in OD to 35,16 ± 1,4sm/sec and in OS to 30,41 ± 1,1sm/sec (norm 38,8 ± 0,67sm/sec), Vmin - in OD to 7,74 ± 0,8sm/sec and in OS to 6,45 ± 0,6sm/sec (norm 9,19 ± 0,32sm/sec) respectively, while the RI increased in OD to 0,78 ± 0,03 and in OS to 0,77 ± 0,02 (norm 0,71 ± 0,01).The results are accurate statistical standard indicators ($P<0.05$). It also confirms the effect of cholinergic mechanism on retrobulbar bloodstream.|
DISCUSSION: The recently identified plasticity of the visual system proves to be maximally susceptible to various therapeutic effects.
CONCLUSION: Changes in refraction along with cholinergic mechanisms are accompanied by changes in retrobulbar hemodynamic parameters in ophthalmic artery.

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Infantile nystagmus syndrome: Etiology and demographic characteristics in Turkish Society

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INTRODUCTION: Nystagmus is a rhythmic oscillation of one or both eyes about one or more axes. Although INS has been studied for more than a century, its diagnosis remains a challenge to clinicians because of its varied manifestations and multiple associations. The aim of the study to determination of the etiology and demographic characteristics of patients with infantile nystagmus syndrome (INS)in Turkish society.
METHODS: In this cross-sectional study, nystagmus patients referred to our pediatric ophthalmology and strabismus department within 1 year were included. The etiology and demographic characteristics of the cases with the complaints of the rhythmic oscillation of the eyes and the findings of the cases diagnosed as INS were evaluated retrospectively.
Gender and age distributions, nystagmus story in the family and the presence of consanguineous marriage were assessed. INS etiologies were identified and grouped grouped.
RESULTS: Of the 95 patients, 65 (68.42%) were male and 30 (31.58%) were female. The mean age of the cases was 11,07 Â ± 10,92 years (range 4 months to 59 years). When nystagmus etiology was evaluated, 29 (30.5%) were classified as ocular pathology, 17 (17.89%) were classified as neurological growth retardation and 49 (51.57%) were classified as idiopathic.In 95 (25.26%) of the 95 cases, there were nystagmus stories in the family and 25 (26.31%) parents were related. In 11 (11.57%) cases, there were nystagmus stories in the family as well as consanguineous marriages between the parents.
DISCUSSION: INS includes a large group of patients with different ocular pathologies. Differential diagnosis has an important value.It is important to catalog symptoms and rule out serious causes of infantile nystagmus. A detailed history and complete ophthalmologic examination, including pedigree involvement in nystagmus, is important to determine the etiology.
CONCLUSION: Consanguineous marriages between the parents and related family narratives were found to be the most important cause of nystagmus in our patient group.

langerhans Cell Histiocytosis (LCH) mimicking a chalazion

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INTRODUCTION: To report a case of Langerhans cells histocytosis involving the palpebral conjunctiva mimicking a chalazion or a pyogenic granuloma
METHODS: Parents of a 2 year old male child presented with the incidental finding of a small non-tender lesion involving bilateral lower palpebral conjunctiva since 3-4 weeks. It was soft, reddish-yellow mimicking a burst chalazion or a pyogenic granuloma.A two weeks course of topical antibiotics and anti-inflammatory agents were given which failed to show any improvement following which excision biopsy of bilateral lower palpebral conjunctival lesions was done
RESULTS: Histopathology and immunohistochemical staining of the excisional biopsy established the diagnosis of Langerhans cells histiocytosis .Whole body PET scan shows no evidence of any metabolically active disease.
DISCUSSION: To the best of our knowledge Langerhans cell histiocytosis is an exceedingly rare tumour of the palpebral conjunctiva especially in this age group and can mimick a burst chalazion or a pyogenic granuloma
CONCLUSION: Think out of the box and do excisional biopsy for lesions not responding to regular treatment.

Anisohypermetropia as a sign of unilateral glaucoma in the pediatric population

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INTRODUCTION: Childhood glaucoma poses a diagnostic and therapeutic challenge to ophthalmologists due to difficulty in examination and limitations on structural and functional testing of optic nerve. In a child whose sclera is still vulnerable to the effects of elevated intraocular pressures (IOPs), proxies of persistent elevated IOP such as enlarging corneal diameter, increasing axial length and progressive

myopia need to be taken into consideration and assessed regularly. A marked change or significant inter-eye difference in refractive error may be an indicator of glaucoma which should prompt meticulous examination of the optic nerve head and IOPs.

METHODS: Case report

RESULTS: We present an unusual case of juvenile onset glaucoma presenting with anisohypermetropic amblyopia in one eye, and normal vision in the fellow eye that has glaucoma.

DISCUSSION: It is an interesting case as the eye with abnormal vision from amblyopia, though by itself requiring treatment was a red herring for a potentially blinding condition in the fellow eye with normal vision on examination. We believe that glaucomatous enlargement of the right eye resulted in significant loss of hyperopia in that eye and in turn contributed to anisohypermetropic amblyopia in the left eye.

CONCLUSION: All patients must be thoroughly examined when asymmetry is detected between each eye instead of assuming the common diagnosis of anisohypermetropic amblyopia. We have found an excessive loss of hyperopia to be a useful sign in alerting the examining ophthalmologist to the diagnosis of glaucoma. The importance of detailed fundal examination even in the presence of good central vision cannot be further emphasized.

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Management of cyclic strabismus

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INTRODUCTION: Cyclic esotropia is a rare form of strabismus characterized by alternating periods of esotropia and orthophoric (or almost orthophoric) eye position. In this study we introduce seven children with cyclic esotropia and their surgical treatment results.

METHODS: In this retrospective study seven chidren with esotropia appearing in 48 hours cycle were included. Four of the patients were boys and three of them were girls. Two children had been operated in another centre but we still determined cyclic esotropia component in a less amount compared to amount of deviation given in the epicrisis. All cases had a large angle of deviation and associated supression on the esotropic day and small angle of deviation with fusion on the other day. For all cases we planned strabismus surgery according to the amount of deviation on the esotropic day.

RESULTS: Following surgery we obtained ortotropia in all cases. All eyes remained straight during the follow up period.

DISCUSSION: Cylic strabismus is a rare condition . It has been reported to occur in 1 /3000-5000 cases. Esotropia is the most common form of cyclic deviations. Cyclic exotropia and cyclic vertical deviations have also been reported.In this study we reported seven cyclic esotropia cases out of 41.257 patients.

Surgery is almost always curative for cyclic esotropia. It should be planned according to the degree of deviation on the strabismic day.

CONCLUSION: Considering cyclic esotropia ,we noticed that the best surgical results can be achieved when surgery is planned according to the amount of deviation on the esotropic day.

Acute Acquired Incomitant Esotropia Related To Nutrional Status

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INTRODUCTION: Acute esotropia in adult usual conduct serial neurological evaluations but fundamental work-up includes detailed history obtaining and nutritional status survey should be taken into consideration.

We report a case of acute diplopia caused by acquired incomitiant esotropia. Vitamin B12 deficiency is presumably the cause.

METHODS: A case report

RESULTS: A 67-year-old male denied any ocular operation had blurry vision for 4-5 days. He reported that the floor look likes uneven. Looking at nearer target was more bothering. Incomitant esotropia was impressed. 6 prisms diopter in the primary position and 15 prisms in downgaze. Eye movement is full. Brain MRI and serial neurologic evaluations were normal. But lower titer of Vitamin B12 has been disclosed. After Vitamin B12 supplement treatment, his symptoms total resolved within 2 weeks.

DISCUSSION: Etiology of Incomitant strabismus includes extraocular muscle impairment, nerve damage. Acute esotropia in adult usual links with sixth nerve palsy, age-related distance esotropia, intracranial neoplasm and so on.In patients with no ocular insult includes operations or trauma and neurological survey were normal, other relative uncommon causes including nutritional status should be checked.

Deficiency of B12 had been mentioned related to gaze and eye movement disorder. Although eye movement disorders are unusual in vitamin B12 deficiency but they can occur. Timely supplement could make recovery or improvement.

CONCLUSION: Acute Incomitant esotropia in elderly people may be related to nutritional factors. Reverse or improvement of symptoms could be achieved through promptly management.

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Demographic structure and management in infantile esotropia

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INTRODUCTION: Our aim in this study is to reveal the demographic structure and management of infantile esotropia patients

METHODS: The files of infantile esotropia patients were evaluated retrospectively. Refractive correction with glasses, extraocular muscle surgery, and injection of Botulinum toxin A (BtxA) were performed. The deviation to orthotropia and
± 10 Prism Dioptry (PD) after single surgery or BtxA injection was defined as successful.

RESULTS: Of the 312 patients included in the study, 15 were followed only by refractive correction. 151 of the patients were injected with BtxA, and 157 patients were treated with surgery. The mean preoperative angle of deviation was
26.3 PD in the patients followed only by refractive correction, 38.8 PD in the BTA group and 38.2 PD in the surgical treatment group (p = 0.62).|152 of the patients were male, 160 were female, and 12 of the patients had preterm birth (prematurity).Successful motor recovery (orthotropia +/- 10PD) was achieved in 65.8% of cases in the surgical group and 45% in the BtxA group. (P <0.001, relative risk 1.46, CI, 1.23-1.74).

DISCUSSION: Surgical treatment in large angle strabismus(> 35 PD) was found to be more successful than BtxA injection. Btxa injection can be considered as an alternative treatment in cases with moderate to low angle deviation (<30-35 PD). Spontaneous resolution can be seen in a small proportion of patients.

CONCLUSION: The infantile esotropia demographic structure and management were found to be consistent with the literature in our study group.

Augmentation with Botulism Toxin A in Large-Angle Sensory Exotropia Surgery - Case Report

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INTRODUCTION: Sensory exotropia from monocular visual loss is advisable to operate only on the eye with poor vision. However, large-angle deviation often required operating on three or four horizontal muscles. And large lateral rectus recessions (>10 mm), or medial rectus resections (> 8 mm) may lead to unacceptable crippling of versions from the tethering effect. One case of large-angle sensory exotropia, operated with intraoperative botulism toxin A for augmentation in monocular recession and resection surgery, was reported.|

METHODS: One twenty years-old female patient, had traumatic brain injury s/p craniectomy six years ago. She had obvious right eye exodeviation since two years ago, and VEP showed impaired bilateral visual conduction pathway with visual acuity 0.05/ 0.2. The preoperative exodeviation was sixty prism diopters by krimsky test and prism cover test on right eye this year.
Operation of RLRRc 10 mm (augmented with botulism toxin A 5 units) + RMRRs 7.5 mm was held on 2017-01-18.|

RESULTS: Post-operative one week: Ortho-slight esotropia in primary position, total limitation in abduction, overaction in left gaze(adduction); Post-operative two-weeks: Ortho in primary position, complete ptosis (od), limitation in abduction (o -1); Post-op 3 wks: Ptosis improved, ortho in primary position, mild limitation in abduction(+1-+2),No obvious over- action in left gaze. Post-op one month: ortho/small angle exotropia in primary position, slight limitation in abduction(+3), No ptosis. Longer follow-up would bereported.

DISCUSSION: Problems associated with botulism include the temporal nature of chemo-denervation, ptosis, diplopia, and possible occlusion amblyopia in children. Headache, edema, bruising, pain, flu-like symptoms were also noted. We used 5 units in 0.1 ml for recessed muscle injection in this surgery; maybe we can try only 5 units/ 0.05 ml for injection to avoid ptosis next time.|

CONCLUSION: Botulism Toxin A maybe helpful for augmentation the effect of monocular recession- resection surgery in large-angle

sensory exotropia. However, preoperative explanation of the side effects would be important.

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The results of, medial rectus recession with Botulinum toxin (BtxA) injection, for surgical treatment of large angle infantile esotropia (ET)

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INTRODUCTION: We aimed to evaluate the results of application of BtxA injection with bimedial rectus recession operation in large angle infantile esotropia cases in this study.

METHODS: The patients who operated with bimedial recession and Btx injection in same session (Group1) , evaluated retrospectively. The results were compared with both the patients who underwent only bimedial recession operation group (Group2) and who underwent only bimedial Btx A injection group (Group3) for final deviation. The patient numberwassimilarwithmatchedageandgender.Groups1st.month,3rdmonthsandfirstyearresultswerecompeared.

RESULTS: Each group were included 12 cases. The patients' mean ages were ranged 6 to 18 months. The preoperative mean deviations were 46 ± 11.25 prism diopters (PD),45.00 ± 12.00 PD, 45,12 ± 11.70 PD with the Krimsky test respectively for group1, group2 and group 3 .

In the first month, the mean deviations were found as -27.5 ± 12.74PD, 14.00 ± 10.74PD, -26.5 ± 14.70PD and in the 3rd. month deviations were found as -14 ± 8.23 PD. 14 ± 10.23 PD,-16 ± 8.50 PD respectively. The first year deviation results found as 4 ± 10.14PD in Group1,14.01 ± 8.24PD in group2 and 30.26 ± 12.35PD in Group3.

DISCUSSION: We tough that MR recession and BtxA injection in same session is more effective than medial rectus recession or bimedial rectus Btx A injection alone for this group. The weakness of the technique is that injection of BtxA prevents the net prediction of the outcome of the operation and prevents early rehabilitation

CONCLUSION: Medial rectus recession with BtxA injection, for surgical treatment of large angle infantile ET

Relation between Early Postoperative Deviation and Long-term Outcome after the Unilateral Lateral Rectus Recession and Medial Rectus Resection Procedure for Adult Exotropia

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INTRODUCTION: This study aimed to evaluate the relationship between early postoperative deviation and long-term outcome after unilateral recession and resection surgery for adult exotropia, and to evaluate exotropic shift after surgery.

METHODS: This was a retroprospective study involving adult patients with exotropia who underwent unilateral recession and resection surgery between 2005 and 2012 and were followed up for at least 2 years. The results were evaluated at 2 years and the final visit. Factors influencing a successful outcome were analyzed. Early postoperative deviation at 1 week was used to evaluate these factors' relationship with long-term outcome. The long-term outcome was classified into 3 groups: successful, acceptable, and poor. Successful outcome was defined as a distance esodeviation </= 8 prism diopters (PD) or exodeviation </= 10 PD.

RESULTS: Forty-two patients were enrolled. The mean age at surgery was 26.4 years (range, 15–49 years). The median follow-up period was 30 months (range, 24–108 months). Successful outcome was found in 81% of patients at 2 years and in 71% at the final visit. Overcorrection at 1 week postoperatively was associated with a successful outcome at 2 years. Initial postoperative alignment between orthotropia and esodeviation of 8 PD had the highest chance of a successful outcome (P=0.002, 95% CI 1.18–4.06, relative risk=2.2). The mean exotropic drift within the first month was 4.7 ± 4.6 PD.

DISCUSSION: Our study represents the largest series of adult patients (>/= 15 years old) who underwent unilateral recession and resection surgery for correction of exotropia. Eighty percent of patients had a successful outcome at 2 years. Most patients developed exotropic drift within the first month after surgery. Patients with initial minimal overcorrection achieved the highest chance of long term success.

CONCLUSION: Initial postoperative deviation can predict long-term successful motor outcome in adult exotropia after surgery. Most patients have exotropic drift at a subsequent follow-up, especially in the first month after surgery.

PO-01

一个 CFEOM 家系脑干 MRI 影像学改变

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目的：收集一个常染色体显性遗传先天性眼外肌纤维化综合征 (Congenital fibrosis of the extraocular muscles，CFEOM) 家系，分析临床表型。应用 MRI 技术，对 CFEOM 家系 TT 部分患者进行眼球动眼神经、外展神经相关组织结构的影像学特征研究 .

方法：CFEOM 家系 TT 患者 8 人，眼科检查及眼位及眼肌检查 : 包括眼位、眼球运动、睑裂大小、提上睑肌肌力、被动牵拉试验及 Bell 氏征等。TT 中患者 3 人(Ⅱ :5, Ⅱ :9, Ⅲ :5), 采用 3.0T 核磁对脑干行全脑、脑干的 MRI 薄层扫描 , 检测动眼神经、外展神经支。

结果：1.CFEOM 家系 TT 临床特征符合 CFEOM1 型。

2.MRI 薄层扫描显示 TT 家系中Ⅱ :5、Ⅱ :9 及Ⅲ :5 的眼动神经核团均显示发育不良，Ⅱ :5 及Ⅲ :5 患者表现动眼神经变细，右侧外展神经缺如。

结论：1. 家系 TT 证明了 CFEOM1 型可以有更多的表现型。

2. 脑干 MRI 薄层扫描结果进一步证实了该家系的病变与颅内脑干神经核团与眼动神经发育异常有关。MRI 检查有助于 CFEOM 的临床诊断和治疗及更好的理解 CFEOM 的病因。

The oculomotor nucleus characteristics of magnetic resonance imaging (MRI) in a Chinese family with CFEOM1

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OBJECTIVE: 1. To report the clinical characteristics of a family with CFEOM1.

2. To investigate the oculomotor nucleus of magnetic resonance imaging (MRI) in the affected individuals.

METHODS: 1. Ophthalmologic examination included corrected visualacuity, force of levator palpebrae superioris,eye movement,ocular position and forced duction testing.

2.This prospective study of imaging on three patients from the family with CFEOM1. Magnetic resonance imaging (MRI) of the ocularmotor nerves at the brainstem was performed following the 3D-TSE sequence.

RESULTS: 1.The genetic trait of this pedigree was autosomal dominant inheritance and met CFEOM1 criterion.

2.Magnetic resonance imaging (MRI) revealed severe hypoplasia of ocular(CN3) in patients(Ⅱ :5, Ⅱ :9, Ⅲ :5) of congenital fibrosis.Absence of the right abducens nerve(CN6) was also noted on two patients(Ⅱ :5, Ⅲ :5).

CONCLUSIONS: 1.We identified a Chinese autosomal dominant inheritance of CFEOM1 family in a family of 12 members including 8 affected individuals in four generations.

2.Imaging of cranial nerves by MRI not only demonstrate pathology of ocularmotor nerves, but also provide much more important information about the embryonic developmental relations between the CNs and their targets EOMs.Direct MRI of CNs is of value for the diagnosis of CFEOM.

PO-02

Panocam 在新生儿重症监护病房床旁早产儿视网膜病变眼底筛查及辅助激光治疗中的应用

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目的：探讨在新生儿重症病房中对早产儿视网膜病变安全可靠的筛查方法及 Panocam 在辅助眼底激光中的应用。

方法：2016 年 3 月至 2016 年 12 月在我院，对新生儿重症病房 (NICU) 收住 254 例重症早产儿进行 panocam 床旁眼底检查，并对筛查资料进行回顾性分析，并利用 panocam 辅助 ROP 视网膜光凝术。

结果：在 237 例完成筛查的受检者中，发现 ROP 患儿 106 例，发病率为 44.72%，超低出生体重儿 (＜ 1000g) 及极小胎龄儿 (≤28 周) 中发病率分别为 73.81% 及 77.05%。21 例需要进行激光或眼内注药术。不同出生体重及胎龄早产儿的 ROP 发生率及需要治疗者比例比较，差异有统计学意义 ($P < 0.01$)。ROP 患儿的孕周和出生体重在所有早产儿中的分布均偏低，且体重和胎龄越低，ROP 发生率及治疗率越高。视网膜光凝术中利用 panocam 辅助治疗，能及时发现激光遗漏区及并发症，提高质量的

准确性及有效性。

结论：出生体重、胎龄均为危重早产儿 ROP 发生的重要因素，使用 Panocam 在 NICU 中进行 ROP 筛查方便、直观、安全，辅助激光光凝，提高治疗的有效性，值得在临床上进一步推广。

Application of Panocam in Screening and Assisted Laser Therapy for Retinopathy of Premature Infants in Neonatal Intensive Care Unit

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OBJECTIVE: To explore the safe and reliable screening method for retinopathy of prematurity in neonatal intensive care unit (NICU) and the application of Panocam in assisted fundus laser.

METHODS: From March 2016 to December 2016 in NICU of Hunan Children's Hospital, a total of 254 patients with severe preterm children meet the screening criteria were panocam bedside fundus examination, and screening data were retrospectively analyzed, and the use of auxiliary panocam ROP retinal photocoagulation.

RESULTS: Of the 237 subjects who completed the screening, 106 patients with ROP were found, with a morbidity rate of 44.72%, incidence of low birth weight infants (<1000g) and very small gestational age (≤28 weeks) Respectively, 73.81% and 77.05%. 21 cases require laser or intraocular injection. The incidence of ROP in different birth weight infants ($\chi2 = 42.058$) and the proportion of need to be treated ($\chi2 = 46.503$) were statistically significant ($P < 0.01$). There was significant difference in the incidence of ROP ($\chi2 = 53.855$) and the proportion of patients who needed treatment ($\chi2 = 20.746$), and the difference was statistically significant ($P < 0.01$). The distribution of gestational age and birth weight in children with ROP was low in all preterm infants, and the lower the body weight and gestational age, the higher the incidence and treatment rate of ROP. Retinal photocoagulation using panocam adjuvant therapy, found that laser photocoagulation left 1 eye, accounting for 5.26%, laser photocoagulation caused by ridge and crest after the local bleeding in 1 eye, accounting for 5.26%, can be found in time laser missing area And complications, improve the quality of the accuracy and effectiveness.

CONCLUSION: Birth weight and gestational age are important factors for the occurrence of ROP in critically ill preterm infants., It is convenient, intuitive, safe, assisted laser photocoagulation to improve the effectiveness of ROP screening in the NICU using Panocam, and it is worth further.

PO-03

我国 36~ 48 月龄学龄前儿童的正常裸眼视力分布：雨花台儿童眼病研究

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目的：描述我国 36~48 月龄儿童正常裸眼视力（UCVA）分布，评估将正常UCVA下限值作为弱视筛查转诊标准时的有效性。

方法：雨花台儿童眼病研究以南京市雨花台区 36~48 月龄儿童为调查对象，采用HOTV视力表行视力检查，同时行屈光度、眼位、眼前节、眼底等其他眼部检查。将无任何眼部异常或明显屈光不正的儿童作为参考人群，分析该人群中 UCVA 的分布情况。将参考人群 UCVA 分布的第 5 百分数定为正常 UCVA 的下限值，以该值作为弱视筛查的转诊标准。

结果：共有 1606 名儿童纳入分析，其中有 791 名符合参考人群标准。在参考人群中，UCVA 分布的第 5、50、95 百分位数分别为 20/40、20/32 和 20/25；UCVA 与年龄呈明显正相关（$p<0.0001$）；早产儿的 UCVA 明显低于足月儿（$p=0.041$）。使用 UCVA 小于等于 20/40 作为转诊标准时，1606 名总人群中有 26.9% 符合此标准，该转诊人群中弱视患儿占总人群弱视患儿的 86% 左右。

结论：我国 36~48 月龄儿童中，当使用 HOTV 视力表检查时，正常 UCVA 的下限为 20/40。将此下限值作为转诊标准时，大部分弱视患儿可被检出。

Normative visual acuity in Chinese preschoolers aged 36 to < 48 months as measured with the linear HOTV chart: the Yuhuatai Pediatric Eye Disease Study

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OBJECTIVE: s To document population-based normative data for uncorrected visual acuity (UCVA) in Chinese preschoolers aged 36 to < 48 months without any sight-affecting abnormalities and to evaluate its effectiveness for vision referral.

METHODS: In a population-based cohort of children in the Yuhuatai Pediatric Eye Disease Study (YPEDS), UCVA was measured by using the linear HOTV chart, followed by other ocular examinations. Reference population was defined as children without ophthalmic

abnormalities or refractive error. Normative UCVA was obtained from the reference population. The UCVA referral cutoff was defined as the lowest 5th percentile of the normative distribution of UCVA.

RESULTS: The analysis cohort consisted of 1606 Chinese preschoolers aged 36 to < 48 months. Among them, a total of 791 children were included in the reference population. The 5th, 50th, and 95th percentiles of the UCVA distribution in the reference population were 20/40, 20/32, and 20/25, respectively. UCVA improved with increasing age ($p < 0.0001$), but worsen if prematurity was presented ($p = 0.041$). Using the 5th percentile UCVA cutoff from the reference population generated referral rates of 26.9% in the general population, and detected more than 86% of amblyopia cases.

CONCLUSIONS: We propose that UCVA no better than 20/40 measured by linear HOTV chart should be a referral cutoff for Chinese preschoolers aged 36 to < 48 months. Most amblyopia cases can be identified with this age-specific and chart-specific UCVA cutoff.

PO-04

儿童眼部蜂窝织炎的临床分析

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目的：探讨儿童眼部蜂窝织炎的临床特点及治疗效果。

方法：回顾性分析河北省儿童医院自 2015 年至 2017 年收治的 50 例眼部蜂窝织炎患儿的临床资料。

结果：50 例患儿中，男性 30 例，女性 20 例；年龄：10 天—8 岁，3 岁以下年龄组患儿多见；第 2 和第 4 季度为高发季节。致病途径以周围组织炎症蔓延最多见。11 例患儿进行了脓肿切开引流并行脓液细菌培养，其中 9 例细菌培养为阳性。致病菌有 3 类：金黄色葡萄球菌最多见（7 例，其中 MRSA 有 3 例），肺炎链球菌 1 例、奴卡氏菌 1 例。治疗以第一代头孢菌素类抗生素静点，局部广谱抗生素滴眼液及眼膏点眼。患儿外周血白细胞计数及血清 C 反应蛋白（CRP）经治疗后明显下降且基本正常。住院天数平均 8 ± 3 天，除 1 例因并发脑膜炎转入重症科继续治疗外，其余患儿均治愈。

结论：儿童眼部蜂窝织炎的发病年龄集中在 3 岁以下，第 2 和第 4 季度为高发季节，鼻窦炎和上呼吸道感染是主要病因。本病可发生严重并发症，抗生素应覆盖葡萄球菌及链球菌，并根据微生物学检查结果调整用药，必要时实行手术切开引流以加快治愈。

Clinical analysis of eye cellulitis in children

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OBJECTIVE: To investigate the clinical characteristics and treatment of children eye cellulitis.

METHODS: Medical records of 50 cases of children with eye cellulitis that were admitted by the children's hospital of Hebei province from 2015 to 2017 were retrospectively analyzed.

RESULTS: In 50 cases, the male in 30 cases ,female in 20 cases;Age: 10 days to 8 years old;See more children under the age of three age groups;high-occurrence season were the second and the fourth quarter.The most common pathogenic pathway to surrounding tissue inflammation spread, other line including blood infection 3 cases, 1 case of ocular trauma complicated with infection, the other 4 cases (8%) patients with no clear history of history of trauma or other parts of the infection.11 cases of the abscess incision drainage of pus parallel bacterial culture, including 9 cases of germiculture positive.The most common pathogenic bacteria has 3 kinds: staphylococcus aureus (7 cases, including MRSA in 3 cases), s. pneumoniae in 1 case, carr's bacteria in 1 case.Treatment with the first generation cephalosporin class of antibiotics static point, broad-spectrum antibiotic eye drops and eye ointment point eye.Children with peripheral white blood cell count, and serum c-reactive protein (CRP) significantly decreased after treatment and basic normal.The average hospitalization days 8 + / - 3 days, except 1 case for concurrent meningitis into intensive treatment, the rest of the children were cured.

CONCLUSION: Concentrated in the onset of children eye cellulitis age 3 years old the following, for season 2 and 4 quarter, sinusitis and upper respiratory tract infection is the main cause.Can happen serious complications of the disease, antibiotics should be covered staphylococcus and streptococcus, and adjust the medication, according to the results of the microbiology examination, when necessary, to speed up the implementation of open surgical drainage treatment.

PO-05

湖北地区 0 ~ 6 岁早产儿屈光度参考值范围的调查分析

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目的：研究湖北地区 0 ~ 6 岁早产儿屈光度的正常参考值范围，为学龄前早产儿屈光异常的临床诊治提供依据。

方法：对 2015 年 8 月至 2017 年 3 月前往武汉大学人民医院眼科常规视力筛查的 1505 名 0 ~ 6 岁无 ROP 早产儿进行睫状肌麻痹后的屈光检查。按照矫正胎龄进行分组，了解双眼球镜及柱镜屈光度的频数分布、P50 参考值和 P25 ~ P75 参考值范围。

结果：（1）0 ~ 0.5 岁早产儿的球镜屈光度参考值范围（P25 ~ P75）为 +1.25 ~ +2.25DS，0.5 岁 ~ 组 +1.25 ~ +2.00DS，1 岁 ~ 组 +1.00 ~ +2.00DS，2 岁 ~ 组 +1.00 ~ +1.75DS，3 岁 ~ 组 +0.75 ~ +1.75DS，4 岁 ~ 组 +0.75 ~ +1.50DS，5 ~ 6 岁组 +0.25 ~ +1.25DS；（2）0 ~ 0.5 岁早产儿 <P75 柱镜屈光度的绝对值参考值范围在 0 ~ 2.25DC，0.5 岁 ~ 组 0 ~ 2.00DC，1 岁 ~ 组 0 ~ 2.00DC，2 岁 ~ 组 0 ~ 1.75DC，3 岁 ~ 组 0 ~ 1.75 DC，4 岁 ~ 组 0 ~ 1.50 DC，5 ~ 6 岁组 0 ~ 1.00 DC；

结论：对于球镜度 <P25 或 >P75、柱镜度 >P75 以及极低出生体重及胎龄 <32w 的早产儿应加强随访

Investigation and analysis on reference value range of refractive in premature infants aged 0 ~ 6 years from Hubei province.

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OBJECTIVE: Discussed premature infants aged 0 ~ 6 years in Hubei areas diopter of normal reference range, for preschool premature ametropia and related studies provide basis for clinical diagnosis and therapy.

METHODS: Cross-sectional study. One thousand five hundred and five premature infants without retinopathy of prematurity (ROP) were collected from August 2015 to March 2017 in Renmin Hospital of Wuhan University. Refraction with cycloplegic retinoscopy was checked. According to the correct gestational age groups. Frequencies，P50 reference and P25 ~ P75 reference ranges of the spherical diopter and cylindrical lens diopter were obtained respectively, and analysis gestational age and birth weight premature infants refractive effect. and analysis the effects of gestational age and birth weight on premature refraction.

RESULTS: (1)Spherical diopter 75% medical reference of premature infants aged 0 to 0.5 range (P25 ~ P75) is + 1.25 ~ + 2.25 DS, 0.5~ age group is + 1.25 ~ + 1.25 DS, 1 ~ age group is + 1.00 ~ + 2.00 DS, 2 ~ age group is + 1.00 ~ + 1.75 DS, 3 ~ age group is + 0.75 ~ + 0.75 DS, 4 ~ age group is + 0.75 ~ + 0.75 DS, 5 ~ 6 age group is + 0.25 ~ + 1.25 DS, the overall coverage ratio is about 49%;

(2)< P75 the absolute value of the column lens dioptre reference range of premature infants aged 0 to 0.5 is 0 ~ 2.25DC, 0.5 ~ age group is 0 ~ 2.00DC,1 ~ age group is 0 ~ 2.00DC, 2 ~ age group is 0 ~ 1.75DC , 3 ~ age group is 0 ~ 1.75 DC, 4 ~ age group is 0 ~ 1.50 DC, 5 ~ 6 age group is 0 ~ 1.00 DC, the overall coverage ratio is up to 54%;

(3)With increasing age, the degree of spherical diopter P50 reference showed a trend of diminishing ,cylindrical lens diopter P50 reference of premature infants aged 0 to 3 descended gradually along with increasing age，and begins to stabilize after the age of 3，is about 0.75 D.

(4) 0 to 1 years old, 3 to 5 years old of very low birth weight (< 1.5 kg) of premature babies, the Spherical diopter of abnormity rate is higher than birth weight > = 1.5 kg of premature infants ($p < 0.05$);0 to 0.5 years old, 1 to 3 years old of gestational age < 32w premature, the Spherical diopter of abnormity rate is higher than premature infants whose gestational age > = 32 w ($p < 0.05$); 0 to 0.5 years old of very low birth weight and gestational age < 32 w premature cylindrical lens diopter degrees of anomaly detection rate is significantly higher than birth weight >=1.5 kg, premature gestational age > = 32 w ($p < 0.05$). 4 to 6 years old of very low birth weight (< 1.5 kg) of premature babies, the cylindrical lens diopter of abnormity rate is higher than birth weight > = 1.5 kg of premature infants ($p < 0.05$); 3 to 4 years old of gestational age < 32w premature, the cylindrical lens diopter of abnormity rate is higher than premature infants whose gestational age > = 32 w ($p < 0.05$); overall comparison of very low birth weight and gestational age < 32 w premature spherical diopter and cylindrical lens diopter degrees of anomaly detection rate was significantly higher than birth weight >=1.5 kg, premature gestational age > = 32 w ($p < 0.01$).

CONCLUSIONS: The premature infants whose spherical diopter <P25 or > P75 and cylindrical lens diopter > P75 and birth weight were extremely low and gestational age < 32weeks should strengthen follow-up. and further take timely treatment after diagnosis, in order to prevent the occurrence of amblyopia. Separate build premature refractive reference range for prevention and early diagnosis and treatment of premature refractive error monitoring is very important.

PO-06

全麻下荧光眼底血管造影（FFA）在早产儿视网膜病变诊疗中的应用

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目的：探讨全麻下荧光眼底血管造影术（FFA）在早产儿视网膜病变（ROP）诊断和治疗中的应用前景。

方法：回顾性分析在北京儿童医院眼科完成荧光眼底血管造影检查的早产儿视网膜病变病例 10 例 19 只眼，分析其对诊断和治疗的指导作用。

结果：本组早产儿视网膜病变病例 10 例 19 眼，其中男性 6 例 12 只眼，女性 4 例 7 只眼；初次就诊时矫正胎龄 35~42w，平均 39.5w，出生体重 950~2000g，平均 1525g。ROP 分期 7 例为 II 区 3 期（+），3 例为后部急进型 ROP（AP-ROP）。1 例 2 只眼分别于抗 VEGF 治疗前，治疗后 1 个月和二次抗 VEGF 治疗后 1 个月共完成 3 次 FFA 检查；2 例 4 只眼分别于激光治疗前和激光治疗后 1 个月共完成 2 次 FFA 检查；6 例 12 只眼于抗 VEGF 治疗后 1.5 个月完成 FFA 检查 1 次，1 例 1 只眼激光治疗后 1 个月 FFA 检查发现激光不足和无血管区，后继二次补充光凝治疗取得良好效果。所有病例未观察的不良反应。

结论：全麻下荧光眼底血管造影术（FFA）应用于早产儿安全，少有不良反应。对早产儿视网膜病变的诊断准确，应用于治疗前后随访则可以指导和改进治疗方案，达到精准治疗的目的，其应用前景还值得进一步探讨。

The clinical application of fluorescence fundus angiography (FFA) under the general anesthesia in retinopathy of premature

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OBJECTIVE: To investigate the anesthesia of fluorescence fundus angiography (FFA) in the diagnosis and treatment of premature retinopathy (ROP) application prospect.

METHODS: A retrospective analysis in the Beijing children's hospital of ophthalmology of fluorescence fundus angiography premature retinopathy cases of 10 cases of 19 eyes, analyze its guidelines for the diagnosis and treatment.

RESULTS: 10 cases of premature retinopathy cases 19 eyes, 6 cases of 12 eyes of male, 4 cases 7 eyes of female;See a doctor for the first time correct gestational age 35 to 42 w, an average of 39.5 w, birth weight of 950 ~ 2000 g, 1525 g on average.ROP stage 7 cases for II 3 (+), 3 cases for acute posterior ROP (AP-ROP).1 case 2 eyes on anti VEGF before the treatment, 1 month after treatment and secondary anti VEGF after treatment 3 times a month were done FFA examination;2 cases of 4 eyes in laser treatment before and after laser treatment 2 times a month were done FFA examination;6 cases (12 eyes really 1.5 months to complete the FFA examination after treatment, 1 case 1 1 month after laser treatment of laser and FFA examination revealed avascular area, the subsequent secondary supplementary photocoagulation treatment achieved good results.Among them, 1 case of anti VEGF FFA examination 1 month after treatment and found the retinal vascularization, the subsequent line secondary anti VEGF treatment achieved good results.All cases had no adverse reactions.

CONCLUSION: Under general anesthesia fluorescence fundus angiography (FFA) applied in the premature infant safety, less adverse reaction.Accurate diagnosis of retinopathy of premature babies, applied to follow-up before and after the treatment can guide and improve the treatment plan, achieve the purpose of accurate treatment intervention, its application prospect is also up for further discussion.

PO-07

41 例婴幼儿 sturger-weber 综合征眼压以及数字化视网膜照相

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目的：观察婴幼儿 sturger-weber 综合征眼压以及眼底特征。

方法：回顾性连续选择北京儿童医院 2015 年 4 月至 2016 年 5 月 sturger-weber 综合征患儿 41 例，单侧颜面血管瘤 37 例、双侧颜面血管瘤 2 例，混合（一侧太田痣，一侧血管瘤）2 例。应用 i-care 眼压计测量眼压，(Retcam) 检查眼底。

结果：41 例患儿 82 眼中，13 人神经科检查确诊颅内血管瘤 2 人。发现青光眼 8 例，9 眼，年龄 1-36 月，中位年龄 6 月，均表现为角膜不同程度混浊，扩大，眼压偏高，C/D 扩大。其中两眼合并脉络膜血管瘤。

结论：婴幼儿 sturger-weber 综合征皮肤大部分为单侧颜面病变，少部分表现为双侧，以及特殊类型（一侧血管瘤，对侧太田痣），可合并颅内血管瘤病变。3 岁以内婴幼儿青光眼发生率为 20.93%，青光眼组眼压均值 16.56mmHg。

Intraocular pressure and digital retinal photography in 41 infants with Sturger-Weber syndrome

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OBJECTIVE: To observe the intraocular pressure and ocular fundus characteristics of sturger-weber syndrome(SWS) in infants and young children.

PO-08

20 例儿童重症眶蜂窝织炎病例的临床分析

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目的：探讨重症儿童眶蜂窝织炎的病因、临床特征及治疗，为临床诊断和治疗提供依据。

方法：对 2011.02-2017.02 本院眼科、耳鼻喉科、ICU 及小儿科收治的 20 例重症眶蜂窝织炎患儿的临床资料进行回顾性研究。

结果：患儿发病年龄从 0 岁 2 个月到 9 岁不等，平均 3 岁 5 个月。男性 13 例，女性 7 例。平均病程 17 天。冬春季节发病者 14 例，占全部患儿的 70%。急性鼻窦炎 8 例，上呼吸道感染 4 例，泪囊炎 2 例，急性泪腺炎 2 例，睑腺炎 2 例，皮样囊肿破裂 1 例，眼睑皮肤裂伤感染 1 例。金葡菌感染者 8 例，化脓性链球菌感染者 1 例，铜绿假单胞菌感染者 1 例，真菌培养阳性 1 例，细菌培养未发育者 9 例。18 例患儿行鼻窦联合眼眶 CT，2 例行眼眶 MRI，1 例行眼部 B 超检查。3 例患儿行手术治疗，其余均保守治疗。全部患儿均得到较好疗效，1 个月内痊愈。

结论：儿童眼眶蜂窝织炎发病年龄集中在 5 岁以下，尤 3 岁以下幼儿。上呼吸道感染和鼻窦炎是主要病因。影像学检查可以明确病变范围和程度、显示脓肿形成及部位，提示切开排脓的手术时机等，宜及早进行。抗生素使用应覆盖葡萄球菌和链球菌，并及时根据病因和微生物学检查调整用药。及时手术可加快治愈并减少复发。

Clinical analysis of 20 cases children’s severe orbital cellulitis

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AIM: To observe the etiological factor ,clinical manifestation and clinical efficacy of comprehensive treatment for severe children’s orbital cellulitis,and to improve its diagnostic method and provide its theoretical basis.

METHODS: Twenty medical records of pediatrics admitted to the Department of Ophthalmology,ENT,ICU or Pediatrics with a diagnosis of severe childrens’ orbital cellulitis form February 2011 to February 2017 were retrospectively studied.

RESULTS: Children aged from 2 months to 9 years old,and the average age of onset was 3 years and 5 months. There were 13 males and 7 females.The average duration of hospitalization is 17 days. Fourteen cases of onset in winter and spring, accounted for 70% of all the children.With the onset of acute sinusitis in 8 cases, upper respiratory tract infection in 4 cases, dacryocystitis in 2 cases, inflammation of lacrimal gland in 2 cases , hordeolum in 2 cases,dermoid cyst rupture in 1 case , and eyelid skin laceration infection in 1 case. Blood,abscess or secretions bacterial culture results showed: Staphylococcus aureus infection in 8 cases,Streptococcus pyogenes infection in 1 case，Pseudomonas aeruginosa in 1 case,fungal culture was positive in 1 case,while 9 cases of bacterial culture was not developed.18 cases of children underwent sinus and orbital CT.Two cases underwent orbital MRI.One case underwent B-type ultrasound tomography. Three cases underwent surgical treatment,while the remaining underwent conservative treatment.All patients were successfully healed within 1 month without severe complication.

CONCLUSION: Children with severe orbital cellulitis are commonly under five years old, especially under three. Upper respiratory infection and sinusitis are the most important predisposing factors. CT scan should be done as soon as possible,for it is of great value to diagnosis as well as differential diagnosis. According to the etioligocal examination，antibiotic therapy should have coverage against staphylococcal and streptococcal species,and adjust to different predisposing diseases and microbiology.A timely performed surgery can shorten the course of infection and decrease recurrence.

PO-09

扫视、追踪训练对低视力儿童阅读速度的影响

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目的：评价扫视、追踪视觉训练对已有助视器的低视力儿童阅读速度的影响。

方法：总共有9位有助视器使用经验的低视力儿童，先测量其阅读速度，再进行一系列的扫视、追踪视觉训练和阅读训练，2 个月后 , 当他们完成训练时 , 再次测量对相同文章的阅读速度 , 并比较训练前后患儿阅读速度的变化。

结果：在训练前后患儿阅读四号字的速度差别有统计学意义（p=0.003）；在训练前后患儿阅读小五号字的速度差别有统计学意义（p=0.002）。

结论：视觉训练和阅读训练对提高低视力儿童的阅读速度是有效的 , 在临床低视力康复工作中 , 我们不应仅仅只把助视器给低视力儿童 , 同时还应进行适当的视觉训练和阅读训练来提高患儿的阅读速度 , 这对于正在学习阶段的儿童尤为重要。

Saccade and pursuit vision training and its effects on reading speed in low vision children

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OBJECTIVE: To evaluate the effects of saccade and pursuit vision training on reading speed in low vision children who had owned low vision aids before.

METHODS: Nine low vision children with experience in using low vision aids for reading were recruited. Reading speed was measured then the subjects were instructed in a number of specific vision training protocols, which they were required to do at home/school daily. 2 months later, when they had finished the vision training successfully,reading speeds on the same passages of text were then re-measured.

RESULTS: There were statistically significant differences in reading speed before and after vision training: both for N_8 print size reading material (p=0.002)and for N_{10} print size reading material(p=0.003).

CONCLUSION: Saccade and pursuit vision training is effective in improving reading speed. As practitioner, we should not just give low vision aids to the visually impaired children, but rather we should instruct them how to do vision training to improve reading speed, a factor important in the educational process.

PO-10

鼻内窥镜下经鼻鼻腔泪囊吻合术联合置管治疗儿童外伤性泪道阻塞的临床观察

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目的：探讨经鼻鼻腔泪囊吻合术联合置管治疗儿童外伤性泪道阻塞的安全性以及手术效果。

方法：回顾性分析经鼻 DCR 联合置管手术的儿童外伤性泪道阻塞病例 10 例 10 只眼，采用咬骨钳联合电动骨钻磨骨方式制作骨窗，均放置泪道扩张管，常规于术后 1 个月全麻下行吻合口探查，术后 3 个月全麻下取管，同时做吻合口探查，随访观察至术后 1 年，分别就手术困难程度，手术并发症以及术后早期（1~3 个月）和术后 1 年的疗效进行比较分析。

结果：本组儿童外伤性泪道阻塞病例 10 例 10 只眼，其中男性 8 例 8 只眼，女性 2 例 2 只眼；年龄 6~14 岁，平均年龄 9.5 岁，外伤组手术时间均超过 50 分钟，有 2 例超过 90 分钟；而同期骨性鼻泪管异常对照组手术时长均小于 40 分钟；术后 3 个月吻合口处肉芽增生 4 只眼，经全麻下泪道扩张管取出及吻合口探查术中处理后 2 只眼完全闭锁不通，余者均保持通畅；疗效方面，无效 2 只眼，泪道冲洗部分返流 2 只眼，其余 6 只眼均通畅，1 只眼仍有轻度溢泪症状，治愈率 60%，有效率 80%，失败率 20%。

结论：鼻内窥镜下经鼻 DCR 联合置管手术治疗儿童外伤性泪道阻塞安全有效，置管提高了手术成功率但增加了儿童全麻手术机会，有待长期观察。

Clinical observation of nasal endoscopic dacryocystorhinostomy combined with catheterization for traumatic lacrimal duct obstruction in children

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OBJECTIVE: To investigate the safety and surgical results of traumatic lacrimal duct obstruction in children treated with nasal cavity and dacryocystorhinostomy.

METHODS: Ten cases of 10 cases of 10 cases of children with traumatic lacrimal duct obstruction were retrospectively analyzed. The bones were used to make bone window, and the lacrimal duct dilatation tube was placed. Routine in 1 month after general anesthesia anastomosis exploration, 3 months after surgery under general anesthesia to remove the lacrimal duct dilatation tube, while anastomotic exploration, follow-up observation to 1 year after surgery, respectively, the degree of difficulty in surgery, surgery complicated As well as early postoperative (1 to 3 months) and 1 year after the efficacy of a comparative analysis.

RESULTS: There were 10 cases of 10 cases of traumatic lacrimal duct obstruction in children, including 8 cases of male and 2 cases of female 2 eyes. The age was 6 years and the average age was 9.5 years. The operation time and trauma group were evaluated More than 50 minutes, 2 cases of operation time more than 90 minutes; while the same period of the nasolacrimal nasolacrimal catheter control group were less than 40 minutes of surgery; 3 months after the anastomosis of granulation hyperplasia in 4 eyes, Expansion of the tube to take out and anastomosis after surgery in 2 eyes completely blocked barrier, the remaining were kept smooth; efficacy, invalid 2 eyes, lacrimal rinse part of the reflow of 2 eyes, the remaining 6 eyes are smooth, 1 Eyes are still mild diarrhea symptoms, the cure rate of 60%, 80% efficiency, failure rate of 20%.

CONCLUSION: Endoscopic nasal DCR combined with catheterization is safe and effective in the treatment of traumatic lacrimal

duct obstruction in children. The catheterization rate increases the success rate of operation and increases the chance of general anesthesia in children. It needs long-term observation.

PO-11

Teller 视敏锐度卡在大样本婴幼儿视力检测中的应用分析

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目的：通过 Teller 视敏锐度卡对 0-3 岁婴幼儿视力检测，探讨先天性白内障术后和（或）合并眼底病变术后、斜视术前、先天性上睑下垂术前 , 不同疾病的非正常眼及对侧眼视力发育情况。

方法：对 2014 年 1 月 ~ 2016 年 12 月在北京同仁医院眼科门诊就诊的患者，由同一名检测者，使用 Teller 视敏锐度卡检测 3 个月至 3 岁患儿 511 例 1022 只眼。每 2 个月龄为一组，共分为 20 组进行单眼及双眼视力检测 , 并对其检测结果进行分析评估 . 对月龄间的差异性比较，采用 Friedman M 方法检验，非正常眼和对侧眼间的差异比较，采用 Wilcoxon 符号秩和检验，视力水平与月龄的关系采用 Spearman 秩相关分析。以 P≤0.05 为差异有统计学意义。

结果：婴幼儿视力发育与月龄增加存在正相关，视力随着婴幼儿年龄增长而上升，而非正常眼视力远远低于对侧眼视力。不同疾病的视力之间的差异具有统计学意义。

结论：Teller 视敏锐度卡是一种安全、有效地婴幼儿视力评估检测系统 , 可以对眼部先天性疾患的婴幼儿低视力进行早期干预并制定跟踪治疗方案 .

Evaluation and analysis of Teller Acuity Cards on large sample infants

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OBJECTIVE: To explore infants after congenital cataract surgery and (or) combined with retinopathy, before strabismus surgery, congenital ptosis, abnormal eyes and contralateral eye vision development, by estimating infants in the first three years of life for binocular and monocular grating visual acuity (VA) obtained with Vistech-Teller Acuity Cards (TAC).

METHODS: TAC was used to estimate grating acuity in 511 patients(1022 eyes),from 3month to 3 years old, all of whom were included in this study from Out-patient Department. Beijing Tongren Hospital in 2014-2016. Tests were conducted by one highly trained tester. They were divided into 20 groups form 3 to 36month according to their age sequence, and every 2 months for one group. The visual acuity was recorded and results were analyzed statistically. The difference between the ages was compared using the Friedman M method. The difference between the abnormal eyes and the contralateral eyes was compared using the Wilcoxon symbol rank sum test. The relationship between visual acuity and age was analyzed by Spearman rank correlation analysis. To $P \leq 0.05$ for the difference was statistically significant.

RESULTS: The infant and children vision development have a positive correlation with increasing age. Abnormal eye vision is far lower than the contralateral eye vision. Differences in visual acuity between different diseases were statistically significant.

CONCLUSION: Teller visual acuity cards are feasible and reliable visual assessment system on 3months to 3 years old children. TAC can be developed for early intervention and treatment programs on congenital eye disorders in infants with low vision.

PO-12

二种手术方式治疗原发性先天性青光眼的效果比较

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目的：比较小梁切开术和小梁切开联合小梁切除术治疗原发性先天性青光眼的效果。

方法：收集 2014.1.1 至 2016.5.1 在北京儿童医院眼科诊断原发性先天性青光眼且未进行抗青光眼手术治疗者 32 例 53 眼，进行回顾性分析。所有患儿均由同一术者实施手术，根据手术方式分为小梁切开术组和小梁切开联合小梁切除术组。分别测量两组病例术前眼压，术后 6 个月眼压，术后 1 年眼压，比较二种术式降眼压效果。采用 SPSS 统计学软件进行数据分析，均数比较采用秩和检验，率的比较采取 χ^2 检验。

结果：二种术式术前、术后 6 月、术后 1 年平均眼压比较无统计学差异。小梁切开组术后 6 个月和术后 1 年平均眼压均较术前下降，有显著统计学差异，联合手术组术后 6 个月平均眼压较术前下降，无统计学差异，术后 1 年平均眼压较术前下降有显著统计学差异。比较二种术式的手术成功率，在术后 6 个月时，无统计学差异，在术后 1 年时，有统计学差异，小梁切开术高于联合手术。

结论：原发性先天性青光眼首次手术时小梁切开术和联合手术均有效，远期效果小梁切开术好于小梁切除术。

The effect of two kinds of surgical treatment of primary congenital glaucoma

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OBJECTIVE: Comparison of trabeculotomy and trabeculotomy combined trabeculectomy for the treatment of primary congenital glaucoma.

METHOD: Gathering clinical data of 53 eyes from a total of 32 patients diagnosed as primary congenital glaucoma in Beijing Children's Hospital from Jan 1, 2014 to May 1, 2016, retrospective analyses were made .All patients were operated with trabeculotomy or trabeculotomy combined trabeculectomy by the same surgeon. Measuring the two groups of preoperative and postoperative 6 months and one year of intraocular pressure (Finland ICARE handheld springback tonometer).And comparing the indicators in the preoperative and postoperative differences and the changes of between the two groups. Rank and inspection ,chi-square test were used to analyze the data.

RESULTS: Average preoperative intraocular pressure of two kinds of operative methods was no statistical difference, postoperative average intraocular pressure was also no statistical difference in 6 months and 1 year.In trabeculotomy group , average intraocular pressure after 6 months and 1 year were lower to preoperative average intraocular pressure, and there are statistically significant differences.In the trabeculotomy combined trabeculectomy group, average intraocular pressure after 6 months were lower to preoperative average intraocular pressure, but there were no statistically significant differences. Average intraocular pressure after 1 year were lower to preoperative average intraocular pressure, and there were statistically significant differences.Comparing two kinds of surgical success rate,in 6 months after surgery, was no statistical difference, but in 1 year after surgery, was statistically significant difference, trabeculotomy is higher than the trabeculotomy combined trabeculectomy.

CONCLUSION: The first surgery of primary congenital glaucoma was effective. The better effectiveness was obtained from trabeculotomy than trabeculotomy combined trabeculectomy.

PO-13

夜戴型角膜塑型镜控制青少年近视有效性及安全性的临床观察

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目的：通过临床案例观察夜戴型角膜塑型镜控制青少年近视的有效性及安全性。

方法：选取我院 200 例（379 眼）夜间配戴角膜塑形镜控制近视的青少年，不论男女，近视球镜度数为 -1.00D~--6.00D，柱镜度数 0~-2.00D；观察并对比戴镜 1D、1W、2W、1M、3M、6M、1Y、2Y、5Y 后患者白天裸眼视力、屈光度、角膜曲率、角膜上皮、角膜中央厚度、角膜内皮细胞计数、眼轴变化情况。

结果：戴镜 1M 后 84.7%（321 眼）白天裸眼视力可达 1.0，3M 后 92.9%（352 眼）可达 1.0；屈光度、角膜曲率戴镜 1D 后较戴镜前下降，差异有统计学意义（$P<0.05$），3M后达稳定状态；出现眼痛者9.23%（35眼），角膜上皮点染率66.0%（250眼），均为浅层染色，及时经人工泪液、角膜营养剂等处理均可消除，无角膜感染、角膜穿孔等不良事件；戴镜前后角膜中央厚度、角膜内皮细胞计数无统计学差异；戴镜后 6M、1Y、2Y、5Y 眼轴有增长，但差异无统计学意义（$P>0.05$）。

结论：我院夜戴型角膜塑型镜控制青少年近视发展有效且安全。规范验配、定期复查、及时处理、预防性保护角膜是戴镜安全的保障。

PO-14

儿童玻璃体积血的临床特征分析

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目的：分析接受玻璃体手术治疗的儿童玻璃体积血的临床特征、病因以及预后。

方法：回顾性分析我院 2013 年 1 月 1 日至 2014 年 12 月 31 日之间收治的年龄在 18 岁以下入院诊断为玻璃体积血且接受玻璃体手术治疗的儿童临床资料。收集的资料包括性别、年龄、玻璃积血的原因、手术治疗的方式、视力和随访时间等。

结果：共 57 例患儿 62 眼入选，其中男性 43 例（占 75.4%），手术时平均年龄 7.5 ± 5.6 岁（4 月 -18 岁）。随访时间 11.1 ± 4.8 月（6-24 月）。最为常见的原因是眼球穿通伤、FEVR 和视网膜劈裂。5 例患者为双眼玻璃体积血，双眼患者的病因为 FEVR、Terson 和早产儿视网膜病变。玻切术后眼内填充物为膨胀气体的有 10 例 10 眼（占 16.1%）、硅油的有 20 例 20 眼（占 32.3%）以及 BSS 的有 27 例 32 眼（占 51.6%）。有 34 例患儿能够配合视力检查（占 59.6%），术前最佳矫正视力为 NLP-0.2，术后最佳矫正视力为 NLP-0.6，其中 22 人视力有提高（占 64.7%）。

结论：导致儿童玻璃体积血的原因多种多样。对于较为致密的玻璃体积血尽早手术治疗有助于远期视功能的恢复。

Clinical characteristics in children underwent vitrectomy due to vitreous hemorrhage

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PURPOSE: To investigate the clinical characteristics, causes, and outcomes of vitreous hemorrhage in children underwent vitrectomy.

METHODS: Charts children less than 18 years old who presented with vitreous hemorrhage and underwent vitrectomy between Jan 1st, 2013 and Dec 31th, 2014 were reviewed. Data collected included demographics, cause of vitreous hemorrhage, management details, visual acuity and follow-ups.

RESULTS: 62 eyes of 57 children were included in this study. There were 43 male patients (75.4%). The mean age was 7.5 ± 5.6 years old (range 4 months -18 years old). The most common causes included trauma, familial exudative vitreoretinopathy and retinoschisis. Five patients had bilateral vitreous hemorrhage and the causes were exudative vitreoretinopathy, terson syndrome and retinopathy of prematurity. The intraocular tamponade included expansion gas in 10 eyes of 10 cases (16.1%), silicone oil in 20 eyes of 20 cases (32.3%), and BSS in 32 eyes in 27 cases (51.6%). 34 children (59.6%) were able to complete visual inspection. The preoperative BCVA was NLP-0.2, while postoperative BCVA was NLP-0.6. 22 of them (64.7%) had improvement in visual acuity. The follow-up time was 11.1 ± 4.8 months (range 6-24 months).

CONCLUSIONS: Pediatric vitreous hemorrhage has a diverse etiology. Trauma had been the most common cause in our series. Early vitrectomy is beneficial to the recovery of visual function in dense vitreous hemorrhage patient.

PO-15

23 例白化病儿童的眼部临床表现及遗传学研究

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目的：评价 23 例白化病儿童的视力、双眼视功能及眼球震颤的类型及基因突变分析。

方法：对 23 例患儿行裂隙灯检测及眼底彩色眼底照相，对其中 10 例行 Y-II 眼震仪检测。对其中 16 例行国际标准视力表检测。对 14 例患者进行 Inami 同视机、Titmus 立体视检查。使用二代测序对 TYR 基因、P 基因、TYRP-l 基因、MATP 基因、GPR143 基因进行检测。

结果：21 例患儿皮肤毛发脱色素，23 例均具有白公样眼底，23 例均具有眼球震颤；裸眼视力均值为 0.12 ± 0.06, 矫正视力均值 0.13 ± 0.09；13 例行 Inami 同视机检测发现具有 I 级视功能 11 例（84.62%），具有 II 视功能 2 例（15.38%），具有 III 级视功能 1 例（7.69%）。单纯冲动型眼球震颤 9 例（45%）、单纯钟摆型眼球震颤 9 例（45%）。TYR 基因突变 12 例，P 基因突变 4 例，TYRP- I 基因突变 1 例，MATP 基因突变 2 例，GPR143 基因突变 1 例。

结论：白化病儿童视力及双眼视功能损伤严重，眼震多为水平冲动和钟摆样，可以使用红外视频眼震仪对白化病儿童的震频、振幅、震强及波形精确的量化检测。OCA1 型白化病是最常见的类型。

Analysis about the clinical manifestation and gene mutation in 23 albinsim children

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OJECTIVE: To evaluate the gene classify of albinism children and whose visual acuity and nystagmus.

METHODS: The study included 23 cases(46eyes) were examined by slit lamp and fundus photography. 10cases(20eyes) were examined by Y-II videonystagmography and 4Cases(8eyes) were examined by EYELINK videonystagmography among the 23 Cases. 16Cases(32eyes) were examined by international standard visual acuity chart . 14cases(28eyes) underwent Inami synoptophore and Titumus Stereoacuity Test. TYR gene, P gene, TYRP - l gene ,MATP gene and GPR143 genes by high-throughput sequencing.

RESULTS: 21 cases were found skin and hair depigmentation, 23 cases who have fundus of abinoism and nystagmus symptoms. All albinism children had nystagmus syndrome in 23cases. The visual acuity of naked eyes were 0.12 ± 0.06 and corrected visual acuity were 0.13 ± 0.09. There was no difference between corrected vision and naked ones in statistics. 13cases（84.62%）had binocular simultaneous perception, 2 cases（15.38%）had binocular fusion, 1 case（7.69%）had stereopsis by Inami synoptophore. 4 cases（30.77%）can distinguish stereoscopic animals and 3cases（23.08%）can distinguish stereoscopic circls by Titmus test. Pure jerk wavelet of 9cases(45%) and pure pendular wavelet 9cases(45%) by videonystagmography. TYR gene mutations in 12 cases, 4 cases were P gene mutations, TYRP - I gene mutations in 1 case, MATP gene mutation in 2 cases, 1 case GPR143 gene mutations.

CONCLUSIONS: Albinsim children's eyesight and binocular visual function were damaged seriously. Jerk and pendulum wavelets

of nystagmus were mostly, Videonystagmography can record the wavelet accurately and play role in diagnosis of albinism children's nystagmus and treatment. OCA1 gene mutation is the most common type.

PO-16

两种术式治疗先天性中重度上睑下垂的疗效分析

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目的：比较自体阔筋膜额肌悬吊术与额肌瓣悬吊术治疗先天性中重度上睑下垂的治疗效果。

方法：回顾性分析 2010~2017 年在我院就诊手术的 72 例先天性中重度上睑下垂患者，其中行自体阔筋膜额肌悬吊术 28 例 49 眼，额肌瓣悬吊术 44 例 54 眼。术后随访观察上睑下垂矫正效果、重睑形成情况、眼睑闭合情况、上睑迟落情况、并发症及术后复发情况。

结果：术后随访 3 个月 ~7 年。自体阔筋膜额肌悬吊术与额肌瓣悬吊术两组术后 3 个月 MRD 分别为 3.67 ± 0.82mm、3.82 ± 0.43mm，差异无统计学意义。两组术后双重睑形成良好，眼睑弧度满意。自体阔筋膜额肌悬吊术与额肌瓣悬吊术两组术后 3 个月眼睑闭合不全分别为 1.1 ± 0.2 mm、1.6 ± 0.3mm，差异有统计学意义。

结论：自体阔筋膜额肌悬吊术与额肌瓣悬吊术均能有效治疗先天性中重度上睑下垂，可根据患者的条件及意愿选择相关术式。

Evaluation of two different surgical techniques for the correction of moderate and severe congenital blepharoptosis: Frontalis Suspension Using Autogenous Fascia Lata versus Frontalis Muscle Flap Suspension

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OBJECTIVE: To compare the functional and cosmetic outcomes of frontalis suspension using autogenous fascia lata versus frontalis muscle flap suspension in the correction of moderate and severe congenital blepharoptosis.

METHODS: A retrospective analysis was conducted of 72 patients affected by moderate or severe congenital blepharoptosis who underwent surgical correction at the first affliated hospital of Nanjing Medical University between January 2010 and January 2017. Patients were divided into two groups according to the surgical technique used: frontalis suspension using autogenous fascia lata group and frontalis muscle flap suspension group. Frontalis suspension using autogenous fascia lata was performed in 28 patients (49 eyelids) , frontalis muscle flap suspension was performed in 44 patients (54 eyelids). The results were compared between these two groups. All the patients underwent contemporaneous double-eyelid surgery. The postoperative MRD, eyelid height asymmetry, lid contour symmetry, lagophthalmos, corneal exposure, ptosis recurrence and other complications were followed up and evaluated for each group.

RESULTS: The follow-up period varied from 3 months to 7 years. At postoperative three months, MRD with the mean of 3.82 ± 0.43mm seems to be better in frontalis muscle flap suspension group than in the frontalis suspension using autogenous fascia lata group (mean MRD of 3.67 ± 0.82mm), but the difference is not statistically signifcant. All the patients, having presented with bilateral or unilateral blepharoptosis, had good correction of ptosis, with equal palpebral apertures and symmetrical contour. The lagophthalmos with the mean of 1.1 ± 0.2 mm is better in the frontalis suspension using autogenous fascia lata group than in the frontalis muscle flap suspension group (mean of 1.6 ± 0.3mm) at postoperative three months, the difference is statistically significant. No grave complications were noted during follow-up.

CONCLUSIONS: Either frontalis muscle flap suspension or frontalis suspension using autogenous fascia lata is an effective technique for the management of moderate and severe blepharoptosis. The results demonstrated substantial aesthetic and functional improvement and very low complication rates.

PO-17

经结膜无缝线 24G 静脉留置针穿刺在 Coats 病外引流视网膜下液中的应用

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目的：探讨 24G OPTIVA® 静脉留置针在治疗 Coats 病所致的球形渗出性视网膜脱离（ERD）术中外引流视网膜下液（SRF）的应用。

方法：将连续 13 例 Coats 病所致球形 ERD 患者纳入本研究。使用 24G OPTIVA® 静脉留置针经结膜直接穿刺引流 SRF，后根据病情进行视网膜激光光凝术，玻璃体切除术，或抗VEGF治疗。收集患者的年龄、术前与术后视力、外引流SRF操作时间，引流数量，术中及术后并发症，并在术后 1 日和 1 月进行眼底照相。

结果：13 例患者中女性 2 例，男性 11 例，平均年龄 4.2 ± 2.7 岁。所有病例均成功进行外引流。平均 SRF 引流时间 63.5 ± 16.9 秒。除了 1 例出现局限的视网膜下出血外无其他术中及术后并发症。

结论：使用 24G OPTIVA® 静脉留置针经结膜穿刺法对 Coats 病所致球形渗出性视网膜脱离患者中进行外引流视网膜下液的操作是安全、有效的。

Modified technique of transconjunctival and sutureless external drainage of subretinal fluid with 24G I.V. catheter in Coats' disease

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PURPOSE: To present external drainage of subretinal flui(SRF) in bullous exudative retinal detachment (ERD) caused by Coats' disease with 24G Optiva® I.V catheter.

METHODS: Thirteen consecutive eyes with bullous ERD caused by Coats' disease were enrolled. SRF drainage was accomplished with trans-conjunctival scleral incision with 24G Optiva® catheter followed by laser treatment, vitrectomy or anti-VEGF treatment as needed. Data on age, indications, preoperative and postoperative visual acuity, number of drainage times, drainage duration, complications, and fundoscopy at 1-day and 1-month were collected.

RESULTS: There were two females and eleven males with a mean age of 4.2 ± 2.7 years old. Successful drainage was achieved in all cases. Mean time of SRF drainage procedure was 63.5 ± 16.9 seconds. Except for one case of localized subretinal hemorrhage, no other complications were noted.

CONCLUSIONS: External drainage of subretinal fluid in Coats disease with 24G Optiva® I.V. catheter is safe, efficient and useful.

PO-18

23 例儿童中枢性视力障碍临床分析

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目的：总结儿童中枢性视力障碍临床特点。

方法：收集 2013 年 1 月至 2016 年 8 月就诊于山东省立医院眼科中心的确诊为中枢性视力障碍的患儿 23 例，对其临床特点进行分析。

结果：（1）一般情况：共纳入患儿 23 例，其中男性 12 例，女 11 例。患儿年龄分布在 2-9 岁。（2）首发症状：23 例患儿中首发症状为斜视、视力差、视物歪头。（3）出生史及发育状况：23 例患儿中，早产儿占 17 例，出生时低体重儿为 3 例，出生后曾住保温箱患儿为 3 例。患儿出生时脑缺氧患儿 8 例。16 例患儿表现为不同程度的发育迟缓、智力低下，6 例患儿有不同程度的脑瘫病史。（4）视力：23 例患儿中可配合检查视力者为 10 例，均低于正常同龄儿童。（5）影像学检查：23 例患儿中，13 例患儿可配合颅脑核磁共振检查，12 例患儿存在异常。（6）屈光状态：21 例患儿屈光资料完整，复性远视散光最为常见。（7）眼位检查：23 例患儿中，20 例患儿存在眼位异常。（8）眼部前节检查及眼底检查：23 例患儿中，1 例患儿存在相对传入性瞳孔障碍，4 例患儿杯盘比异常，4 例患儿视盘颞侧颜色稍淡。

结论：儿童中枢性视力障碍的患儿应及早诊治，提高中枢性视力障碍患儿生活质量。

23 cases of clinical analysis of central visual impairment in children

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OBJECTIVE: To summarize the clinical characteristics of central visual impairment in children.

METHODS: Collect 23 cases of children conformed as central visual impairment in Shandong Provincial Hospital from January 2013 to August 2016 and analyze clinical characters.

RESULTS: (1) General condition: These cases included 23 cases, 12 males, 11 females, aged 2-9 years. (2) The first symptoms: In 23 cases, the first symptoms including strabismus, photophobia, poor visual acuity, tilted. (3) Birth history and Development history: 23 cases of children, preterm children accounted for 17 cases, 3 cases are low birth weight children. After birth, children living in the incubator for 3 cases. 8 cases of children born with varying degrees of cerebral hypoxia history, 16 cases of children showed varying degrees of developmental delay, mental retardation. 6 cases with varying degrees of cerebral palsy. (4) Vision: 10 cases of children can take vision test, lower

than the same age children. (5) Imaging examination: 13 cases of children can take the brain MRI examination, 12 cases show abnormalities. (6) Refractive status: 21 cases refractive data are complete, compound hyperopia astigmatism is the most common. (7) Eye position examination: 23 cases of children, 20 cases of children are with abnormal eye position. (8) Eye former section and fundus examination: In 23 cases, 1 case of children is with relative afferent pupillary disorder (RAPD), 4 cases with bigger cup-disc ratio, 4 cases temporal optic disc color slightly lighter.

CONCLUSION: Central visual impairment should be early diagnosis and treatment, and more attention should be focused on children visual status, aiming to improve the life quality of patients with central visual impairment.

PO-19

先天性瞳孔 - 虹膜 - 晶状体纤维血管膜的诊断及手术治疗

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目的：报告先天性瞳孔 - 虹膜 - 晶状体纤维血管膜的临床和病理表现及手术效果。

方法：回顾性、系列病例分析。14 例单眼先天性瞳孔 - 虹膜 - 晶状体纤维血管膜患儿，行瞳孔区纤维血管膜切除及瞳孔成形术。检查术前、术后 3 月瞳孔大小、位置以及双眼的屈光状态。切除的组织进行病理检查。

结果：14 例中男、女各 7 例，年龄（3.68 ± 2.67）岁，右眼 8 例，左眼 6 例。纤维血管膜位于瞳孔缘 100-120° ，一侧衬于对应瞳孔缘扇形分布的虹膜内面，局部虹膜纹理异常，瞳孔变形、并向纤维血管膜一侧移位；另一侧与晶状体前囊膜紧紧粘连，晶状体均透明。患眼瞳孔明显小于对侧，与对侧眼比较屈光状态为中或高度远视，并有弱视。行纤维血管膜与晶状体前囊膜分离及瞳孔区纤维血管膜切除后，瞳孔可扩大至约 3mm, 散瞳后 4-5mm。病理检查为纤维及血管组织。

结论：正确诊断先天性瞳孔 - 虹膜 - 晶状体纤维血管膜十分重要，这种瞳孔区纤维血管膜阻塞瞳孔、严重影响视功能发育。及时手术切除是进行视功能恢复的前提。

Diagnose and surgical removal of congenital pupillary-iris-lens membrane

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OBJECTIVE: To report the clinical feature and pathological changes of congenital pupillary-iris-lens membrane, and the effects of surgical removal.

METHODS: Retrospective series study. 14 cases of monocular and congenital pupil-iris-lens membrane were dignosed and removed with pupil reforming. The diameter, shape, and location of pupil were recorded and the refractive conditions were examined, pre- and postoperatively. The pathological changes of the membranes were observed under light microscope through paraffin section with HE staining.

RESULTS: In 14 cases, 7 cases were male and the other 7 cases were female. 8 cases were in right eye, 6 cases were in left eye. Average age was (3.68 ± 2.67) year old. The membranes were located at the pupillary margin, and the ranges were about 100-120° . One side of the membrane was lining in the iris at the corresponding pupilly margin in fan-shape, the focal texture of iris was abnormal. The pupils were distorted, and were draged to the direction of the membranes. The other side the membrane was tight adhesion to the lens capsule. All crystalline lenses were transparent. The pupil of the trouble eye was smaller obviously than the opposite side, and the refraction condition in the trouble eye was moderate or high hyperopia with amblyopia. After removal of the membrane, the pupil expanded to approximately 3mm, and to 4-5mm with mydriasis. Pathology inspection for the membrane showed the fibrous and blood vessel changes.

CONCLUSION: The correct diagnosis of congenital pupillary- iris -lens membrane is extremely important. This kind of pupillary membrane blocks pupil, and may influence the development of the eye. The surgical removal of it in time is the necessary for rehabilitation of visual function.

PO-20

早产儿视网膜病变玻璃体腔雷珠单抗注射术后不良反应的观察

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目的：观察早产儿视网膜病变雷珠单抗玻璃体腔注射术后的局部及全身的不良反应。

方法：回顾性观察 2015/01/01 ~ 2017/4/14 在我院接受单纯玻璃体腔注射的早产儿，观察早产儿玻璃体腔注药术后眼部以及全身出现的不良反应。

结果：1、共观察接受治疗的患儿 141 例，均采用表面麻醉。男 91 人，女 50 人。平均出生胎龄：29.85 ± 2.96 周；平均出生体重：1.41 ± 0.499kg。

2、眼部不良反应：术后第一天角膜上皮大面积脱落 30 例；角膜水肿 102 例，术后角膜溃疡一例。术后出现眼内玻璃体局限性混浊 3 例，其中 2 例按照眼内炎处理，最终一例进行了玻璃体切除手术，另外一例行玻璃体腔抗生素注药术后，病变范围无明显扩大。另外一例在术后第 7 天出现透明样浑浊，术后 1 个月时混浊加重。1 例病例术后出现了原有视网膜血管消失，术后一个月后血管逐渐长出，并再次发生早产儿视网膜病变。注药术后视网膜增殖膜持续加重 3 例。3、48/141 人术后出现了明显的血氧波动，X 线检查发现肺纹理增粗，补充诊断为支气管肺发育不全。

结论：由于早产儿的发育特殊性，玻璃体腔注药术会引起局部以及全身的不良反应，值得我们去进一步观察。

Observation of adverse reactions after Lucentis intravitreal injection of retinopathy of prematurity

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PURPOSE: To observe the local and systemic adverse reactions of intravitreal injection of lucentis in retinopathy of prematurity.

METHODS: a retrospective study of ROP patients, during 2015/01/01 ~ 2017/4/14 in our hospital, who received Lucentis intravitreal injection, eye and systemic adverse reactions are observed after intravitreal injection.

RESULTS: 1. A total of 141 children were treated with topical anesthesia, Male 91, female, 50. The average gestational age was 29.85 ± 2.96 weeks, and the average birth weight was about 1.41 ± 0.499kg.

2.the eye adverse reactions: the first day after surgery, a large area of corneal epithelial detachment in 30 cases; corneal edema in 102 cases, one case of corneal ulcer after operation. Postoperative intraocular limitation of vitreous body opacity in 3 cases, 2 cases were diagnosed as endophthalmitis, underwent intravitreal antibiotic injection. a finally one case do the vitrectomy. one case appeared hyaline opacity on the7 day after operation, and the turbidity increased at 1 months. 1 cases of retinal vascular disappeared after operation. One month after operation, the blood vessels gradually developed, and retinopathy of prematurity occurred again.

3 cases of retinal proliferative membrane have a rapid growth after drug injection. 3. 48/141 after the operation, there was a significant change in blood oxygen, X-ray examination found that lung markings increased, supplemented by the diagnosis of bronchopulmonary dysplasia.

CONCLUSION: Due to the development future of premature infants, The local and systemic adverse reactions after Lucnetis intravitreal injection worth further observation.

PO-21

新生儿颅内水肿与视乳头水肿的相关性观察

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目的：观察新生儿颅内水肿与眼底出现视乳头水肿的相关性

方法：回顾性观察 2015/01/01-2017/04/10，我院 NICU,PICU 以及心脏中心诊断为新神儿颅内水肿并接受眼科会诊的患儿，散瞳后行 Retcam III 眼底检查。观察视乳头的形态颜色以及视网膜的变化情况。

结果：1、共 51 名诊断为新生儿颅内水肿的患儿接受了眼科会诊。CT 检查均显示不同程度的脑水肿。平均出生胎龄：32.83 ± 6.08 周，发病时矫正胎龄 36.1 ± 3.83。2、所有患儿行 Retcam III 眼底检查均未出现视乳头水肿无视乳头充血的现象，4 例巨细胞病毒感染患儿，出现了视网膜血管炎的表现，1 例 HSV 患儿，出现了严重的病毒性视网膜坏死视网膜表现，但是视乳头未出现水肿。其中 6 例发现 rop，均未发现视乳头水肿，1 例接受了玻璃体腔雷珠单抗注射，其余 5 例自愈。

结论：颅内水肿会引起颅内高压，造成视神经周围鞘间隙内压增高压迫视神经纤维。筛板后视神经组织压高于筛板前，引起视神经纤维轴浆流，回流和静脉回流障碍，引起视神经水肿。新生儿颅内水肿，颅内增高的压力可以通过未闭合的囟门缓解，我院观察的诊断为新生儿颅内水肿病例中，均未出现视神经水肿。

The correlation between neonatal intracranial edema and optic disc edema

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PURPOSE: To study the correlation between neonatal intracranial edema and the appearance of optic papilla edema

METHODS: a retrospective observation of 2015/01/01-2017/04/10, PICU and NICU and Neonatal heart center in our hospital, diagnosed as Neonatal intracranial edema and accept ophthalmic consultation with mydriatic fundus examination by Retcam III. Observe the shape and color of the optic papilla.

RESULTS: 1. A total of 51 patients diagnosed as Neonatal intracranial edema received ophthalmic consultation, including 46 intracranial infection,3 cases of Neonatal hypoxic ischemic encephalopathy, a car accident, Epileptic seizure of 1 infants. CT examination showed varying degrees of brain edema. The average gestational age was 32.83 ± 6.08 weeks, and the corrected gestational age was 36.1 ± 3.83. 2. All patients underwent Retcam III fundus examination with mydriatic, there was no visible papillary edema. There were 4 cases of cytomegalovirus infection in children with retinal vasculitis, HSV in 1 cases of children, there has been a serious performance of the retinal necrosis of the retina, but no edema of the optic papilla. Among them, 6 cases of ROP were found, and none of the patients were found with optic papilla edema. In the treatment, 1 cases received intravitreal injection of the Lucentis and the other 5 cases were cured by self-healing.

CONCLUSION: Intracranial edema can cause intracranial hypertension, which can increase the pressure in the space around the optic nerve sheath, central blood pressure higher than the post laminar optic nerve tissue prelaminar, cause optic nerve fiber pulp flow, reflux and venous reflux disorder, cause optic nerve edema. But the newborn brain edema caused by increased intracranial pressure, can alleviate some of the intracranial hypertension by not-closed fontanelle. In our hospital, we found that there were no optic nerve edema in the diagnosis of neonatal intracranial edema.

PO-22

多学科合作进行胎儿期眼部发育异常诊断 —附 3 例报告

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目的：先天性眼部发育异常是一组罕见疾病，对视功能及眼外观有明显影响，且多无有效解决方案，给儿童成长带来很大困扰。本文探讨了多学科合作进行胎儿眼部异常早期评估及处理的价值与方案。

方法：在孕妇孕期常规体检第 20-24 周，使用彩色多普勒超声诊断仪进行胎儿畸形筛查。一旦发现胎儿可疑存在先天异常，给予进一步相关检查，如三维彩色多普勒超声检查及核磁检查，并进行妇产科、超声科、小儿眼科、小儿外科等多学科会诊。对异常或畸形程度、影响进行评估，对可以进行产前手术干预者进行胎儿手术处理。

结果：自本院开展多学科合作胎儿畸形会诊后，共有 3 例胎儿被诊断为眼部畸形。其中 2 例诊断为单眼先天性小眼球合并同侧面部畸形，多学科会诊建议引产。例 3 为孕 25 周胎儿，疑诊右眼晶状体密度高，孕 31 周多学科会诊确诊先天性白内障，建议孕妇排查宫内感染，密切监测胎儿各项指标，生后尽早小儿眼科就诊，明确眼部畸形情况，及时手术治疗。

结论：产前超声和核磁检查，有助于发现胎儿先天异常包括眼部异常。联合多学科会诊模式可以对胎儿预后作出综合评估，为孕妇家庭终止或继续妊娠提出更合理的建议，也为未来胎儿期可行的手术治疗奠定了基础，具有重要的临床意义。

Prenatal multidisciplinary consultation for diagnosis of fetal eye abnormalities: report of 3 cases

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OBJECTIVE: Fetal eye abnormality is a group of rare diseases, which has significant impact and is always hard to treat. These kinds of diseases make the future life of children difficult. The purpose of this article is to summarize the experience of prenatal multidisciplinary consultation, and to explore the mode suitable for early diagnosis and treatment of fetal eye abnormalities.

METHODS: During the 20th week of routine physical examination, the color Doppler ultrasonography was used to screen the fetal abnormalities. Once the fetus is suspected to have congenital anomalies, to give further checks, such as three-dimensional color Doppler ultrasound and nuclear magnetic resonance imaging. Multidisciplinary consultation center, including obstetrics, ultrasound, pediatric ophthalmology, pediatric surgery and other departments, assess the degree of malformations and gives advice.

RESULTS: Multidisciplinary consultation center diagnosed 3 cases of fetal eye abnormalities. Of which 2 cases were diagnosed microphthalmia with the same side of the facial deformity. Patients chose induced labor with center's suggestion. Case 3 was suspected right eye lens opacity at 25 weeks of gestation. Multidisciplinary consultation center diagnosed congenital cataract at 31 weeks of gestation and recommended the patient to check intrauterine infection. We also recommended her to screen the child eye examinations when the child was born.

CONCLUSION: Prenatal ultrasound and MRI show clinical value for diagnosis of fetal abnormalities, including abnormalities of eyes. Prenatal multidisciplinary consultation can make comprehensive multidisciplinary assessment of fetal prognosis and improve the diagnosis and treatment of fetal structural malformations.

PO-23

粘多糖贮积病Ⅵ型继发青光眼眼部表现

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目的：观察粘多粘多糖贮积病Ⅵ型继发青光眼眼部表现。

方法：粘多糖贮积病Ⅵ型继发青光眼患者 1 例，男，7 岁。观察其 OCT,pentacam，Lenster 及眼压的特点。

结果：OCT：双眼房角开放，前房深度正常；双眼视神经纤维层薄，黄斑区未见明显异常。Pentacam: 角膜曲率右眼：K1：38.3D；K2：40.2D；左眼：K1:38.6D;K2:41.5D。角膜厚度：右眼：9mm 范围内颞侧最薄 433 微米，鼻侧最厚 596 微米；左眼：9mm 范围内下方最薄 460 微米，上方最厚 590 微米；厚度变化表现为连续性变化。Lenster: 角膜曲率：右眼：K1:37.94D；K2：40.73D；左眼：K1:38.97D；K2：40.73D。角膜厚度右眼 545 微米；左眼 549 微米；眼压：应用 Icare 回弹式眼压计选择角膜中心区进行测量和非接触眼压计测量眼压具有较好一致性。

结论：OCT 显示房角和视神经的情况；Pentacam 可以更全面观察角膜厚度，对眼压测量选择提供依据。

Ocular manifestations of secondary glaucoma of mucopolysaccharidosis

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OBJECTIVE: To observe the ocular manifestation of secondary glaucoma of mucopolysaccharidosis.

METHODS: The chaeacteristics of OCT,Pentacam,Lenster and IOP was observed.

RESULTS: OCT:anteriro chamber angle was open;RNFL was thin.Pentacam:cornea curvature was flat;change of cornea thickness was continuous.Lenster:corneal curvature was flat.IOP:there are no difference between ICare and noncontact IOP.

CONCLUSIONS: OCT can be used to observe the anterior chamber and RNFL;Pentacam can be used to observe change of cornea thickess.

PO-24

儿童上睑下垂个性化手术治疗

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目的：探讨额肌腱膜悬吊术，提上睑肌缩短术与上穹窿联合筋膜鞘悬吊术在治疗儿童上睑下垂的疗效

方法：回顾分析 2015 年 1 月－ 2017 年 3 月在我院住院行上睑下垂手术矫治患儿资料 501 例 657 眼，年龄 2 岁 10 月－ 17 岁，其中额肌腱膜悬吊术 366 例 490 眼，提上睑肌缩短术 103 例 130 眼，上穹窿联合筋膜鞘悬吊术（CFS）32 例 37 眼，追踪观察 3 月至 26 月，比较 3 种术式的正矫率及并发症

结果：3 种术式治疗儿童中轻度上睑下垂疗效相比无统计学差异（$p > 0.05$），术后 3 月以上额肌腱膜悬吊术睑闭合不全发生率明显高于另二种术式；上穹窿联合筋膜鞘悬吊术（CFS），额肌腱膜悬吊术治疗重度上睑下垂的正矫率高于提上睑肌缩短术（$p < 0.05$），CFS 悬吊术具有更少并发症。

结论：儿童上睑下垂矫治主张个性化手术设计，额肌腱膜悬吊术是儿童上睑下垂的主流术式，但睑闭合不全发生率高，对贝尔氏征阴性，重度及复发性上睑下垂病例上穹窿联合筋膜鞘（CFS）手术是很好补充，但儿童 CFS 悬吊术远期疗效有待进一步观察。

The personalized surgical treatment of ptosis for Children

Yang Hui-Ling
From the department of ophthalmology Hunan Children's Hospital

OBJECTIVE: To study cinical observation of frontal muscle aponeurosis suspension and levator muscle resection and conjoint fascial sheath suspension(CFS),for children's ptosis.

METHODS: Retrospective study, 501 cases（657 eyes）included in the study，2 to 17 years old，during January 2015 - March 2017 hospitalized in our department.366 cases（490eyes）were treated by frontal muscle aponeurosis suspension，103 cases（130 eyes）were treated by levator muscle resection,32 cases (37 eyes）were treated by conjoint fascial sheath suspension(CFS)，followed up 3 months to 26 months. The normalization rates and the complications of the three operations were analyzed.

RESULT: The three operations appeared no significant difference on the normalization rate for moderate congenital ptosis (P>0.05), more than 3 month after the frontal muscle aponeurosis suspension,patients with eyelid closure insufficiency was significantly higher

than the other two kinds of operation.While the normalization rate of frontal muscle aponeurosis suspension and conjoint fascial sheath suspension(CFS) on severe congenital ptosis was significantly higher than that of levator muscle resection (P<0.05). Less complication was happened in the CSF suspension group than others.

CONCLUSION: Children's ptosis advocates personalized surgical design,the frontal muscle aponeurosis suspension is one of the main surgery in children's ptosis,but high incidence of eyelid closure insufficiency,Joint fascial sheath (CFS) surgery is a very good supplement treatment for patients with the bell's sign negative,severe or recurrent ptosis,but forward curative effect in children were treated by CFS suspension remains to be seen.

PO-25

观察两种不同方式的上斜肌减弱术矫正伴上斜肌功能亢进斜视的疗效

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目的：观察两种不同方式的上斜肌减弱术矫正伴上斜肌功能亢进斜视的疗效

方法：本组 27 例患者，复诊资料完整，术前上斜肌功能亢进 +2 以上，无双眼单视功能或双眼单视功能较差者，经眼底照相均存在内旋斜视。随访时间：术后 6~24 个月。复诊资料完整，术前上斜肌功能亢进 +2 以上，无双眼单视功能或双眼 单视功能较差者，经眼底照相均存在内旋斜视。随访时间：术后 6~24 个月。上斜肌延长组 14 例，其中外斜 A 征 3 例，内斜 A 征 4 例，Helveston 综合征 7 例

结果：两种手术方式在 A 征的矫正量上差异无统计学意义（P ＞ 0.05）

本组 27 例，术前有 9 例患者具有双眼单视功能；术后有 11 例患者具有融合功能，仍无立体视。

结论：①上斜肌延长术和上斜肌后徙术均可有效的矫正伴有上斜肌功能亢进的 A 征，两种手术 方式在 A 征的矫正量上无明显差异。

②上斜肌延长术和上斜肌后徙术均可有效矫正由上斜肌功能亢进引起的内旋转斜视，两种手术方式在内旋转斜视量的矫正上无明显差异，术后效果稳定，未出现回退现象。手术前后患者内旋转度数存在不一致现象。

Analysis of the effect of two different methods of superior oblique muscle surgery for correction

Sujiangliu

Eye hospital in hebei province

OBJECTIVE: to observe the two different ways of superior oblique muscle abate corrective operation with oblique muscle function on the curative effect of strabismus methods: 27 patients, complete follow-up data, preoperative oblique muscle function + 2 above, unique eye single visual function or eyes visual function poor, exist within the fundus camera rotation strabismus.Postoperative follow-up time: 6 ~ 24 months.Complete follow-up data, preoperative oblique muscle function + 2 above, unique eye single visual function or eyes visual function poor, exist within the fundus camera rotation strabismus.Postoperative follow-up time: 6 ~ 24 months.14 cases of superior oblique muscle formation, in which the external oblique A 3 cases of oblique A sign in 4 cases, Helveston syndrome 7 cases results: two surgical procedure on A correct amount of difference has no statistical significance (P > 0.05) in 27 cases, 9 patients with preoperative binocular single visual function;Postoperative function of 11 patients with fusion, still no stereopsis.

CONCLUSION: (1) on the oblique muscle YanChangShu and superior oblique muscle after operation can be effective corrective with oblique muscle function on A character, two kinds of operation method in A, there is no obvious difference of the amount of correction.(2) on the oblique muscle YanChangShu and superior oblique muscle after operation can be effectively corrected by superior oblique muscle function hyperfunction caused by rotation in strabismus, two kinds of operation method, there is no obvious difference of rotation amount of strabismus correction and postoperative effect is stable, not back.Before and after surgery in patients with rotation degrees exist inconsistent phenomenon.

PO-26

改良的部分额肌瓣悬吊术矫正儿童重度上睑下垂疗效观察

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目的：探讨采用改良部分额肌瓣悬吊术矫正儿童重度度上睑下垂的疗效。

方法：2014 年 1 月至 2016 年 12 月我院眼科采用改良部分额肌瓣悬吊术矫正重度度上睑下垂儿童患者 27 例。男 17 例，女 10 例。单眼上睑下垂 16 例，双眼 9 例。术中自重睑线切开皮肤及皮下组织，剪除切口下轮匝肌宽约 3mm，暴露睑板，于

切口上缘中央皮下行隧道切口，潜行钝性分离至眉弓处，宽约 1cm，于眉弓处钳夹额肌组织，钝性分离额肌宽约 5mm，长约 8-10mm，三点固定额肌瓣于睑板，观察并调节缝线位置至上睑高度及弧度满意，对位缝合切口。术后随访时间 1 ~ 26 个月，平均 15 个月。

结果：术后治愈率 87%，患者满意度 95%。无 1 例发生眉弓血肿、上穹隆脱垂、睑缘成角畸形、上睑内翻外翻、伤口裂开等并发症；早期均存在眼睑闭合不全，但通常 <3mm，尚未见发生暴露性角膜炎；术后早期均有上睑迟滞，大多于术后 3-6 月逐渐减轻；因术中未加强抬高眼睑，目前观察尚未出现远期欠矫。

结论：改良的额肌瓣悬吊术能够很好地矫正重度上睑下垂，创伤小，损伤轻，术中出血少，局部肿胀轻，并发症少；需要的额肌的长度更小，术中无需加强抬高眼睑，效果稳定；该术式操作更简单，易于学习。

The clinical observation of modified partial frontalis muscle flap suspension for correction of severe blepharoptosis

Cheng Ming, Sun Qiang

Daping ophthalmologic hospital of The Third Military Medical University

OBJECTIVE: To investigate the effect of modified partial frontalis muscle flap suspension for correction of severe blepharoptosis.

METHODS: from January 2014 to December 2016, 57 patients with severe blepharoptosis were treated with modified partial frontalis muscle suspension. The weight of the eyelid line during skin incision and subcutaneous tissue, cut off the incision orbicularis muscle width is about 3mm, exposure to the upper edge of the central tarsal incision, skin down tunnel incision, sneak blunt separation to the brow, the width is about 1cm in the Department of frontal muscle organization eyebrow clamp, blunt dissection of the frontal muscle width is about 5mm long about 8-10mm, three fixed frontal muscle flap in Tarsus, observe and adjust the height and position of first suture eyelid radian satisfaction, sutured the incision. The follow-up time ranged from 1 to 26 months (mean, 15 months).

RESULTS: the cure rate was 87% and the patient satisfaction was 95%. 1 case of eyebrow hematoma, vault prolapse, eyelid deformity, upper eyelid entropion ectropion, wound dehiscence and other complications; there were early hypophasis, but usually <3mm, no exposure keratitis; had upper eyelid hysteresis of early postoperative 3-6 months after operation, mostly to gradually reduce the current; long term observation has not yet appeared undercorrection.

CONCLUSION: the frontalis muscle suspension surgery improved well for severe blepharoptosis correction; the surgical trauma is small, the amount of muscle injury, less bleeding, swelling of light, less complications; smaller length of frontalis muscle need, need to strengthen the elevation of eyelid surgery, small amount back effect of postoperative stability; the operation is more simple, easy to learn, worthy of promotion.

PO-27

改良的部分提上睑肌缩短术矫正儿童轻中度上睑下垂疗效观察

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第三军医大学大坪医院

目的：探讨采用改良部分提上睑肌缩短术矫正儿童轻中度上睑下垂的疗效。

方法：2014 年 1 月至 2016 年 12 月我院采用改良部分提上睑肌缩短术矫正轻中度上睑下垂患者 21 例。男 13 例，女 8 例。单眼上睑下垂 16 例，双侧 5 例。术中自重睑线切开皮肤及皮下组织，剪除部分轮匝肌暴露睑板；翻开上睑，自中央穹隆结膜下行 1X1mm 隧道切口，埋入小团黑色标记线；复位上睑，见黑色标记线位于提上睑肌下方，于提上睑肌行牵引缝线，分离提上睑肌至黑色标记线完全暴露，并继续分离至提上睑肌长约 7-10mm，三点固定提上睑肌于睑板，剪除多余提上睑肌，对位缝合切口。对照组为同期传统的提上睑肌缩短术矫正上睑下垂患者 11 例。术后随访时间 1 ~ 26 个月，平均 11 个月。

结果：术中截除提上睑肌平均长度：改良组 7.4mm，对照组 15.8mm（P=0.001）。术后改良组与对照组治愈率和满意度无明显差异。术后 1 周改良组眼睑肿胀、眼睑闭合不全、角膜暴露、结膜脱垂、上睑迟滞等并发症较对照组少。

结论：改良的部分提上睑肌缩短术能有效地矫正儿童轻中度上睑下垂，术中无需过多分离、截除提上睑肌，即可达到重睑成形与抬高上睑共同修复的目的，手术创伤小，并发症少。

Clinical observation of modified partial levator palpebrae muscle shortening for correction of mild to moderate blepharoptosis in children

Cheng Ming, Sun Qiang

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OBJECTIVE: To investigate the effect of modified partial levator palpebrae superioris muscle shortening in children with mild to

moderate blepharoptosis.

METHODS: From January 2014 to December 2016, 21 cases of patients with mild to moderate ptosis were treated with modified levator palpebrae muscle shortening. There were 13 males and 8 females, aged from 3 to 14 years, with an average age of 8.4 years. 16 cases of unilateral ptosis, bilateral in 5 cases. Patients with upper eyelid ptosis were located in the upper edge of the pupil, the volume of 1 to 2 mm, 1.5 mm on average, levator muscle strength is more than 3mm, and positive BELL sign. The weight of the eyelid line during skin incision and subcutaneous tissue, cut off the incision orbicularis muscle width is about 3mm, open the upper eyelid, exposed tarsus; since the central conjunctival fornix underwent 1X1mm tunnel incision, into the small group of black mark line; reset the upper eyelid, see the black mark line located below the upper eyelid muscle provided, to put on the eyelid muscle traction suture, separation of levator muscle to the black mark line completely exposed, and continue to separate the levator muscle length of about 7-10mm, three fixed levator muscle in Tarsus, cut off the extra levator muscle, sutured the incision. In the control group, 8 patients with mild to moderate ptosis were treated with traditional surgery of levator palpebrae superioris muscle shortening, a total of 11 patients, including male and female, aged from 4 to 14 years, with an average age of 7.6 years. Two groups of patients were followed up for a period of 1 to 26 months (mean, 11 months).

RESULTS: The intraoperative resection on the average length of eyelid muscle: improved group 7.4mm, control group 17.8mm (P=0.001). In the modified group, 18 cases were cured, and the improvement of the satisfaction rate was 100% in the control group and the control group (n = 3). There were no significant difference in the cure rate and satisfaction between the two groups. The treatment group was cured in 9 cases, and the improvement in the treatment group was satisfactory in 2 cases. Early postoperative improvement group eyelid swelling in 0 cases, incomplete eyelid closure in 3 cases, 0 cases of corneal exposure, conjunctival prolapse in 0 cases, 0 cases of upper eyelid lag, control group, 9 cases of eyelid swelling hypophasis in 8 cases, 1 cases, 1 cases of corneal exposure, conjunctival prolapse of upper eyelid in 2 cases were delayed. There were significant differences.

CONCLUSION: The modified part of the levator muscle resection can be well corrected children with mild to moderate ptosis surgery, without too much separation, resection of levator muscle of upper eyelid blepharoplasty, can achieve the common repair and elevation of upper eyelid, surgical trauma, less complications.

PO-28

泪道探通治疗婴幼儿泪囊囊肿 161 例疗效分析

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目的：分析单纯泪道探通对婴幼儿泪囊囊肿的疗效，探讨婴幼儿泪囊囊肿治疗方案的选择。

方法：2014 年 1 月至 2016 年 12 月在我科门诊诊断泪囊囊肿的患儿 161 例 169 眼，年龄 1 周至 26 月，其中合并急性感染的 16 眼。表麻下使用 6 号或 7 号探通针头，自上泪小管入路进行泪道探通术，对一次探通不成功或复发患者进行再次探通，最多不超过 2 次，术后均给予妥布霉素眼液点眼 1 周，观察溢泪及分泌物情况，随访 3 月。

结果：伴有急性感染的 16 眼均一次探通成功，不伴感染的 153 眼中，133 眼一次探通成功，12 例二次探通成功，2 例行两次探通均未成功。随访 3 月，失访 27 例 28 眼，占 16.57%。复发 7 例，再次探通成功后随访 3 月 3 例复发。总有效率 96.45%。复发的患者年龄均在 14 月以上。

结论：单纯泪道探通术对新生儿泪囊囊肿疗效好，由有经验的医师操作，避免医源性损伤。临床工作中应总结经验，为患者选择最简单、损伤最小、最大程度上保护泪道生理结构的治疗方案。

The Analysis on the effect of Treatment of Probing of Lacrimal Passage on 161 cases of Infants' Lacrimal sac Mucocele

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OBJECTIVE: To analyze the effect of treatment in pure probing lacrimal passage method on infants' lacrimal sac mucocele and make the discussion on choosing treatment scheme of infants' lacrimal sac mucocele.

METHOD: 161 patients (169 eyes) aging from one week to 26 months went to ophthalmic clinic from January 2014 to December 2016. Among those cases, 16 eyes had acute complicated infection. Treatment of probing of lacrimal passage was engaged from superior lactimal duct by using No. 6 or 7 probing needle through topical anesthetics. We probed again once unsuccessful or patents with recurrence, but no more than twice. Tobramycin eye drops was given for using one week after operation. The condition of epiphora and secretion should be observed and followed for 3 months.

RESULT: 16 eyes got acute infections were probed successfully. Within 153 eyes uninfected, 133 eyes were probed successfully; 12 cases successfully by probing twice; 2 cases failed. Through 3 months following visit, 27 cases (28 eyes) missed, accounting for 16.57%. 7 cases had recurrence. 3 cases had recurrence after being probed again successfully in the time of 3 month-following. The entire RR reached

to 96.45%.

CONCLUSION: The effect of treatment on pure probing lacrimal passage for the infants' lacrimal sac mucocele is effective. It could be managed by experienced doctors to avoid iatrogenic damage. We should summarize experience, providing the easiest, and with minimum damage treatment scheme of protecting natural structure of lacrimal passage for patients to the large extent.

PO-29

2 岁以下单眼重度先天性上睑下垂患儿额肌悬吊（缝线法）术后散光特征及手术效果分析

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目的：评估单眼重度先天性上睑下垂患儿额肌悬吊（缝线法）术后散光特征及手术效果。

方法：回顾性分析 2012 至 2015 年在湖南省儿童医院就诊的 53 名 2 岁以下单眼重度上睑下垂患儿。行额肌悬吊术（缝线法）前后，对所有患儿均进行散瞳验光检查，以此评估患儿屈光状态，尤其是散光的特征。运用 Kaplan-Meier 生存分析方法评估患儿的手术效果及并发症。

结果：1. 术前验光检查示正常眼及下垂眼散光度数分别为 -1.49 ± 0.12D 及 -0.81 ± 0.11D（P<0.05），正常眼及下垂眼中超过 1.50D 的严重散光患儿比例为 12.8% 及 51.3%（P<0.05）。2. 术前、术后 6 个月及术后 1 年验光检查示下垂眼散光度数呈逐渐降低趋势，术前与术后 6 个月比较差异无统计学意义（P>0.05），术前与术后 1 年、术后 6 个月与术后 1 年比较差异有统计学意义（P<0.05）。3. 生存分析示手术成功率在术后 12 个月、18 个月分别为 62.9% 及 33.3%。术后主要并发症为缝线反应、角膜上皮损伤、上睑迟滞、眼睑闭合不全、复发。

结论：额肌悬吊术（缝线法）是一种矫正低龄儿童单眼重度上睑下垂的有效手术方式，可有效降低弱视源性散光的发生。

Astigmatism characteristics and surgical outcomes in children under 2 years with unilateral severe congenital ptosis after frontalis suspension surgery

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PURPOSE: To examine the astigmatism characteristics and surgical outcomes of subjects with unilateral severe congenital ptosis after receiving the frontalis suspension surgery.

METHODS: Single-centre, retrospective review. 53 patients under 2 years old with unilateral severe congenital ptosis attended Ophthalmology Ward, Hunan Children's Hospital from January of 2012 to December of 2015. All of the subjects underwent a detailed refractive examination before and after frontalis suspension surgery in order to assess the refractive error characteristics, in particular the astigmatism status. In addition, we also evaluated the effect of surgery using Kaplan-Meier survival analysis and the common complications after surgery.

RESULTS: 1. The astigmatism value of normal eye and ptotic eye are -1.49 ± 0.12D and -0.81 ± 0.11D before surgery (P<0.05). The ratio of severe astigmatism which is less than -1.50D of normal eye and ptotic eye are 12.8% and 51.3%（P<0.05）. 2. The astigmatism value of ptotic eye pre-surgery, 6 month post-surgery and 1 year post-surgery decreased gradually. There is no statistical difference between pre-surgery group and 6 month post-surgery group (p>0.05).In contrast, the astigmatism value of ptotic eye decreased significantly between pre-surgery and 1 year post-surgery, also between 6 month and 1 year post-surgery (p<0.05). 3. Kaplan-Meier survival analysis showed a success rate of 62.9% at 12 month, 33.3% at 18 month. The main complications include suture reaction, epithelial keratopathy, lid lag, lagophthalmos and recurrence.

CONCLUSION: Frontalis suspension surgery is a kind of effective method in correcting the congenital ptosis with younger children, which could effectively decrease the development of amblyopic astigmatism.

PO-30

Helveston 综合症不同手术方式的选择策略

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目的：探讨临床上以 A 征、DVD、上斜肌功能亢进为特征 Helveston 综合症的手术方式。

方法：回顾 2008 年 2 月至 2015 年 12 月 54 例双眼 Helveston 综合症的患者 , 根据 A 征、DVD 及眼底相内旋的严重程度来选择不同手术方式分为 3 组，手术后分析眼位、A 征、DVD、上斜肌功能和双眼单视功能的结果。

结果：平均随访 2 年。54 例患者手术后眼位正位，7 例患者 II 期行双眼上直肌后徙术。A 征消失 52 例，由术前的 23.58 △ ± 12.12 △ 减少至 5.56 △ ± 6.10 △ 。眼底相内旋较术前 12.50° ± 6.75° ,减少 3.75° ± 2.65° 。DVD25.10 △ ± 7.80 △减少 9.82 △ ± 5.15 △。手术术前术后的 A 征和垂直斜视度有显著差异 P<0.05, 术后 10 例恢复双眼视功能，3 例患者恢复立体视功能。

结论：Helveston综合症的手术包括解决外斜A征，上斜肌亢进和DVD，对于A征和上斜肌亢进上斜肌延长术是有效的方法，根据 A 征上下差异，上斜肌亢进的程度和眼底相内旋的程度来确定延长的量，对具有一定双眼视功能的患者也是行之有效的方法，对于 D V D有效的方法是上直肌大量后徙术。

Selection strategy of different surgical procedures for Helveston syndrome

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OBJECTIVE: To evaluate the surgical strategy of Helveston syndrome which is characterized of A-pattern exotropia,dissociated vertical deviation(DVD), and superior oblique muscleoveraction.

METHODS: Retrospective study of 54 patients from February2008 to December2015who were grouped 3 according to DVDand superior oblique muscle overaction.was done.Different surgical procedures were selected according to the severity of A sign, DVD and the degree of internal rotation.Postopreactivealigment, A-pattern exotropia, DVD, the function of superior oblique muscle and binocular vision function were examined.

RESULTS: The average follow-up is 2 years.54cases becameorthophoric，7 cases were performed bilateral superior rectus muscle recession subsequently. 52 cases of A-pattern were corrected after operation.，from preoperative 23.58PD ± 12.12 P D to 5.56 P D ± 6.10 P D . Internal rotation from 12.50° ± 6.75° reduced to 3.75° ± 2.65° .DVD from 25.10 P D ± 7.80 P D reduced to 9.82 △ P D ± 5.15 P D .A-pattern and vertical strabismus degreeof preoperative and postoperative have distinguished difference(P<0.05).10 cases got binocular vision function，3cases gotstereopsis.

CONCLUSIONS: The operation procedure ofHelveston syndrome is to correct A-pattern exotropia, dissociated vertical deviation, and superior oblique muscleoveraction.Superior oblique muscle extension isa effective treatment for A-pattern exotropia and dissociated vertical deviation.According to the

discrepancy of the deviation between upgaze

and downgaze,internal rotationanduperior oblique muscle overacting degree to ensure the measurement of extension.Superiorrectus muscle recession is helpful for DVD。

PO-31

人工智能深度学习算法用于辅助诊断水平斜视

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目的：研发一种可以协助医师或验光师诊断水平斜视的人工智能工具。

方法：采用 6523 张水平斜视患者的眼部外观彩色图像作为数据源。以此训练基于深层卷积神经网络的图像检测、分割优化模型。每张参与训练的图像数据都由 3 名机器学习工程师和 3 名斜视专业眼科医师进行标注。通过从深度卷积神经网络中提取眼睑、角膜等眼部特征，来训练支持向量机将内斜视和外斜视分类。系统的性能主要是通过准确性，特异性，灵敏度和 ROC 曲线来衡量。

结果：对于外斜视和内斜视的二分类，ROC 曲线下面积（AUC）为 0.93。眼部特征检测模型的准确度为 99.2%，眼睑和角膜分割模型与真实情况的重叠度可达 99.9%。训练线性 SVM 后，最终系统准确性为 89.0，特异性为 97.5%，灵敏度为 70.67%。

结论：人工智能，尤其是以卷积神经网络为代表的深度学习算法，可以用来构建一种辅助诊断工具，帮助医师或验光师判断患者的水平斜视是内斜视还是外斜视。当然，还需要鉴别隐斜视和异常 Kappa 角与小角度水平斜视，才对临床更有价值。这在我们后续的工作中就会涉及。

In artificial intelligence, a deep learning algorithm is used for auxiliary diagnosis of horizontal strabismus.

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OBJECTIVE: To develop artificial intelligence tools which can help doctors and optometrists diagnose horizontal strabismus.

METHODS: An optimized image detection, segmentation model based on deep convolutional neural networks (CNN) is trained by 6523 ocular appearance images of horizontal strabismus patients. All images are labeled by 3 machine learning engineers and 3 professional ophthalmologists majored in strabismus. After eye features of eyelids and cornea are extracted from CNN, a support vector machine (SVM) is trained for classifying esotropia (Eso) and exotropia (Exo) for a strabismus patient. The accuracy, specificity, sensitivity and ROC curve is used to measure the performance of the system.

RESULTS: For classifying Exo and Eso, the area under curve(AUC) of ROC curve is 0.93. The accuracy of eye detection model is 99.2%, and the overlap between model segmented eyelid and cornea and ground truth can be 99.9%. After a linear SVM is trained, the final system accuracy is 89.0% with 97.5% specificity and 70.67% sensitivity.

CONCLUSIONS: Artificial intelligence (AI), especially the deep learning algorithm like back propagation, stochastic gradient descent and support vector machine, which can be used to build an auxiliary diagnostic tool to help doctors and optometrists divide patients with horizontal strabismus into esotropia or exotropia. Of course, it is needed to identify heterophoria, abnormal Kappa angle, and horizontal strabismus with a small angle to be more valuable in clinical. This will be involved in our follow-up work.

PO-32

改良的 Yokoyama 术治疗高度近视固定性内斜视的疗效分析

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目的：评价改良的 Yokoyama 术治疗高度近视固定性内斜视的疗效。

方法：回顾分析 2012 年至 2016 年在我院接受手术治疗的 7 例（10 眼）高度近视固定性内斜视患者的临床资料。A 超测量眼轴长度，眼眶 CT 或 MRI 检查眼球位置及眼外肌走行，术前、术中行被动牵拉试验及记录患者术前术后 9 个诊断眼位。术式为内直肌后徙联合改良 Yokoyama 术。

结果：7 例（10 眼）患者，男 4 例，女 3 例。发病年龄 11 岁 ~ 59 岁，平均 37.1 ± 18.6 岁。平均眼轴长 31.22 ± 2.00mm。眼眶 CT 或 MRI 均提示外直肌颞下移位，上直肌及下直肌向鼻侧移位，眼球内下移位。术前被动牵拉试验均为强阳性。眼位稳定于术后 6 周。眼球运动稳定于术后 1 年。7 例患者术后视力总体较术前提高。2 例双眼发病且同时行双眼手术的患者术后眼位及眼球运动的改善效果显著。2 例双眼发病但只行单眼手术或双眼先后手术的患者术后仍残留内斜，眼球运动改善欠佳。术后随访 2 月 ~ 55 月，未见术后并发症，疗效稳定。

结论：改良 Yokoyama 术治疗高度近视固定性内斜视能获得较好的临床疗效，手术不仅能改善外观和眼球运动，还能恢复视力；双眼发病的患者同时进行双眼手术疗效更佳。

Efficacy analysis of modified Yokoyama surgical treatment for myopic strabismus fixus

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PURPOSE: To evaluate the efficacy of modified Yokoyama surgical procedure for myopic strabismus fixus.

METHODS: Retrospective research of 7 patients (10 eyes) with myopic strabismus fixus who had been operated in our hospital from 2012 to 2016 were documented. The axial length of the patient was measured with A-scan echography. The anatomic variations of eyeball's position and the extraocular muscles were examined by orbital CT scan or MRI. Pre- and intraoperative forced ductions test were used to determine the degree of limitation. The nine diagnostic eye positions were performed before and after operation. The surgical treatment was medial rectus muscle recession combined with modified Yokoyama procedure.

RESULTS: 7 patients (10 eyes) with myopic strabismus fixus, 3 females and 4 males. The age of onset ranged from 11 to 59 years old. The average age was 37.1 ± 18.6 years old. The average axial length was 31.22 ± 2.00mm. CT or MRI examination of the orbit showed that the lateral rectus muscle was shifted to the inferior side, and the superior and inferior rectus muscle were shifted to the nasal side, and the eyeball at downward and inward position. Preoperative forced ductions test showed that all of the patients were strong positive. There were still some changes of eye position in the early stage after operation，as time went on, the eye position could be further improved, and

the eye position was stable at 6 weeks after operation. In the early stage, the eye movement was still not in place or the improvement was not obvious, and the eye movement could be further improved over time, and it was stable after 1 year. Postoperative visual acuity of 7 patients were higher than that before operation. 2 cases with binocular diseases who were accepted binocular surgery simultaneously had significant improvement in eye position and eye movement . Whereas, 2 patients with binocular diseases who only underwent one eye surgery or eyes successively surgeries , they performed partial internal deviation and poor eye movement. Postoperative follow-up period ranged from 2 months to 55 months, averaged 24.0 ± 16.2 months. There was no postoperative complications. The curative effect of all patients were stable.

CONCLUSION: The modified Yokoyama surgery for myopic strabismus fixus can get better clinical efficacy. It can not only improve the appearance of patients, but also restore the vision and improve the eye movement. For those patients who illed with both myopic strabismus fixus, surgery should be carried out on both eyes simultaneously.

PO-33

改良的 Yokoyama 手术治疗高度近视固定性内斜视的疗效分析

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目的：评价改良的 Yokoyama 术治疗高度近视固定性内斜视的疗效。

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结论：改良 Yokoyama 术治疗高度近视固定性内斜视能获得较好的临床疗效，手术不仅能改善外观和眼球运动，还能恢复视力；双眼发病的患者同时进行双眼手术疗效更佳。

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CONCLUSION: The modified Yokoyama surgery for myopic strabismus fixus can get better clinical efficacy. It can not only improve the appearance of patients, but also restore the vision and improve the eye movement. For those patients who illed with both myopic strabismus fixus, surgery should be carried out on both eyes simultaneously.

PO-34

新型菲涅耳棱镜在治疗斜视术后残余角度的有效性研究

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目的：为了研究使用新型菲涅尔棱镜治疗斜视术后残余角度的有效性。

方法：本研究选择了 60 例 3-9 岁的儿童，其术后残留斜视角度范围为 12-30 棱镜屈光度（PD）。第一组（棱镜组）由 38 名佩戴新型菲涅耳棱镜眼镜的患者组成。第二组（对照组）由 22 例接受矫形治疗的患者组成。

结果：在 3 个月内，通过测定眼睛位置、偏差、融合能力、双眼视力和立体视觉评估和分析每组治疗结果。来自棱镜组的 22 名患者恢复正视能力；8 例患者观察到 10 PD 残留内斜视；7 例患者观察到 20-30 例 PD 残留内斜视；1 例患者仍然存在 18 个 PD 外斜视。在对照组中，8 例患者恢复正视能力，1 例患者观察到 10 PD 残留内斜视；10 例患者观察到 20-30PD 残留内斜视；3 例患者观察到 10-14 PD 外斜视。

结论：1）棱镜组的治疗方法帮助 57.9％的患者恢复正视能力，42.1％的患者恢复双眼视觉能力，13.1% 的患者获得高度立体视力。在对照组里，上述比例分别为 36.4％，22.7％和 9.1％；2）在术后早期佩戴新型菲涅尔棱镜治疗斜视手术残余角度的方法可以帮助 57.9％的患者避免再次手术或者帮助在 42.1％的患者中减少其二次手术量。

The effectiveness of treatment of postsurgical residual angle strabismus using modified Fresnel prisms

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PURPOSE: Study the effectiveness of treatment of postsurgical residual angle strabismus using modified Fresnel prisms.

MATERIALS AND METHODS: The study included 60 children aged from 3 to 9 years old suffered from residual angles of strabismus ranged 12 to 30 prism dioptres (PD) after surgery for concomitant esotropy. All children underwent motor and sensory status examination in ten days after the antistrabic surgery. 42 patients had esotropia (undercorrection), and 18 patients had exotropy (hypercorrection). 26 children (43.3%) demonstrated fusia included 6 patients (23,1%) with good enough amplitude. In 34 children (56.7%) simultaneous vision was determined, 26 patients (43.3%) had a monocular vision. All patients were divided into two groups. The first group (prismatic group) consisted of 38 patients who were prescribed to ware prismatic glasses based on modified Fresnel prisms (hard Fresnel prisms with protected relief, welded to eyeglass lens). Such prismatic compensation of residual deviation combined with correction of ametropia (if necessary), promotes continues bifoveal stimulation in conditions of free space. The second (orthoptic) group consisted of 22 children who underwent orthoptic treatment.

RESULTS: The results of treatment in each group were analyzed in 3 months by determination of the eyes position, deviation, fusia ability and its amplitude, evaluation of binocular vision and stereopsis. Orthotropy was achieved in 22 children (57.9%) from the prismatic group. Residual esotropy up to 10 PD was observed in 8 patients (21.1%), 20-30 PD in 7 patients (18.4%). In one child (2.6%) the exotropy of 18 PD remained. In the orthoptic group 8 children (36.4%) had alignment of eyes, residual esotropia of 10 PD was determined in one case (4.5%), 10 children (45.5%) had esotropy 20 -30 PD and 3 patients (13.6%) had exotropy of 10-14 PD. Changes in the sensory status indicated an improvement of binocular function in both groups. Thus, in the prismatic group, fusion ability was restored in 68.4% of patients, and in orthoptic group - in 54.5%. Fusia with normal amplitude (within range of 20-40 PD) was determined in 57.7% and 58.3% of patients in both groups, respectively. Normal binocular vision was restored in 42.1% cases (16 patients) of the prismatic and in 22.7% (5 patients) of the orthoptic group. High stereovision (40-60 sec of arc) was achieved in 5 (13.1%) and 2 (9.1%) patients, respectively.

CONCLUSIONS: 1. The prescription of prismatic correction in case of postsurgical residual angles in the early period (10 days after the surgery) allows to obtain orthotropy in 57.9% cases, normal binocular vision in 42.1% cases, a high acuity of the stereopsis in 13.1% cases. In the case of orthoptic treatment these values are equal to 36.4%, 22.7%, 9.1% cases respectively. 2. Early treatment using prismatic glasses at residual deviation allows to avoid reoperation in 57.9% of cases or to reduce its volume in 42.1% of patients. 3. In the absence of a positive effect in patients with postsurgical residual angle strabismus after 3 months of treatment by prismatic glasses, it is recommended to prescribe orthoptic treatment additionally.

PO-35

外斜视单眼水平直肌手术影响侧转非共同性的临床研究

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目的：探究外斜视单眼不同水平直肌手术（Rc、Rc&Rs 和 Rs）术后侧转非共同性 (LI) 的发生率及其转归特点。

方法：回顾性分析了 2015 年 2 月 -2016 年 8 月于上海新华医院由同一术者行单眼水平直肌手术的外斜视患者的临床资料。术前 1 天和术后 1 周、3-6 月和终末随访时分别采用三棱镜 + 交替遮盖法检查患者视远（6m）和视近（33cm）水平三眼位的斜视度数。采用 SPSS 19.0 软件进行统计分析。

结果：共 99 例符合标准的患者被纳入本研究，男性 : 女性 =53:46。手术年龄为 5-52 岁（平均 10.1 ± 7.9 岁），终末随访时间为 9-18 月 (平均 11.5 ± 2.4 月)。术后不同随访时间 LI 发生率：Rc 组分别为 34.7%、53.1%和 32.7%（终末随访 vs 术后早期，p=0.831），Rc&Rs 组分别为 38.2%、26.5%和 14.7%（终末随访 vs 术后早期，p=0.028），Rs 组分别为 37.5%、50.0%和 31.3%（终末随访 vs 术后早期，p=0.710）。

结论：外斜视不同单眼水平直肌手术术后 LI 转归不同。对可以选择行单眼水平直肌手术的患者，术前应慎重选择术式，以免术后 LI 影响患者知觉和运动功能。

The Influence of Unilateral Horizontal Rectus Surgeries on Lateral Incomitance in Exotropia: A Clinical Research

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OBJECTIVE: To investigate the incidence of lateral incomitance(LI) after different unilateral horizontal rectus surgeries (Rc,Rc&Rs and Rs) and its developmental characteristics over time in exotropia.

METHODS: A retrospective study, from Feb. 2015 to Aug. 2016, all exotropic patients after unilateral horizontal rectus surgeries were operated by one surgeon in Shanghai Xin Hua Hospital. Strabismus degree were recorded at 1 day before surgeries and 1 week, 3-6 months and final follow-up after surgeries respectively, Strabismus degree measurements were obtained at distance (6 M) and near (33cm) fixation in primary position and lateral gaze fixation using prism + alternative cover test(PACT).SPSS 19.0 software was used for the statistical analysis.

RESULTS: A total of 99 exotropic patients who met Inclusion criteria were brought into our study, male: female=53:46, age at surgery was from 5 to 52 years (10.1 ± 7.9 y), the final follow-up visit was 9-18 months (11.5 ± 2.4m).Postoperative incidence of LI at different follow-up time: the incidence of LI in group Rc was 34.7%,53.1%and 32.7% respectively (1 w vs final , p=0.831), group Rc&Rs was 38.2%, 26.5% and 14.7% respectively (1 w vs final , p=0.028), group Rs was 37.5%, 50.0% and 31.3% respectively (1 w vs final , p=0.710).

CONCLUSION: The developmental characteristics of incidence of LI after different unilateral horizontal rectus surgeries in exotropia had distinction .For these patients who are suitable for unilateral horizontal rectus surgeries, it is prudent to choose appropriate surgical method before surgery, in case of influence of LI on sensory and movement function.

PO-36

三种上斜肌减弱术矫正 A 型斜视的疗效评价

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目的：评价三种上斜肌减弱术（上斜肌断腱术、上斜肌悬吊术、上斜肌延长术）矫正 A 型斜视的术后效果

方法：所有患者术前无上斜肌手术史。A征≥10 △。水平斜视≥10 △。无其它眼病史。术后随访≥ 6 个月。患者随机分成 3 组。进行上斜肌减弱术和水平肌斜视矫正术。

结果：本实验共有 24 名患者（10 位男性，14 位女性）。平均年龄为 16.3 ± 8.1 岁（4-36 岁）。8 名患者 (33.33%) 为 A 型内斜视。16 名患者 (66.66%) 为 A 型外斜视。所有患者术前均未进行过水平肌斜视手术。术后平均随访时间为 9.63 ± 3.11 个月（6-13 个月）。通过数据分析，我们发现（1）三种手术方式矫正 A 型斜视无显著性差异。（2）三种手术方式矫正眼底内旋无显著性差异。

结论：（1）这三种上斜肌减弱术均可以有效的矫正 A 型斜视。（2）从病因学和解剖学角度分析，与上斜肌断腱术和上斜肌悬吊术相比，上斜肌延长术更具优势。

The evaluation of three kinds of SO weakening surgeries for A pattern strabismus

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PURPOSE: to evaluate the three kinds of superior oblique weakening surgeries for (SO tenectomy, SO hang-back recession, SO adjustable sutures tendon expander) A pattern strabismus.

METHODS: All the patients were no previous superior oblique muscle surgery; A- pattern of ≥10 △ ; horizontal deviation of ≥10 △ ; no ocular abnormality; follow-up of ≥ 6 months. The patients were randomly divided into the three groups.

RESULTS: These study groups were consisted of 24 patients.10 males and 14 females. Mean age of 16.3 ± 8.1 years at the time of surgery (range 4-36 years). 8 patients (33.33%) had A pattern esotropia and 16 (66.66%) had A-pattern exotropia. No patients had undergone previous horizontal strabismus surgery. Mean duration of postoperative follow-up was 9.63 ± 3.11 months (range, 6-13). Depend on the data, we found (1) there was no statistically significant difference of the correction in A pattern deviation in these three groups. (2) There was no statistically significant difference of the intortion correction in these three groups.

CONCLUSION: (1) these three kinds of superior oblique weakening surgery were all effective to correct A pattern strabismus. (2) Compared with SO tenectomy and SO hang-back recession, adjustable sutures tendon expander could offer more advantages for SOOA correction because of the etiology and anatomy.

PO-37

先天性眼外肌纤维化 3 型患者及发病家系的临床表现、基因筛查及神经影像学研究

王辉

同仁医院

目的：筛查先天性眼外肌纤维化综合征 3 型 (CFEOM3) 散发患者及其家系成员的致病基因、临床表现及神经影像学特点。

方法：对散发先天性眼外肌纤维化综合征 3 型患者及其家庭成员 (7 例散发患者，来自 6 个家庭，确诊 11 例，2 个发病家系) 进行临床表现及眼运动神经核磁检查，采用靶基因捕获的高通量测序技术、PCR 直接测序技术、目标序列捕获测序技术对家系中患者 TUBB3 基因进行突变检测；并对各个家系部分 3 代内直系血亲做同样检查；无法采集样本及检查的家庭成员通过病史进行追溯。

结果：这些患者分型属于 CFEOM3 型；发病家系中的患者也检测出 TUBB3 突变，突变属三种亚型：c.1228G>A，c.1138C>T 和 c. 784C>T。所有这些家庭中未患病者均未检出该突变。这些患者其临床表现除 CFEOM 外，还伴有不同程度的智力差，肌张力低，共济失调以及胸壁发育异常等表现；患者眼运动神经核磁提示眼外肌变细，外展神经和动眼神经有不同程度的变细。

结论：先天性眼外肌纤维化 3 型患者及其家系发病成员出现 TUBB3 基因突变，可能是导致 CFEOM3 家系的主要病因。TUBB3 基因不同位点突变导致患者的临床表现、神经影像学表现有所不同。

Different mutations in TUBB3 gene result in different types of congenital fibrosis of the extraocular muscle type 3(CFEOM3) and malformation of cortical development.

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PURPOSE: to screen the pathogenic genes, clinical manifestations and neuroimaging features of sporadic patients with congenital fibrosis syndrome 3 (CFEOM3) and their family members.

METHODS: study the clinical manifestation and ocular motor nerve MRI of the sporadic patients with congenital fibrosis of extraocular muscle type 3 and their family members (7 sporadic patients from 6 families, a total of 11 patients and 1 suspected case, 8 cases of health, and we found 2 pedigrees), and then captured the target genes by high-throughput sequencing and PCR sequencing. Detect the TUBB3 gene mutant sub-types; and do the same check for their family members; some of the family members who can not get gene samples or do clinical check would get a review of the history.

RESULT: These patients were all belong to CFEOM3; their abnormal family memebers were also detected TUBB3 mutation. The mutation included three subtypes: c.1228G>A (p.Glu410Lys), Glu (glutamic acid, Glu or E) was replaced by lysine (Lysine, Lys or K (c.1138C>T); p.Arg380Cys) or C.784C>T (p.Arg262Cys), leading to arginine (arginine, Arg or R) was replaced by cysteine (Cysteine, Cys or C). The mutation was not detected in the normal individuals of these families. Except of CFEOM, the patients also had different degree of poor intelligence, hypotonia, ataxia, chest wall abnormalities and other performance; the ocular motor nerve MRI showed the patients have extraocular muscle thinning, as well as abducens nerve and oculomotor nerve with different degrees of thinning.

CONCLUSIONS: the TUBB3 gene mutation in patients with congenital fibrosis of extraocular muscle 3 and their family members may be the main cause of CFEOM3. The mutation of TUBB3 gene in different sites leads to different clinical manifestations and neuroim-

aging findings.

PO-38

伴有斜视与眼球震颤的白化病患儿的术后观察

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目的：观察伴有斜视与眼球震颤的白化病患儿术后视功能变化，探讨此类特殊人群的最佳治疗方案。

方法：回顾性病例系列研究。回顾我院手术治疗的伴有斜视与眼球震颤的白化病患儿 11 例，年龄 3 ~ 15 岁，所有患者均确诊为白化病，婴儿型内斜视 2 例，部分调节性内斜视 1 例，共同性外斜视 1 例，有明确中间带的眼球震颤 4 例，无明确中间带的眼球震颤 3 例。婴儿型内斜视采用双眼内直肌后徙术，另两例斜视采用单眼的“退 - 截手术”。有中间带的眼球震颤者采用 Kastenbom 术式，无中间带者则采用四条水平直肌本体感受器切除术。

结果：斜视术后患儿第一眼位正位，内斜视患儿 Titmus 3000”，外斜视患儿术后立体视觉 Titmus80”。眼球震颤患儿代偿头位明显改善，本体感受器切除者震颤幅度及频率改善，患儿双眼视力较术前有所提高。

结论：白化病伴有斜视或眼球震颤时应在充分检查评估后尽早手术，以改善患儿的视觉质量。

The outcomes of surgery for albinism children with strabismus and nystagmus

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OBJECTIVE: To evaluate efficancy of vision quality and binocular vision based on surgery in albinism children with strabismus and nystagmus.

METHODS: Respectively case serise reaserch.11albinism children aged from 3~15 years old were collected from our hospital. Infantal esotropia 2 cases，partial accormoditive esotropia 1 case，intimatant exotropia1 case. Horizontal nystagmus with'null point'4 cases and without'null point' 3 cases. Binocular medial rectus recession for infantal esotropia.‘res-rec’ for the orther strabismus babies. Kastenbom surgery for nystagmus with'null point' , and receptor myotectomy for them without'null point' .

RESULTS: The primary eye position were satisfied in strabismus children after surgery 1week, 1month and 3 months. After 3 months , Titmus 3000” in ETs，Titmus 80” in XTs. The face-ture of nystagmu were much better than pre-surgery. The best binocular vision acuity were significantly improved.

CONCLUSION: Proper surgery for albinism children with strabismus or nystagmus can improve their visual quality.

PO-39

不同临床特点的分离性垂直性斜视手术疗效分析

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目的：探讨不同临床特点垂直性分离性斜视的手术方式以期提高治疗效果

方法：收集青岛眼科医院诊断为 DVD 行上直肌手术患者，对其进行分组并评价手术疗效。A 组 52 人，双眼上斜 ≥10° 上斜差异 <5° ，行双上直等量后徙 7-9mm。B 组 30 人，双眼上斜 ≥10° ，上斜差异 ≥5° ，上斜度数较大眼行上直肌后徙 7-9mm，另一眼后徙 5-6mm。C 组 22 人，一眼上斜 ≥10° ，另眼上斜 <3° ，上斜度数较大眼后徙 7-9mm，另一眼后徙 4mm（14 人）或只行一眼手术（8 人）。C 组的微小上斜眼是指一眼明显上斜，而另一眼仅有微小上转或仅见上转企图。

结果：A 组术后 48 人 ≤8△上斜，4 人 9△ -15△欠矫。B 组术后 28 人 ≤8△上斜，且上斜差异 ≤8△，2 人 9△- 15△欠矫，上斜差异 9△- 15△。C 组行双眼手术者上斜明显眼术后存在 ≤8△上斜，微小上斜手术眼术后均正位。行单眼手术者 6 人另一眼出现明显高位偏斜。

结论：DVD 为双眼发病，根据上斜程度不同，可行双眼上直肌不等量后徙。即便上斜程度微小，仍须按不等量手术设计给予最小量的上直肌后徙。对有微小上斜眼的 DVD 若仅行明显眼手术则易引起对侧眼术后上斜视和新代偿头位。

Effectiveness of surgical approach for dissociated vertical deviation with different clinical characteristics

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PURPOSE: To investigate the effectiveness of surgical approach for dissociated vertical deviation (DVD) with different clinical char-

acteristics.

METHODS: A retrospective study was conducted on 104 patients on who had undergone surgical correction for dissociated vertical deviation at Qingdao Eye Hospital from January 2013 to December 2016. Patients were divided into three groups according to their angle of vertical deviation, three groups of patients were treated with different surgical design, and the surgical efficacy was analyzed. Group A：52 patients with deviation angle ≥10° ,in both eyes (The difference between the vertical deviations was <5°). Group B：30 patients with deviation angle ≥10° ,in both eyes (The difference between the vertical deviations was ≥5°). Group C：22 patients with a large deviation angle ≥10° in one eye，a small deviation angle ,<3° in the other eye. Small vertical strabismus means that only a small supravergence, or only attempt to turn up. These deviations can be observed; however, when a deviation is large and frequently manifest, or when it is associated with an abnormal head posture, surgery is often the best course of action. 7-9-mm recession of the superior rectus muscle was reserved for patients in group A. 7-9-mm recession of the superior rectus muscle was reserved for eye with large vertical angle. 5-6-mm recession of the superior rectus muscle was reserved for the other eye in group B. 7-9-mm recession of the superior rectus muscle was reserved for eye with large vertical angle, 4-mm recession(14 patients) or no surgery (8 patients) for a small deviation angle in group C.

RESULTS: Large recessions of the superior recuts muscle will cause eyelid retraction. We did not observe this complication in our study. Postoperatively, 48 cases resulted in improvement , the postoperative vertical angle was 0-8PD.4 cases had 9-15 PD postoperative vertical angle, eye position and compensatory head position significantly improved, all patients did not re-surgical treatment. Surgical satisfaction was 92.31% in group A. There were 28 cases with 0-8PD postoperative vertical angle,the different of postoperative vertical angle in both eyes was ≤8 $^{\triangle}$,2 cases had 9-15 PD postoperative vertical angle,and the different of postoperative vertical angle in both eyes was 9-15 $^{\triangle}$,Surgical satisfaction was 93.33% in group B. There were 0-8PD postoperative vertical angle in the large vertical angle and no postoperative vertical angle in the small vertical angle for both eye surgery in group C. Surgical satisfaction was 100% for bilateral surgery . 6 cases showed obvious vertical strabismus with no surgical eye for unilateral surgery in group C. Surgical satisfaction was 25%.

CONCLUSIONS: Dissociated vertical deviation is usually bilateral.However, most cases were asymmetric in presentation. When bilateral superior different amounts of rectus surgery is performed. 4-mm recession of the superior rectus muscle was reserved for patients with a small deviation angle. If we operated on the nonpreferred eye with large vertical angle,the preferred eye with small vertical angle showed obvious vertical strabismus or new compensatory head position.

PO-40

中国成人和儿童间歇性外斜立体视的比较研究

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目的：本研究通过比较成人和儿童间歇性外斜的立体视，希望为手术时机的选择提供依据。

方法：收集 2015.11-2016.3 在复旦大学附属眼耳鼻喉科医院眼科就诊的间歇性外斜患者，比较儿童 (≤14 y) 和成人 (≥18 y) 的立体视。静态立体视采用 Titmus 和 RDS，动态立体视采用自行设计的计算机程序。

结果：共入选 106 名患者，72 名儿童，34 名成人。其中 71 名 (66.98%) 患者具有动态立体视，绝大多数都是基于视差的。动态立体视和 RDS 存在高度相关性 (kappa=0.841)。儿童的所有三种立体视都较成人更好 (Titmus：x^2=45.881，P=0.000；RDS：x^2=42.946，P=0.000；动态立体视：x^2=31.945，P=0.000), 推测可能与儿童的偏斜角更小有关 (近：t=3.809，P=0.000；远：t=4.498，P=0.000)。多因素分析显示不同的立体视有不同的影响因素，只有看远时的偏斜角对动态立体视的影响有统计学意义 (P=0.008)。

结论：儿童间歇性外斜患者的立体视较成人好。为了保存立体视，建议早期干预间歇性外斜，特别是同时合并其他影响立体视的因素。

A comparison of stereopsis in Chinese intermittent exotropia between children and adults

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PURPOSE: As the high rate of recurrence and consecutive esotropia after surgical management of children intermittent exotropia, the indications for intervention and the optimal time for surgery remain controversial. The purpose of this study was to evaluate the stereopsis in Chinese intermittent exotropia between children and adult, and its affecting factors.

METHODS: Consecutive Chinese patients with intermittent exotropia were enrolled from Nov.2015 to Mar. 2016 in Department of Ophthalmology, Eye & ENT Hospital, Fudan University. Stereopsis was compared between children (≤14 y) and adult (≥18 y). Static stereopsis was measured using Titmus and Random-dot stereopsis (RDS). Dynamic stereopsis was tested with computer-generated random

stereograms. The correlations among different stereopsis and its affecting factors were determined.

RESULTS: A total of 106 patients (72 children and 34 adults) were included. 71 (66.98%) patients had dynamic stereopsis and most of them (94.37%) were disparity based. Significant high correlation between dynamic stereopsis and RDS was found (kappa=0.841). The kappa factor between dynamic stereopsis and Titmus stereopsis was 0.700, and that between RDS and Titmus stereopsis was 0.718. Children demonstrated better in all these three types of stereopsis than adult (Titmus: x^2=45.881，P=0.000; RDS: x^2=42.946，P=0.000; dynamic stereopsis: x^2=31.945，P=0.000), which may be attributed to the smaller angle of deviation in children (near: t=3.809, P=0.000; distance: t=4.498, P=0.000). However, a multivariate regression analysis found that different stereopsis had different affecting factors. Only distance angle of deviation had significant influence on dynamic stereopsis (P=0.008).

CONCLUSIONS: Children have better stereopsis than adult in Chinese intermittent exotropia. In order to preserve stereopsis, early management is suggested for intermittent exotropia, especially co-existing factors which may affect stereopsis.

PO-41

外直肌劈开鼻侧转位治疗动眼神经麻痹

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目的：观察外直肌劈开鼻侧转位治疗动眼神经麻痹的效果。

方法：4 例动眼神经麻痹但外直肌无严重挛缩的患者，年龄 6-31 岁，平均外斜视 -105 三棱镜度 (Prism Diopter,PD)；1 例伴有垂直眼位；2 例为先天性，2 例为后天性；均为单眼。麻醉方法：1 例儿童全麻，3 例成人局麻。手术方法：四个象限均做放射状结膜切口，钩取外直肌，将外直肌彻底分离至肌肉附着点后 20mm，从附着点处剪断，中央劈开，上半部分从上斜肌和上直肌下方、下半部分穿过下斜肌和下直肌下方分别至内直肌附着点的上、下方，缝合至浅层巩膜处。1 例同时行上直肌后徙。随访：5-8 月。治愈标准：最后一次随访时斜视度介于 -10PD 到 +10PD。

结果：4 例患者均完成了外直肌劈开转位至内直肌手术，最后一次随访时检查：3 例治愈，1 例过矫，斜视度分别为：-10PD、+18PD、-8PD、-10PD，治愈率 75%。术后眼球可以轻度内、外转。

结论：外直肌劈开鼻侧转位可以成功治疗部分动眼神经麻痹患者。病历选择很关键，该术式不适用于外直肌严重挛缩的患者。建议儿童也使用调整缝线技术，防止过矫。

Nasal Transposition of Split Lateral Rectus Muscle for Third Nerve Palsy

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OBJECTIVE: To evaluate the outcomes associated with nasal transposition of the split lateral rectus (LR) muscle for managing strabismus associated with third nerve palsy.

METHODS: Four patients with third nerve palsy aged 6 to 31 years old. The mean exotropia was 105 Prism Diopter(PD). All of them had not severe LR contracture and underwent nasal transposition of the split LR muscle with follow-up of 5 to 8 months. Radial conjunctival incisions were placed in all 4 quadrants of the operative eye. The upper and lower halves of the LR muscle were secured at the insertion and then detached and split in half longitudinally 20 mm posteriorly. The upper halve of the LR muscle was transposed to the superior pole of the MR muscle under the superior oblique and superior rectus muscles. The lower halve of the LR muscle was transposed to the inferior pole of the MR muscle around the inferior oblique muscle insertion and beneath the inferior rectus muscle.

RESULTS: Four patients successfully underwent the procedure. Three of the four patients achieved successful alignment (-10PD--+10PD). One patient was overcorrection. The post-operative horizontal deviation was -10PD, +18PD, -8PD and -10PD respectively at the last follow-up. One patient had preoperative vertical misalignment that resolved with surgery.

CONCLUSIONS: Nasal transposition of the split LR muscle can achieve successful alignment in some cases of third nerve palsy. Case selection is critical because severe LR contracture may reduce the likelihood of success. Adjustable suture was recommended to avoid overcorrection.

PO-42

一种新的急性内斜视手术量的设计方法

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目的：根据急性内斜视患者的融合储备力，来确定急性内斜视手术的矫正量，观察眼位矫正效果。

方法：收集自 2011 年 12 月至 2016 年 12 月在我院就诊的所有急性内斜视患者 15 例 , 其中男性 6 例 , 女性 9 例 , 年龄从 4 岁到 67 岁，平均年龄 21 ± 7.2 岁。所有患者术前检查三棱镜加遮盖法确定斜视度数，并检查水平融合储备力。根据会聚和散开的融合储备的代数和的二分之一确定手术矫正量，行内斜视矫正手术（双眼内直肌后徙术），手术量为 +40PD 双眼内直肌后徙 4mm，50PD 后徙 5mm，60PD 后徙 6mm。观察术后眼位和融合力情况。

结果：术前患者平均内斜度数为 +37.5 ± 9.5PD，会聚性融合储备力为 +85 ± 11.5PD，散开行融合储备力为 +23 ± 4.5PD，由此计算的手术平矫正度数为 +52 ± 7.5 PD。患者，会聚性融合储备力为 +36 ± 11.5PD，散开行融合储备力为 -32 ± 8.5PD，术后斜视度为 -1.25 ± 3.5PD. 术后所有患者眼位均达到正位或者轻度隐斜视。双眼融合储备良好，随诊半年以上眼位稳定。

结论：急性内斜视患者根据聚合和散开融合储备力计算手术矫正量更为准确，术后眼位更稳定

A new design method for acute posterior strabismus surgery

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PURPOSE: To determine the correction amount of acute esotropia surgery based on the fusion reserve force of patients with acute esotropia.

METHODS: Between December 2011 to December 2016,,Fifteen patients with acute esotropia were enrolled in our hospital , including 6 males and 9 females aged 4 to 67 years with an average age of 21 ± 7.2 years. All patients were examined by triangular prism plus occlusion method to determine the degree of strabismus and to check the level of fusion reserve force. According to the convergence and scattered fusion of the algebra one-second and determine the amount of surgical correction, line oblique correction surgery (binocular Medial rectus recession), the amount of surgery for the 40PD binocular rectus muscle after migration 4mm, 50PD 5mm, 60PD after the reset 6mm. Observation of postoperative eye position and fusion force. **RESULTS**: The average internal slope was + 37.5 ± 9.5PD, the convergence capacity was + 85 ± 11.5PD, and the fusion reserve was + 23 ± 4.5PD. The calculated degree of correction was + 52 ± 7.5 PD. The fusion capacity of the patients was +36 ± 11.5PD, the fusion capacity was -32 ± 8.5PD, and the postoperative oblique degree was -1.25 ± 3.5PD. All the patients had orthostatic or light Degree of latent view. Eyes fusion good reserves, patients eye positionkept stability during the follow-up time more than 6 months

CONCLUSION: The patients with acute esotropia according to the aggregation and scattered fusion reserve force to calculate the amount of correction is more accurate, postoperative eye position more stable

PO-43

双眼外直肌斜形后徙术治疗集合不足型间歇性外斜视的疗效

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目的：研究双眼外直肌斜形后徙术治疗集合不足型间歇性外斜视的疗效。

方法：回顾性、连续性和干预性研究，随访时间 ≥6 个月。 研究对象为在我院接受双眼外直肌斜形后徙术治疗的 34 例集合不足型间歇性外斜视患者。手术成功的标准为看远及看近时第一眼位在 +5PD ~ — 10PD，并且看远与看近斜视度的差值 ≤8PD。

结果：平均年龄为 7.0 岁（范围 , 3 ~ 18 岁），平均看远斜视度为— 26.2 ± 6.4 PD，平均看近斜视度为— 37.2 ± 6.3 PD。外直肌止端上极平均后徙量为 5.97 mm，外直肌止端下极平均后徙量为 7.49 mm。平均随访时间 15 月，手术成功率为 70.6 %（24/34），欠矫率为 17.6%（6/34），过矫率为 11.8%（4/34）。 看远与看近斜视度的差值从术前 11.03 ± 2.17PD 减少到术后 2.47 ± 3.04PD（P<0.001）。外直肌止端上极与下极的后徙量每相差 1 mm，可减少的看远与看近斜视度差值为 5.65 PD。最后随访时，34 例患者中 32 例（94.1%）看远与看近斜视度的差值 ≤8PD。

结论：双眼外直肌斜形后徙术是治疗集合不足型间歇性外斜视的一种比较安全有效的手术方式。

Slanted bilateral lateral rectus recession for convergence insufficiency-type intermittent exotropia

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PURPOSE: To investigate the outcomes of slanted bilateral lateral rectus recession (SBLR-rec) for the treatment of convergence insufficiency-type intermittent exotropia followed up for a minimum of 6 months.

METHODS: This study is a retrospective, consecutive, interventional case series in which 34 patients who underwent SBLR-rec for convergence insufficiency-type intermittent exotropia between September 2013 and October 2015 were enrolled. A successful surgical alignment was defined as +5 to -10 prism diopters (PD) of orthophoria in the primary position while viewing distant or near targets and a

difference between the near and distance deviation angles of less than or equal to 8 PD.

RESULTS: The mean age of the patients at surgery was 7.0 years (range, 3 ~ 18 years). The mean distance deviations were -26.2 ± 6.4 prism diopters (PD) (range: -15 to -35PD) and the mean near deviations, -37.2 ± 6.3 PD (range: -25 to -45 PD) preoperatively. The mean recession amount of upper pole of the lateral rectus was 5.97 mm(range, 4.0-7.5mm) and that of lower pole of the lateral rectus, 7.49 mm(range, 4.5-8.5mm). At a mean follow-up of 15.0 months (range 6-37 months), the surgical success rate was 70.6 % (24/34), the undercorrection rate was17.6% (6/34), and the overcorrection rate was 11.8% (4/34). The mean difference between the distance and near deviation angles was significantly reduced from 11.03 ± 2.17PD (range:10-15PD) preoperatively to 2.47 ± 3.04 (range: 0-10PD) postoperatively (P<0.001). Each millimeter of difference between the upper and lower poles of the lateral rectus recession was associated with an improvement of 5.65 PD in the difference between the near and distance angles of exodeviation. At the final follow up, the number of patients with less than or equal to 8 PD difference between the distance and near deviations was 32 (94.1%).

CONCLUSION: Based on the results, slanted bilateral lateral rectus recession appears to be an effective and safe procedure for the treatment of convergence insufficiency-type intermittent exotropia.

PO-44

眼球后退综合征的手术治疗

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目的：探讨并分析眼球后退综合征的手术方法和疗效。

方法：对我院 2001 年至 2016 年 45 例眼球后退综合征合并斜视患者的临床特点、手术方法及效果进行回顾性总结和分析。其中Ⅰ型患者 21 例，合并内斜视，Ⅱ型 6 例合并外斜视，Ⅲ 型 18 例合并外斜视，其中有 12 患者内转 adduction 时伴有眼球上下转现象，42 例患者有明显的代偿头位，所有患者内转时伴睑裂变小，外转时睑裂增大，眼球突出。根据斜视类型，斜视度以及内转时是否有眼球上下转现象，选择内外直肌后退（可超量后退）或内外直肌同时后退，必要时加下斜肌减弱术，术前均行牵拉试验，术后以正前方 ± 10△为正位。

结果：40 例患者术后正位，4 例患者欠矫。1 例患者过矫，所有患者术后眼球后退及睑裂内转变小体征得到改善，10 例患者内转并眼球上下转现象消失，2 例改善；42 例有明显代偿头位的患者术后消失，3 例明显改善。

结论：眼球后退综合征的手术治疗方法与常规斜视手术不同，其斜视度与手术量无明显对应关系，原则上不主张在患眼行加强术，当眼球内转时伴有明显上转或下转现象时可行内外直肌同时后徙术，必要时可考虑下斜肌手术，术前牵拉试验及术中彻底消除牵制因素是手术成功的关键。

The surgical management of Duane’s Retraction Syndrome

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OBJECTIVE: To investigate and explore the clinical profile and efficacy of surgery for Duane’s Retraction Syndrome（DRS）.

METHODS: A retrospective review was conducted of 45 medical records of patients with Duane’s retraction syndrome. 21 cases were DRS type Ⅰ with esotropia, 6 cases were DRS type Ⅱ with exotropia, and 18 ases were DRS type Ⅲ with exotropia. 12 cases had adduction with upshoot and/or downshoot phenomenon. 42 cases had the abnormal head posture. All cases had adduction with narrowing of the palpebral fissure and abduction with increase of the palpebral fissure.

SURGICAL METHOD: According to the degree of deviation and upshoot and/or downshoot of the globe, , patients underwent recession of the medial or/and lateral recti (sometimes underwent recession with supernormal amount), or combining with weakening the inferior oblique muscle simultaneously in some cases. A successful surgical alignment was defined as within ± 10△.

RESULTS: 40 of the 45 cases（89%）were achieved a successful surgical alignment after surgery. 4 cases were undercorrection. 1 case was overcorrection. The narrowing of the palpebral fissure with retraction of globe were improved in all cases. The upshoot and/or downshoot of the globe disappeared in 10 cases and had a marked decrease in 2 cases. The abnormal head posture were eliminated in 42 cases, 3 cases were significantly improved.

CONCLUSIONS: The surgical management of DRS was different from the conventional strabismus. The recession of the recti had no significant corelation with the degree of the deviation. Strengthening the affected eye was not recommended. When the retraction globe had obvious upshoot and/or downshoot phenomenon, recessing both of medial and lateral recti were accomplished. With severe upshoot or downshoot, weakening the inferior oblique muscle was performed simultaneously. Also forcing duction test in preoperation and relieving mechanical factors during the operation played an important role in successful surgical results.

PO-45

成人间歇性外斜视手术治疗的临床观察

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目的：探讨成人间歇性外斜视的手术方式、手术量和影响疗效的相关因素。

方法：回顾性病例研究。 收集 2014 年 6 月 ~2016 年 3 月期间武汉普瑞眼科医院行手术治疗的成人间歇性外斜视患者共 76 例 ; 男 40 例，女 36 例；手术年龄 18~42 岁 ; 看远斜视度（50PD~105PD）, 看近斜视度（60PD~110PD）；术后随访 8~11 月；一退一截 1mm 按 9~10PD；≤60 PD 行 2 条肌肉手术，＞ 60 PD 行 3 条肌肉手术；术后脱抑制训练采用同视机或多媒体在线训练 。应用 SPSSl7.0 软件，以 P<0.05 为差异有统计学意义 。

结果：基本型、外展过强型、类似外展过强型、集合不足型正位率分别为 71.4% 、66.7% 、66.7% 、76.2% ，无统计学意义（χ^2 =0.492 P=0.921）；术前知觉融合与术后远期正位的比较有统计学意义（χ^2 =11.74 P=0.001）；术后脱抑制训练与双眼视的比较有统计学意义（χ^2 =4.15 P=0.048）。

结论：成人间歇性外斜视术前有融合功能可获得较好的术后远期正位；分型与术后正位无明显相关性；术后脱抑制训练，对获得双眼单视功能有帮助。

Adults of intermittent exotropia surgery clinical observation of treatment

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OBJECTIVE: To explore the adult of intermittent exotropia surgery way, and the related factors affect curative effect.

METHODS: and materials: Retrospective case series study. A total of 76 adult intermittent exotropia patients treated surgically between June 2014 and March 2016 in WuHan Bright Eye Hospital. (40 male and 36 female).Surgery aged 18 ~ 42 years old.The distance exodeviation prism diopter (PD) is 50 to 105, near exodeviation prism diopter (PD) is 60 to 110. Observed 8 to 11 months after surgery. Less than 60 PD line 2 of extraocular muscle surgery, greater than 60 PD line 3 extraocular muscles. Postoperative derepression training adopt with the synoptophore or multimedia online training.Application SPSSl7.0 software, with P < 0.05 for the difference was statistically significant.

RESULTS: The aligment rate of basic type and divergence excess type , simulated divergence excess type, convergency insufficient type were 71.4%, 66.7%, 66.7%, 66.7%, with no statistical significance（$\chi2$ =0.492 P=0.921）.Preoperative perception fusion and forward is a comparison of postoperative.It was statistically significant（$\chi2$ =11.74 P=0.001）.Derepression training and postoperative binocular visual comparison was statistically significant（$\chi2$ =4.15 P=0.048）.

CONCLUSIONS: Adult intermittent exotropia preoperative fusion function can obtain a better postoperative forwards.The type and postoperative are no significant correlation.It is helpful to restore the binocular visual function with postoperative derepression training.

PO-46

近反射痉挛

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目的：近反射痉挛是一种较为罕见的功能性调节痉挛伴内斜视，成人和儿童都可见发病。其主要临床特点是：调节痉挛引起的高度假性近视、瞳孔缩小、内斜、复视以及眼球运动受限。也有文献报道并将其称为调节痉挛、辐辏痉挛，其发病机理可能与调节汇聚功能性异常以及心理因素相关。

方法：患儿，女性，9 周岁。因“突然出现复视、双眼视物模糊、畏光、眼胀、头痛”来我院就诊。眼科相关检查示高度假性近视（眼轴长与客观检影验光均无近视）、内斜视、眼球外转受限。

结果：予 0.1% 阿托品每晚一次滴眼，并在睫状肌完全麻痹下验光配双镜，治疗 6 个月后，患儿症状较前明显改善。

结论：近反射痉挛是一种表现为调节痉挛、内斜视、假性近视以及瞳孔缩小的疾病，睫状肌麻痹药联合配镜对其疗效显著。但治疗时间长，且容易复发。

Spasm of the Near Reflex

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PURPOSE: Spasm of the Near Reflex is a rare kind of estrotrpia with functional accommodative spasm. It can be found in both

adults and children. The clinical features include high pseudomyopia, pupil miosis, esotropia, diplopia and restricted ocular motility. It's also referred to accommodation spasm (AS) and convergence spasm(CS). The etiology is believed there are something related with accommodation-convergence disorder and some mental problems.

METHOD: A 9-year-old girl complained about 'Sudden onset of diplopia and blurred vision, photophobia, eyestrain and headache' Examinations show high pseudomyopia (ocular axis and retinoscopy show it's emmetropia with both eyes.), esotropia, ocular abduction limitation.

RESULT: 0.1% Atropine is given (one drop both eyes once night before sleep), a bifocal spectacle is also prescribed under fully cycloplegic retinoscopy. The symptoms have resolved after a 6-month term treatment.

CONCLUSION: Spasm of the Near Reflex is clinically characterized by accommodative spasm, esotropia, pseudomyopia and miosis. The cycloplegic medication and use of appropriate spectacles is useful management. But, long-term followed-up is needed and the symptom is easy to recur.

PO-47

高度近视性内下斜视的"疝修补"手术疗效分析

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目的：评价改良的 Yokoyama 术治疗高度近视性斜视的手术疗效。

方法：临床病例研究。 选取 2012 年 1 月到 2016 年 12 月间来我院就诊手术的 17 例(21 眼)高度近视性斜视患者进行研究。术前行眼眶 MRI 检查眼轴长度、眼球位置以及眼外肌走形方向。斜视角度应用 Krimsky 加三棱镜方法检查。手术方式为改良的 Yokoyama 术联合内直肌后徙调整缝线术。麻醉方式为全身麻醉。

结果：17 例 (21 眼)患者的平均眼轴长为 31.41 mm(SD 2.13)。术前平均内斜视角度为 85.42 PD(SD 35.19)，平均垂直斜视角度为 20.16 PD(SD 8.11)。21 只手术眼均存在明显的眼球外转和上转运动受限。术前眼眶 MRI 检查显示，上直肌鼻侧偏位，外直肌下偏位，眼球从肌锥的颞上方疝出。术后第 1 天通过缝线调整术眼眼位均正位，眼球外转和上转改善。术后 MRI 显示，外直肌和上直肌联结后，脱位的眼球被还纳至肌锥内。平均随访时间 6 个月，患者的术后疗效稳定，但有 2 眼复发。

结论：通过改良的 Yokoyama 术 ("疝修补") 可有效还纳疝出的眼球至肌锥内，矫正内下斜视，并改善眼球运动功能。

Analysis of the effect of "hernia repair" in patients with myopic strabismus fixus

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OBJECTIVE: To evaluate the surgical results of modified Yokoyama's procedure for treating myopic strabismus fixus.

METHODS: From January 2012 to December 2016, 17 cases (21 eyes) with high myopia strabismus were studied. Preoperative MRI examination of orbital axial length, eye position and eye muscle running direction. Application of Krimsky and three prism method in strabismus. The operative method was modified Yokoyama combined with medial rectus recession. Anesthesia for general anesthesia.

RESULTS: The mean axial length of 17 patients (21 eyes) was 31.41 mm (SD = 2.13). The average preoperative strabismus angle was 85.42 PD (SD = 35.19), with an average vertical squint angle of PD (SD 8.11). The obvious adduction and turn limited movement there are 21 only eye surgery. The preoperative MRI examination showed that the superior rectus muscle was deviated from the nose and the lateral rectus muscle was inferior. First days after surgery by suture adjustment eye eye position was positive, and to improve the eye. The results of MRI showed that after the external rectus muscle and the superior rectus muscle were connected, the dislocated eyeball was also returned to the muscle cone. The mean follow-up time was 6 months,and the patients were stable after operation, but there were recurrence in 2 eyes.

CONCLUSIONS: The modified Yokoyama's procedure to restore the dislocated globe back in to the muscle cone by uniting muscle belling of the superior rectus muscles is effective and recommended.

PO-48

上直肌转位术在治疗继发性内斜视中的应用

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目的：探讨上直肌颞侧转位术治疗继发性内斜视的疗效。

方法：回顾性病例研究。分析 8 例就诊于武汉爱尔眼科医院眼肌科的继发性内斜视患者术前、术后末次随访时的斜视度、视功能和受累眼外转受限的程度。8 例患者均行上直肌颞侧转位手术．平均随访 6 个月以上。

结果：8 例患者一次手术矫正至正位，患者复视消失．外转受限改善，视功能均未恢复，患者均对手术结果满意。患者术后均未出现垂直或旋转复视。

结论：上直肌转位术是治疗继发性内斜视的有效方法之一，单独上直肌转位不会带来新的垂直斜视和旋转斜视，但术后无法恢复视功能。

Superior rectus transposition (SRT)for the treatment of secondary esotropi

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OBJECTIVE: To use superior rectus transposition (SRT)for the treatment of secondary esotropi．

METHODS: This was a retrospective clinical study．Eight patients with secondary esotropi who underwent SRT in Aier Eye Hospital in Wuhan were reviewed．The pre—and post operative outcomes were compared

and included the deviation angle of esotropia in the primary position，the visual function，and the limit ofabduction．8 patients all had a superior rectus transposition．The average follow-up time was more than 6 months．

RESULTS: Postoperatively，10 patients showed orthophoria in the primary position．The

patients were satisfied that there was no diplopia．But the visual function all were unrecovered. No new vertical or torsional deviation was observed in any of the 8 patients.

CONCLUSION: Superior rectus transposition does not induce new vertical or torsional strabismus．Therefore，SRT is an effective approach to treat secondary esotropi．But the visual function can not be recovered.

PO-49

双上转肌麻痹诊治临床观察

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目的：对 17 例儿童双上转肌麻痹的病人，进行术前术后临床特征的分析。

方法：针对不同的临床特征，13 例进行标准的 knapp 手术，1 例 jesen 手术，2 例 kanpp 加强术，1 例下直肌后退。

结果：17 患者获得满意的头位和 14 例眼球运动满意，2 例垂直眼位在 10PD，1 例术后出现 DVD。

结论：个体化治疗，术前手术方案设计以及术中牵拉试验都很重要。

Clinical features and surgical outcame in congenital double elevator paralysis

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OBJECTIVE: To investigate the clinical features of congenital double elevator paralysis (CDEP) and to evaluate different surgical outcomes based on ocular alignment, improvement in elevation and binocular functions.

METHODS: Seventeen patients diagnosed with congenital double elevator paralysis in the department of ophthalmology ward of Shanghai Children's Hospital were included in this study from July 2014 to January 2017. The changes of eye position, degree of strabismus, elevation of the affected eye and binocular visual function were observed before and after operation, All patients had intact Bell's phenomenon. The choice of procedure was based on the results of forced duction test (FDT) before surgery. FDT was negative in 16 cases. Thirteen patients underwent standard Knapp procedure, with or without horizontal squint surgery, one patient with Jenson procedure, two patients with augmented Knapp procedure. FDT was positive in 1 case, the patient had inferior rectus recession in affected eye and superior rectus recession in sound eye.

RESULTS: Fourteen of 17 patients (82%) were aligned to within5 prism diopters (PD). Elevation improved in 4 patients from severe limitation (-3) to only slight limitation (-1) or normal, while improved in the other 12 patients to slight limitation or normal. All cases head position improved. A limited case of left double elevator paralysis was found to have the right double elevator paralysis as well after the surgery. A case showed bilateral DVD with esotropia after the surgery. Three patients had preoperative and postoperative binocular vision and none gained it postoperatively. No significant postoperative complications were observed during the follow-up period.

CONCLUSIONS: Surgical procedures for CDEP must be individualized according to clinical evaluation and the results of FDT. The results of FDT is of vital importance to choose the appropriate surgical procedure. In addition, CDEP is also needed to precise diagnosis and treatment to get the best outcomes.

PO-50

斜视术后患者双眼立体视能量模型探索研究

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目的：研究 212 例矫正视力与眼位正常的斜视术后患者双眼间的运动视差立体视生物模型和远距离精细立体视生物模型，探索该类患者术后在视觉中枢高级通道层面双眼立体视能量模型的基本情况。

方法：刺激主体采用 LG2343P 偏振显示器，利用 matlab 算法生成随机点高速和低速运动视差立体视生物刺激和远距离精细立体视生物刺激，在双眼分视的条件下观看，记录患者在上述两种模型下的双眼能量立体视情况。

结果：212 例斜视术后患者中 197 例远距离精细立体视缺损，15 例存在远距离精细立体视，153 例高速运动视差立体视缺损，59 例存在低速能量的运动视差立体视功能。

结论：斜视术后患者的大部分远距离精细立体视缺失，表现在调节放松的远距离腹流小细胞通道缺损层面。部分患者存在低速能量的运动视差立体视，说明还有残留的背流大细胞通道功能。从立体视能量模型来看，术后患者除了临床眼位矫正之外，还应该注意视感知觉的立体视能量模型分布检查，从能量阈值模型入手修复术后的双眼视功能情况，保证其远期手术效果和视觉质量。

The Study on the Investigation of Postoperative Strabismus Patients' Binocular Stereopsis Energy Model

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OBJECTIVE: The study is to investigate the 212 cases of motion parallax stereopsis biological model and long-distance fine one among CVA and the postoperative strabismus patients of primary ocular position, and to investigate basic condition of those patients' visual cortex in advanced channel level binocular stereopsis energy model.

METHOD: Stimuli subject adopted polarized monitor LG2343P, using matlab algorithm to generate random-point high and low speed of dynamic motion parallax stereo vision biological stimuli and long-distance fine one. We realized binocular vision separation by using polarized glasses and recorded stereoscopic condition of binocular energy among those two models.

RESULT: 197 cases of long-distance fine stereo vision were deficient among 212 cases; 15 existed long-distance fine stereo vision; 153 cases were deficient on high-speed of dynamic motion parallax stereo vision; 59 had dynamic motion parallax stereopsis function of low-speed energy.

CONCLUSION: Most of long-distance fine stereo vision was deficient among the postoperative strabismus patients, which was showed on the level of adjusted and relaxed long-distance ventral stream small-cell channel deficiency. Some patients had low energy of dynamic motion parallax stereo vision, showing that residue dorsal stream large-cell function still existed. Under the stereo vision energy model, patients should concern on the examination of stereo vision energy model classification of visual perception besides clinical CVA. The effect of the operation and vision quality in long term should be ensured by restoring postoperative binocular visual function through energy threshold model.

PO-51

高度近视固定性内下斜视矫正术后以及人工晶体植入术后成人获得性周期性内斜视

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目的：分享 2 例特殊的成人获得性周期性内斜视病例。

方法：分析 2 例成人获得性周期性内斜视患者的临床资料。

结果：病例 1，42 岁男性，双眼高度近视，右眼向内偏斜逐渐加重 2 年。9 个月前曾行“右眼内直肌后退 + 外直肌缩短术”，术后残余小度数内斜视，且出现一天小度数内斜，一天大度数内斜的规律性斜视变化。诊断为周期性内斜视合并高度近视固定性内斜视，并行右眼内直肌探查后退 4mm+ 外直肌上半与上直肌颞侧半联结术。本次手术后周期性规律消失。病例 2，39 岁女性，双眼高度近视，左眼内斜 20 年。6 个月前，患者曾因“近视”行“双眼有晶状体眼人工晶体植入术”，术后患者自觉左眼内斜加重，且呈周期性。一天内斜度大，达到 45△；另一天内斜度小，为 25△，循环往复。治疗方式为左眼内直肌后退 4mm，外直肌缩短 6mm，手术后周期性规律消失。

结论：周期性内斜视不仅见于小儿，也可发生于高度近视固定性内下斜视 , 经斜视矫正术后的成人，以及共同性内斜视合并

高度近视，人工晶体植入术后的成人。常见的“正位眼日”也可表现为较小度数斜视，如上述 2 例患者均表现为一日内斜度大，一日内斜度小。手术矫正时以内斜明显日的斜度手术即可，术后正位且周期性消失。

Acquired adult onset cyclic esotropia in patients with myopic strabismus fixus and intraocular lens implantation

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PURPOSE: Cyclic esotropia is a rare condition that mostly occurs in children, characterized by patterns of straight and strabismic days with a regular cycle of 24-96 hours. In this report, two cases of cyclic esotropia in adults who showed a regular 48-hour cycle of mild deviation on one day followed by a more severe deviation on the second day are presented.

METHODS: Case reports. clinical features, imaging findings and surgical outcomes are presented.

RESULTS: In case 1, a 42-year-old male with high myopia was diagnosed with progressive esotropia for 2 years. A medial and lateral rectus recession/resection was performed 9 months before. On day one after this surgery, a relatively mild esotropia was present which developed into a severe esotropia on day 2. Being diagnosed as cyclic esotropia with myopic strabismus fixus, he underwent a 4 mm re-recession of the medial rectus combined with a half-Jensen procedure in his right eye. After the second surgery, the cyclic pattern was no longer present. In case 2, a 39-year-old female with high myopia had concomitant esotropia for 20 years. At six months following bilateral intraocular lens (IOL) implantation for her high myopia, she demonstrated a cyclic strabismus. On day one a 25 prism diopters (PD) esotropia was present, which increased to a 45 PD esotropia on day two. A 4 mm recession of the medial rectus and 6 mm resection of the lateral rectus was performed in her left eye. After surgery, the cyclic pattern disappeared.

CONCLUSIONS: Cyclic esotropia can occur in adults with myopic strabismus fixus subjected to horizontal strabismus surgery and with concomitant strabismus following IOL implantation for high myopia. Their cyclic strabismus consisted of a mild squint on day one which increased in severity on day two. The extent of surgery required for correction was based upon the “severe esotropia” experienced on day two and resulted in an excellent therapeutic outcome.

PO-52

间歇性外斜视术后眼位回退影响因素的相关性分析

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目的：分析影响间歇性外斜视患者术后远期眼位回退量的相关因素。

方法：选择在我院眼科进行手术治疗的间歇性外斜视患者 65 例，测量术后第 1 天及术后一周的眼位，并且对 52 例患者进行 3~13 个月的随访，测量眼位回退量，分析影响眼位回退的相关因素。

结果：65 例间歇性外斜视患者术后第 1 周的眼位较术后第 1 天的眼位回退了大约 1.78 PD。52 例随访患者远期眼位回退量均数为（7.65 ± 6.76）PD。其中术前有近立体视患者较无近立体视者术后远期眼位回退量差异有统计学意义（t=-6.284，P =0.010），集合不足型的患者较基本型患者术后眼位回退量差异有统计学意义（t=-3.318，P =0.002），术后第 1 天眼位内隐斜的患者较外隐斜的患者术后远期眼位回退量差异有统计学意义（t=3.225，P =0.002），且发现术后第 1 天眼位与术后远期眼位回退量之间呈线性相关（r=0.324，P=0.019）。

结论：间歇性外斜视患者手术后远期眼位回退量与术后第 1 天眼位、术前有无近立体视、斜视类型有关，与年龄、性别、有无家族史、病史长短、屈光状态、斜视度大小、术前有无同时视、手术麻醉方式以及不同手术方式等无关。

Correlation analysis of influence factors in eye position return after intermittent exotropia surgery

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OBJECTIVE: Analysis the influence factors of eye position return after surgery in patients with intermittent exotropia.

METHODS: To measure the eye position of 65 patients with intermittent exotropia who had received the surgery since 2012-12 to 2013-12 at first day and one week after surgery. 52 of 65 patients ware followed up for 3-13 months, the amount of the eye position return was measured and influence factors were analyzed.

RESULTS: The eye position was found returned 1.78PD at the one week after operation in the 65 patients. During the follow-up

the mean amount of regression was approximately 7.654 ± 6.7574PD in the 52 patients. There is significant difference in mean amount of regression between the patients preoperative who had no near stereoscopic and the patients who had near stereoscopic（t=-6.284，P =0.010）. The patients with lack of collection type regressed more than in the patients with basic type（t=-3.318，P =0.002）. There is significant difference in the eye position returnbetween the patients with esophoria and the patients with exotropia at first day after surgery（t=3.225，P =0.002）. The linear relationship was found in eye position between the first day and long-term（r=0.324，P=0.019）.

CONCLUSIONS: The amount of eye position return in the intermittent exotropia patients was found correlated with the eye position at the first day, preoperative near stereoscopic, type of exotropia, and no relationship with age, sex, family history, medical history, refractive status, strabismus angle, binocular visual, anesthesia, operation methods.

PO-53

Mobius 综合征长期手术效果观察

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目的：mobius 综合征患者表现为先天性单侧或双侧面神经麻痹联合单眼或双眼外展不能。回顾性研究本院自 2009 年以来收治的 8 例 mobius 综合征患者，长期观察斜视术后眼位及视功能情况，分析手术方法及手术效果。

方法：8 例患者被纳入本研究，其中 7 例患者内斜视。所有患者均行 MRI 检查、第一眼位斜视角检查、眼球运动检查和全麻后被动牵拉试验。7 例内斜视患者接受内斜矫正术，术后定期随访：视力、眼位、眼球运动、睫状肌麻痹后屈光检查，观察远期手术效果。

结果：8 例患儿男性 6 人，女性 2 人，其中 7 人术前检查发现内斜视，斜视角大于等于 30PD(30 ~ 110PD)；另一人第一眼位正位。8 例患者均有面瘫表现，所有患者头颅 MRI 均显示单侧或双侧外展神经和面神经缺如或发育不良。6 例患者术后第一眼位较满意（水平斜视度 <=15PD，垂直斜视度 <=10PD），3 例患者行二次手术。

结论：Mobius 综合征属于先天性颅神经支配异常性疾病的一种，由于外展神经先天缺如，因此手术方法首选内直肌减弱术，减弱的量以牵拉试验无限制为佳，长期观察术后第一眼位患者和家长均满意。

Longterm surgery outcome of Möbius Syndrome

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PURPOSE: Möbius Syndrome is a rare disorder presenting with congenital uni- or bilateral non-progressive facial weakness and limited abduction of the eye(s). This investigation presents a retrospective study of Mobius Syndrome in 8 children we found since 2009. To analyze the long-term results in a consecutive series of Möbius Syndrome patients, who underwent surgical correction of strabismus.

METHOD: 8 patients with Möbius Syndrome fulfilled the inclusion criteria of this study. 7/8 presented esotropia at the preoperative examination. All 8 patients had MRI scan. The binocular alignment in primary position, the limitation of versions and ductions and forced duction under anesthesia among the patients with Möbius Syndrome. Early surgery is done to the 7 esotropia children. Patients were re-examined periodically, ophthalmological exam inclided the visual acuity, cycloplegic refraction, deviation measurements and ocular rotations.

RESULTS: Of all the 8 patients, 6 are male, 2 is female. 7 patients presented esotropia at the preoperative examination, above or equal to 30 prism diopters (DP) varying from 30 to 110 and one patient had orthotropia in primary position. All of them presented congenital facial palsy. MRI showed absence of uni- or bilateral CN6 and CN7 in all 8 patients. The patients presented satisfactory surgical results in 6 cases, considering an eso or exodeviation up to 15 DP and a hipertropia lower than 10 DP. 3 patients underwent the second surgery.

CONCLUSIONS: Mobius Syndrome has been classified to congenital cranial dysinnervation disorders (CCDDs). We recommend MR recession as the first surgical choice because of the lack of abduction ability. The surgical results were considered satisfactory, improving patient self-esteem and the parent satisfaction.

PO-54

双眼内直肌后徙术治疗高 AC/A 型内斜视的手术设计及 1 年随访观察

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目的：探讨双内直肌后徙治疗高 AC/A 型内斜视的手术设计与术后效果观察。

方法：65 例确诊为高 AC/A 内斜视患者，以戴全矫镜后看近斜视角为参考依据设计手术量，若看近斜视角大于看远斜视角小于 20 △，手术量酌减 0.5~1.0mm，观察患儿术后 1 周、1 个月、6 个月及 1 年时眼位、眼球运动、集合功能及双眼单视功能。

结果：术后正位率 1 周 73.8%（48/65），1 个月 83.1%（54/65），6 个月 87.7%（57/65），1 年 92.3%（60/65）。术后 1 年 41 例（63.1%）患儿获双眼单视，与术前相比差异有统计学意义（$P<0.01$）。27 例（41.6%）患儿获立体视，与术前相比差异有统计学意义（$P<0.01$）。眼球运动及集合功能在术后随访期均无异常。

结论：选择合适手术量对高 AC/A 型内斜视进行手术治疗可取得满意效果。

Bilateral Medial Rectus Muscle Recession in treatment of Children with high AC/A ratio esotropia: surgical design and 1-year results.

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PURPOSE: To determine the effectiveness of bilateral medial rectus muscle recession as an alternative treatment for high accommodative convergence/accommodation (AC/A) ratio (convergence excess) esotropia.

METHODS: Sixty-five consecutive children with high AC/A ratio esotropia were underwent bilateral medial rectus muscle recession based on the near(33cm) deviation after wearing full hyperopic correction. If near deviation greater than distance deviation 20 prism diopters (PD) or less, the recession of rectus muscles were decrease 0.5mm to 1mm. The near and distance deviation, AC/A ratio, and binocularity eye movement were measured before and 1week, 1 month, 1 year after surgery.

RESULTS: The majority of patients were able to maintain satisfactory ocular alignment after surgery, 73.8% (after 1week), 83.1% (after 1 month), 87.7% (after 6 months), 92.3%(after 1 year). The grade of binocular fusion or stereopsis improved sig in all of the patients.

CONCLUSION: Choosing the suitable length of recession in bilateral medial rectus muscle can achieve satisfactory effect.

PO-55

不同类型外伤性麻痹性斜视手术治疗

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目的：观察和探讨不同类型外伤性麻痹性斜视的手术矫正方法及疗效。

方法：回顾性分析了我院近 5 年手术治疗的外伤性麻痹性斜视病例 29 例，患者年龄 7 ~ 60 岁，外伤后至手术时间为 6 月 ~ 5 年；麻痹肌主要为外直肌麻痹 12 例，内直肌麻痹 5 例，上斜肌麻痹伴下斜肌亢进者 3 例，上直肌麻痹 3 例，双上转肌麻痹者 1 例，内直肌麻痹伴上直肌麻痹者 2 例，外直肌麻痹伴上斜肌麻痹者 3 例；有复视及代偿头位者 22 例。所有病例均经保守治疗 6 个月不能恢复。其中直肌不全麻痹性斜视者，采用单纯麻痹肌缩短 + 拮抗肌超常量后退，上斜肌麻痹者采用下斜肌部分切除、后徙或加对侧眼下直肌后徙术；直肌完全性麻痹者，采用直肌部分移位术或 Jensen 直肌联结术。

结果：疗效评定标准为：治愈：术后残余斜视度 ≤10$^{\triangle}$，代偿头位或主要注视野复视减轻或消失；改善：术后残余斜视度＞10$^{\triangle}$，伴或不伴有代偿头位或复视减轻；无效：手术前后斜视度数无改变。末次随访时 20 例（68.97%）治愈，9 例（31.03%）改善。

结论：外伤性麻痹性斜视手术矫正眼位效果良好；应根据不同麻痹肌、眼位偏斜状况，采用不同的手术方式，术后可获得眼位的美容正位，改善代偿头位和复视。

Strabismus surgery for different types of traumatic paralytic strabismus

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Strabismus surgery for different types of traumatic paralytic strabismus

OBJECTIVE: To observe and investigate the effect of surgical surgery for different types of traumatic paralytic strabismus.

METHODS: 29 cases traumatic paralytic strabismus were retrospective analyzed including 18 cases males and 11 cases female. The patients were 7 -60 years old, mean age 37.5 + 8.9 years old. The operation time points were six months to 5 years after injury and the average was 10.61 + 7.16 months. All patients contained 12 lateral rectus paralysis, 5 medial rectus muscle palsy, 3 superior oblique paralysis with inferior oblique hyperfunction, 3 superior rectus paralysis, 1 double elevator palsy, 2 medial rectus paralysis with superior rectus palsy and 3 lateral rectus paralysis with superior oblique paralysis. Traumatic nerve palsy was mainly caused by complete or incomplete abducens nerve palsy in 12 cases, incomplete oculomotor nerve palsy in 11 cases, trochlear nerve palsy in 3 cases, both abducens nerve and trochlear nerve palsy in 3 cases. 22 patients have diplopia and head position.All patients could not recover after medicine treatment for 6 months. Incomplete rectus paralytic strabismus were used simple strengthen and shorten the paralytic muscle + super back antagonist

muscle. Superior oblique palsy was used partial resection, or recession of inferior oblique muscle or inferior rectus recession of another eye. Complete rectus paralytic strabismus was used partial transposition of rectus muscle or Jensen rectus surgery.

RESULTS: 20 cases (68.97%) were cured, and 9 cases (31.03%) were improved appearance at the last follow-up.

CONCLUSION: Ocular misalignment surgery may get good effect for traumatic paralytic strabismus with different surgery methods.

PO-56

伴有特殊眼球运动的间歇性外斜视的影像学研究

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目的：间歇性外斜视是儿童时期最常见的斜视亚型之一，眼球运动大多正常，不伴有异常头位。文献中报道中伴发异常眼球运动最常见为下斜肌亢进，其他异常眼球运动报道较少。本研究报道了 3 例伴有特殊眼球运动、1 例伴有异常头位的间歇性外斜视患者临床资料和影像学检查特点，探讨影像学检查在伴有特殊眼球运动的间歇性外斜视患者中的诊断意义。

方法：回顾性分析 4 例伴有特殊眼球运动的间歇性外斜视患者临床资料和影像学检查特点。

结果：患者 1 表现为双眼内转时上转受限，外斜伴 A 征，类似 Brown 综合征，但双侧牵拉试验均阴性，MRI 显示双眼内、外直肌在球后位置明显偏低；患者 2 表现为左眼上转受限，6 岁起主诉上转时出现水平及垂直复视，影像学检查结果提示左眼眶自眶尖起源，止于球壁颞下象限的眶内异常条带；患者 3 为间歇性外斜视伴有头向左肩倾的异常头位，右眼外转时上转受限，MRI 显示右眼眶球后近外直肌的异常眶内条带；患者 4 为眼球上转时集合 +50△，下转时分开 -80△。MRI 显示双侧动眼神经下支均发出较粗分支支配内直肌，而下直肌分支未发现。

结论：间歇性外斜视患者可能会伴有特殊的眼球运动，临床中应引起重视，此时影像学检查有助于提供病因解释。

How imaging can help in the diagnosis of intermittent exotropia with novel eye movements

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PURPOSE: To report 4 cases of intermittent exotropia with novel eye movements with their MR imaging results and discuss the possible underlying etiology.

Methord: We retrospectively analyzed the 4 cases with their sex, age, prism, eye movements, binocular function, fundus imaging and MR imaging.

RESULT: The first case is a four-year-old girl was found to have intermittent exotropia with A pattern. Ocular motility demonstrated bilateral overdepression of elevation in adduction, and no overaction of the superior oblique muscles. The forced-duction test with sedation under chloral hydrate，demonstrated no actual restricted elevation in adduction bilaterally. Orbital MR imaging showed horizontal recti are anatomically displaced, the location of bilateral medial rectus and lateral rectus were inferior displacement in the posterior orbit , while the lateral rectus was displaced superiorly in the anterior orbit. The second case is an 8-year-old girl complained of horizontal and vertical diplopia on upward gaze at 6 years of age. There was obvious limitation of elevation of the left eye. MRI of the left orbit showed a linear band that originated from the orbital apex and insert on the posterior globe in the inferotemporal quadrant. The third case is an eight-year-old boy with intermittent exotropia in the primary position. He had a head tilted to the left side frequently. Ocular Motility examination showed mild limitation elevation of right eye in adduction. MRI revealed an orbital band close to the RLR. The fourth case is a case of bilateral synergistic convergence and divergence. An 8-year-old girl had been found to have simultaneous adduction of both eyes in upward gaze since the age of 2 years old. She had a 40Δ intermittent exotropia and a 5Δ left hypertropia in the primary position. She presented simultaneous abduction of both eyes with 50Δ esotropia at upward gaze and simultaneous abduction of both eyes with 80Δ exotropia at downward gaze. There was slight excyclotorsion of the retina in both eyes on fundus photograph. The sequential coronal MRI of the bilateral orbits showed that the inferior division of CN3 sent out an enlarged branch to MR, but the branch to IR could barely be identified.

CONCLUSION: Intermittent exotropia is a common and easy diagnosed disease in clinic, but attention need be paid to novel eye movements. MR imaging can be very helpful in such diagnosis.

PO-57

急性共同性外斜视的临床特点与命名

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目的：与急性共同性内斜视相比，急性获得性共同性外斜视发病率更低，而且尚未被正式命名。本文通过回顾性归纳急性

共同性外斜视的临床特点。

方法：回顾 2014 年到 2016 年在我院诊治的 9 例急性共同性外斜视患者的临床资料。患者均有详细的病史记录、常规的眼科和专科检查和头颅眼眶影像学检查。

结果：患者的平均发病年龄 31.7 ± 18.7 岁，平均视远斜视度为 37.8 ± 13.5PD。9 例患者中，5 例可出现正位，1 例患者在松果体肿物伽马刀术后 1 年发病，1 例患者在颅脑闭合伤后发病，1 例外伤性白内障摘除人工晶体植入术后 1 年发病，1 例患者在发病前有 1 年的射击训练史。1 例松果体肿物除外，其他患者的头颅和眼眶影像学检查没有异常。所有患者同视机检查均有同时视或融合或立体视功能。6 例患者接受手术，除 1 例过矫，其余患者复视消失。3 例拒绝手术，经 1 到 2 年随访没有好转。

结论：急性共同性外斜视具有急性发病、发病年龄偏晚、复视和潜在双眼视的临床特点。部分患者与颅脑损害或正常双眼视状态遭到暂时或永久破坏有关。由于急性共同性外斜视具有独特的临床特点、治疗手段和可能的发病机制，我们建议将其独立命名和归类。

Acute Acquired Concomitant Exotropia: Nomenclature and Clinical Characters

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PURPOSE: Compared with acute acquired concomitant esotropia(AACE), acute concomitant exotropia with double vision has lower incidence and has not been named formally. This retrospective study was to describe the clinical characteristics of acute acquired concomitant exotropia (AACX).

METHODS: Charts from 9 patients with AACX referred to our institute between January 2012 to December 2016 were reviewed. All participants underwent a complete medical history, ophthalmologic and orthoptic examinations, and brain and orbital imaging.

RESULTS: Mean age at onset was 31.7 ± 18.7 years, mean distance deviation was 37.8 ± 13.5PD and mean near deviation was 39.8 ± 16.5PD. Of the 9 cases with AACX, 5 cases showed an intermittent orthophoria,1 case experience double vision 1 year after Gamma knife radiosurgery for pineal mass, 1 case had a history of craniocerebral trauma, 1 case had blurred double vision after two years gunnery training in which one eye was closed 1 hour daily, and,1 case showed double vision one year after the phacoemulsification and implantation of intraocular lens in one eye. Brain and orbital imaging were not remarkable except the case with pineal mass. All cases showed normal retinal correspondence or fusion or stereopsis in the synoptophore before therapy. 6 cases were subjected to unilateral lateral rectus recession and medial rectus resection, and 3cases remained under observation. Diplopia resolved in 5 cases who received surgery except 1 case was overcorrected, and the remaining cases under observation didn't get improvements at follow-up of 1 to 2 years.

CONCLUSION: AACX in this study was characterized by a sudden onset of concomitant exotropia with diplopia in older children, adults and even the elderly, the potential for normal binocular vision. Artificial interruption of binocular vision and neurologic injury may play an role on the genesis of some cases with AACX. We suggest that AACX should be separately named for its unique clinical characters, therapy approaches and theoretical implications.

PO-58

黄斑颞侧异位导致假性外斜视——系列病例报告

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目的：报道颞侧黄斑异位导致假性外斜视的临床特征。

方法：回顾性、非对照、连续病例系列研究。对 13 例因外斜视首诊的患者进行询问病史、屈光检查、斜视度检查、Worth 四点灯、Bagolini 线状镜、Titmus 立体视及眼底检查、B 超、OCT 检查。如果患者配合，进一步行 FFA 及三面经检查。

结果：早产病史 4 例、FEVR家族史 1 例。所有受累眼均存在视力下降。最常见的屈光状态为近视。69%患者存在屈光参差。患者均表现为外斜视外观，但斜视检查表现为正位（11 例）或内斜视（2 例）。3 例存在周边融合，其余完全丧失融合能力。其中 2 例存在异常视网膜对应。1 例存在立体视。患眼均存在黄斑被牵拉至颞侧。色素紊乱及颞侧周边的增殖膜是常见眼底表现。2 例患者表现出无血管区及视网膜下黄色渗出。在随访期间 3 例患者出现视力下降及眼底病变进展。

结论：假性外斜视是由于黄斑异位引起 Kappa 角增大而导致。交替遮盖试验对假性外斜视的鉴别诊断非常重要。多数患者伴有严重的知觉损害。对斜视患儿应仔细检查眼底，排除黄斑异位引起的假性斜视，避免误行手术治疗。

Pseudo-exotropia caused by temporal dislocation of the macula — A small case series report

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PURPOSE: To report the clinical characteristics of Pseudo-exotropia caused by temporal dislocation of the macula.

METHODS: Small, retrospective, noncomparative, consecutive case series. Thirteen pseudo-exotropia patients as the primary presentation, undergone family history search, optometry, strabismus degree examination, Worth 4-Dot test, Bagolini striated glass test, Titmus stereo test, indirect ophthalmoscopy fundus examination and B-ultrasound and OCT scanning. FFA and three-mirror contact lens examination were performed when possible.

RESULTS: Clinical data from 21 affected eyes of 13 patients were analyzed retrospectively. Premature birth and FEVR family history existed in 4 and 1 patients, respectively. Blurred vision were existed in all affected eyes. The most common refractive status was myopia, and the incidence of anisometropia was 69%. Although all the people presented obviously divergent appearance, orthophoria (11/13), or esotropia (2/13) were proved to be the real status. 3 patients existed peripheral fusion while others lost fusion capacity completely. Only 2 children were proved to be hetetotropia with abnormal retinal correspondence by Bagolini test. Only one patient gained stereopsis. Macula were stretched temporally in all involved eyes. Pigmentary disturbance and temporal periphery proliferative membrane were also the most popular fundus appearance. Avascular region and subretinal yellow exudate could be seen in 2 cases. During following period, changes of vision and fundus were detected in 3 people.

CONCLUSIONS: Pseudostrabismus was caused by an increased angle kappa due to macular ectopia. Probably etiology of macular heterotropia might be Annette von Droste-Hülshoff syndrome(ROP), FEVR, or chorioretinitis. Alternative cover test is very important for differential diagnosis of pseudostrabismus. Most of these patients had severe damage of sensory adaptation. These patients were not qualified to strabismus surgical treatment.

PO-59

先天性上斜肌麻痹手术对眼球旋转状态的长期影响

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目的：上斜肌麻痹是麻痹性斜视的最常见类型。上斜肌麻痹的手术方式主要有两类：一是加强麻痹肌即上斜肌加强术，二是下斜肌减弱术。探讨单纯上斜肌折叠术或上斜肌折叠术联合下斜肌后徙术对眼球旋转状态的影响。

方法：纳入 2014.1 至 2016.7 因上斜肌麻痹在北京大学第一医院小儿眼科行手术治疗的患者共 10 名，根据眼球运动特点选择单纯上斜肌折叠术或上斜肌折叠术联合下斜肌后徙术。术后对患者进行了至少 6 个月的随访。并于术前及术后行眼底照相检查及测定黄斑与视乳头的夹角 (FDA)，记录眼球的客观旋转角度。

结果：患者术前均有垂直斜视并伴有代偿头位，予上斜肌折叠 8-10mm 不等，其中 4 名患者根据眼球运动特点联合下斜肌后徙术。术后垂直斜视角度及代偿头位均明显改善。眼底相显示患者术前患眼 FDA 为 -11.93° ± 5.35° ，对侧眼为 -8° ± 4.89° 。术前双眼总 FDA 为 -23.01° ± 11.67° ，术后 6 月为 -14.68° ± 7.12° ，术后 FDA 改善，但组间比较无统计学意义 (P=0.089)。

结论：上斜肌折叠术或上斜肌折叠术联合下斜肌后徙术能有效改善上斜肌麻痹患者的垂直斜视、代偿头位。术后长期随访眼球旋转状态也得到改善。

The effect of surgery for superior oblique palsy on the status of ocular torsion

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OBJECTIVE: Superior oblique palsy is the most common type of paralytic strabismus. Two main categories of surgeries include superior oblique tuck and inferior oblique muscle weakening. This article want to explore the effect of superior oblique tuck on the status of ocular torsion with or without inferior oblique muscle weakening.

METHODS: A retrospective analysis of 10 patients with superior oblique palsy who underwent surgery in Peking University First Hospital from January 2014 to July 2016. According to the characteristics of the ocular motility, the supeiror oblique muscle tuck or the supeiror oblique muscle tuck combined with inferior oblique muscle weakening was pefrormed. Patients were followed for at least 6 months of follow-up. Patients were examined pre-operation and 6-month post-operation with fundus photograph. Fovea-disa angle (FDA) was measured, recording the status of ocular torsion.

RESULTS: All patients had vertical deviation and significant abnormal head posture before opration. All patients underwent superior

oblique tuck, and 4 of them combined with inferior oblique muscle weakening. After operations, vertical deviation and symptom of abnormal head posture were corrected.The fundus showed that the FDA was -11.93 ° ± 5.35 ° and the contralateral eye was -8 ° ± 4.89 ° before operation. The total FDA was -23.01 ° ± 11.67 ° before operation and -14.68 ° ± 7.12 ° after that. The postoperative FDA was improved, but there was no significant difference between the two groups (P = 0.089).

CONCLUSION: The superior oblique tuck or superior oblique tuck combined with inferior oblique muscle weakening can effectively correct vertical deviation and significant abnormal head posture. Ocular torsion status was also improved in long-term follow-up.

PO-60

水平斜视合并小度数垂直斜视术后对垂直眼位的影响

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目的：探讨水平斜视合并小度数垂直斜视患者术后垂直眼位的变化。

方法：回顾性分析本院 2013 年 6 月至 2014 年 6 月收治的 48 例（68 眼）患者的临床资料，其中外斜视 22 例（32 眼），外斜视 26 例（36 眼），患者行缩短及水平后徙手术，未行垂直肌及水平肌垂直移位手术。术后对患者随访，观察垂直眼位的变化。

结果：内斜视患者术前平均垂直斜视角为（7.10 ± 2.12）° ，术后为（3.45 ± 1.24）° ，垂直斜视角减少量为（3.82 ± 1.04）° ，手术前后垂直斜角比较有统计学意义（P<0.05）。外斜视患者术前平均垂直斜视角为（7.05 ± 2.09）° ，术后为（2.52 ± 1.22）° ，垂直斜视角减少量为（4.52 ± 1.12）° ，手术前后垂直斜角比较有统计学意义（P<0.05）。内外斜视患者术后垂直斜角减少量与术前垂直斜角大小均呈正相关（P<0.05）。内、外斜视患者术前黄斑中心凹与视盘几何中心相对角度（FDA）手术前后比较均无统计学差异（P>0.05）。

结论：水平斜视合并小度数垂直斜视患者行水平肌手术治疗后能改善垂直眼位，且改善效果与患者术前垂直斜视角呈正相关。

The changes of postoperative vertical eye position of horizontal strabismus patients with small degree of vertical strabismus

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OBJECTIVE: To investigate the changes of postoperative vertical eye position of horizontal strabismus patients with small degree of vertical strabismus.

METHODS: The preoperative clinical data of 48 cases (68 eyes) of small degree of strabismus vertical strabismus were analyzed from June 2013 to June 2014.There were 22 cases (32 eyes) of exotropia and 26 cases(36)of exotropia.The patients were underwented with surgery to shorten and only after level, not line the vertical and horizontal muscle muscular vertical shift operation. Patients were followed after 6 to 12 months to observe changes in the vertical eye position.

RESULTS: The mean vertical squint strabismus patients preoperatively was (7.10 ± 2.12) ° , the mean postoperative vertical oblique angle was(3.45 ± 1.24) ° , vertical oblique angle to reduce the amount was (3.82 ± 1.04) ° , vertical bevel before and after surgery It was statistically significant (P <0.05). Exotropia with an average vertical squint preoperative (7.05 ± 2.09) ° , the mean postoperative vertical oblique angle was (2.52 ± 1.22) ° , vertical oblique angle to reduce the amount was of (4.52 ± 1.12) ° , vertical bevel before and after surgery There was statistically significant (P <0.05). Strabismus vertical bevel inside and outside after reducing the amount of preoperative vertical bevel size was positively correlated (P <0.05). Internal, external strabismus surgery before the fovea and optic disc geometric center relative angle (FDA) significant difference (P> 0.05) There were no before and after surgery.

CONCLUSION: horizontal strabismus with small degree of vertical lines horizontal muscle strabismus surgery treatment can improve vertical eye position, and the effect of improving the patient before surgery vertical squint were positively correlated.

PO-61

间外患者的视感知觉眼位和临床三菱镜眼位的相关性研究

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目的：探讨间歇性外斜视的双眼视感知觉眼位与三棱镜检查眼位的相关性。

方法：选取 4-17 岁间外斜视患者 112 例，检查三菱镜交替遮盖的斜视度，并使用双眼视感知觉眼位模型和运动立体视能量模型检查患者的双眼间视感知觉脑视觉基础，采用 SPSS 双变量相关方法来分析两者之间的关系。

结果：112 例患者的三菱镜眼位水平及垂直斜视度与知觉眼位水平垂直偏移没有相关性基础。112 例患者中有 23 例具备低速能量下的运动视差立体视，2 例患者具备高速能量下的运动视差立体视，87 例患者不具备运动视差立体视功能。

结论：间歇性外斜视三菱镜检查的斜视度与双眼知觉眼位是线性不相关的，间歇性外斜视患者有部分存在残留的运动视差能量立体视，说明间外患者的背流小细胞通道在双眼通道层面可能被激活。

Study on the Relationship Between the Angle of Deviation using Prism Test and Perceptual BinocularAlignment Test

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AIM: In this study, we try to use a novel binocular alignment test based on visual perceptual function to quantize the relationship between binocular alignment and stereopsis energy, and investigate the standard of intermittent exotropia surgery through binocular visual perceptual models.

METHODS: 112 patients with intermittent exotropia between 4 and 17 years of age. The ophthalmologists examined the angle of deviation using prism and alternate cover test (PCT), and the perceptual binocular alignment test based on biological models including binocular alignment model and dynamic stereopsis energy model, to evaluate the visual perceptual function. All the data were analyzed statistically to investigate the correlation between the angles of deviation measured by different methods.

RESULTS: The results of prism and alternate cover test (PCT), and the perceptual binocular alignment test on both horizontal and vertical deviation showed no obvious correlation. In 112 patients, 87 cases had no motion parallax stereopsis function, 23 cases had slow motion parallax stereopsis function and only 2 cases had high motion parallax stereopsis function.

CONCLUSION: The results of prism test using alternate cover method and the perceptual binocular alignment test using binocular dichoptic method showed no obvious correlation.Thepatients remaining residual motion parallax stereopsis, reveals parvocellular-dorsal (P-D) pathway of the visual system activating. It is promising to establish fine binocular integration through different energy threshold stereopsis biological models.

PO-62

间歇性外斜视术后继发周期性内斜视三例

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目的：报道三例间歇性外斜视手术后继发周期性内斜视的病例。

方法：病例一：8 岁女童，间歇性外斜视，术前斜视度为 -20$^{\Delta}$（5 米），-30$^{\Delta}$（33 厘米）。斜视矫正术后 3 个月，受惊吓后突然复视，内斜视，并逐渐规律，隔日出现内斜视，斜视度 +60$^{\Delta}$（5 米），+70$^{\Delta}$（33 厘米）。行单眼外直肌复位，内直肌后退 5mm。病例二：7 岁男童，间歇性外斜视，矫正术后逐渐复视，隔日出现内斜视。行双眼下斜肌切断，单眼外直肌复位，内直肌后退 3.5mm。病例三：6 岁男童，间歇性外斜视，术前斜视度为 -30$^{\Delta}$（5 米），-35$^{\Delta}$（33 厘米）。斜视矫正术后逐渐复视，内斜视。行单眼外直肌复位，内直肌后退 5mm。

结果：病例一：术后随访 16 个月，眼位正，立体视为 160”。病例二：术后随访 20 个月，眼位正，立体视为 100”。病例三：术后随访 16 个月，眼位正，立体视为 100”。

结论：以外斜视手术为诱因出现的周期性内斜视非常少见，可以通过常规的外直肌复位，内直肌后退矫正，并恢复立体视。但外斜视术后继发内斜视的原因有待于进一步研究。

Three case reports of cyclic esotropia after the surgery for intermittent exotropia

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PURPOSE: To report three children with cyclic esotropia after the surgery for intermittent exotropia.

METHOD: Case1: An 8-year-old girl had an intermittent exotropia. Measurements revealed exotropia of 20 prism diopters (PD) at near fixation and 30 PD at distance fixation. Three months after the surgery, she was scared at school, then she developed intermittent esotropia, which occurred on alternate days. Four months after the onset of the cyclic phase, she underwent the second surgery. We performed lateral rectus restoration combined with unilateral medial rectus recession of 5 mm. Case 2 is about a 7-year-old boy who had a surgery of lateral rectus restoration combined with unilateral medial rectus recession of 3.5 mm. Case 3, a cyclic esotropia was diagnosed in a 6-year-old boy after the surgery for intermittent exotropia. We performed the planned lateral rectus restoration and unilateral medial rectus recession of 5 mm.

RESULT: Over one year of postoperative follow-up, no recurrence of esotropia was observed. Three patients was orthotropic with full ocular rotation. The stereoacuities were recovered. .

CONCLUSION: Cyclic esotropia after the surgery for intermittent exotropia is a rare strabismus. The patient's deviation disappeared after the surgery. But the etiology was still left undisclosed.

PO-63

间歇性外斜视儿童手术前后知觉眼位及精细、粗糙立体视的变化观察

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目的：观察间歇性外斜视儿童手术前后知觉眼位及精细、粗糙立体视的变化。

方法：选取 2015 年 6 月至 2016 年 6 月我科确诊收治的间歇性外斜视患儿 80 例，按接受手术的年龄分为 A 组（4 ~ 6 岁）和 B 组（6 岁以上）。采用三棱镜加遮盖法检查记录斜视度。在双眼分视的基础上采用人机交互视感知觉方法检查知觉眼位，用 matllab 算法建立精细和粗糙随机点立体视生物模型软件测量患儿双眼视功能。回顾性分析比较相关参数的变化及相关性。

结果：A、B 组患儿的斜视度及知觉眼位较术前均有明显改善（p=0.000）。术前三棱镜斜视度与知觉眼位（水平及垂直）均有相关性（r=0.451），术后均无相关性（r=0.017）。A、B 两组患儿手术后精细立体视及粗糙立体视均有改善，其中 A 组仅精细立体视改善的差异有统计学意义（p=0.001），而 B 组仅粗糙立体视的改善差异有统计学意义（p=0.000）。

结论：1）早期手术有利于间歇性外斜视患儿精细立体视的修复；2）斜视度和知觉眼位是在不同的双眼关联基础上进行的量化，两者并非简单的线性相关；3）视感知觉层面的双眼眼位及不同能量阈值立体视的检测对于术后正位的双眼视功能重建有重要的意义。

Observation on the changes of perceptual eye position, fine and rough stereopsis before and after surgery in children with intermittent exotropia

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OBJECTIVE: To observe the changes of perceptual eye position ,fine and rough stereopsis before and after surgery in children with intermittent exotropia.

METHODS: From June 2015 to June 2016, 80 cases of intermittent exotropia were selected in the clinical data. These cases were divided into group A (4-6 years old) and group B (6 years older) according to their age. Pre- and post-operation strabismus deviation were measured by prism-covering method. The perceptual eye position was examined by human- computer interaction visual perception method on the basis of binocular dichoptic state. Furthermore, a fine and rough random point stereoscopic biological model software which used matlab algorithm was established to measure binocular visual function of these cases. Retrospectively analyzed the changes and correlations of these relevant parameters.

RESULTS: All cases in group A and B ,the degree of strabismus deviation and perceptual eye position were significantly improved after surgery compared with those preoperation(p=0.000). Preoperative strabismus deviation and perceptual eye position (horizontal and vertical) are statistically related before surgery(r=0.451), while no correlation between them after surgery(r=0.017). Either fine or rough stereopsis was improved in both groups of children after surgery, of which fine stereoscopic improvement was statistically significant only in group A(p=0.001),and rough stereoscopic improvement only in group B(p=0.000).

CONCLUSION: 1) Early surgery is helpful for the repairing of fine stereopsis in children with intermittent exotropia. 2) Strabismus deviation and perceptual eye position are quantified on the different basis of binocular correlations, both of which are not a simple linear correlation; 3) The measurement of perceptual eye position and different energy thresholds stereopsis has important significance for the reconstruction of binocular vision in children with postoperative orthostatic position.

PO-64

高度近视合并固定性内斜视的手术治疗

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目的：分析高度近视患者发生固定性内斜视的原因及手术治疗效果。

方法：2012 年 1 月至 2016 年 12 月我院眼科确诊固定性内斜视合并高度近视患者 20 例。男 13 例，女 7 例；年龄 48 ~ 77 岁，

平均 61 岁，屈光 -6.00D ~ -12.00D，平均 -8.77D。术前行斜视度及眼眶影像学检查。术中预置内直肌牵引线并断腱后，分离上直肌和外直肌，于上直肌及外直肌的肌止点后 10 mm 局部劈开 1/2 肌腹，6/0 丝线局部结扎二次联结外直肌上方及上直肌的颞侧 1/2 肌腹长约 10mm。根据眼位后，将游离的内直肌行适当后徙或断腱。术后随访 1 ~ 40 月，平均 13 月。

结果：所有影像学检查均提示上直肌肌腹向鼻侧移位，外直肌肌腹向下方移位，外直肌及上直肌间隙明显增宽。术后眼位矫正或基本矫正 17 例，改善 3 例，满意度 96%。术后随访眼位均较稳定。

结论：固定性内斜视多发生于高度近视的老年人，由于老年人球周颞上方筋膜松弛，前后径明显增长的眼球由颞上方筋膜薄弱处脱臼而致。手术以借助部分上直肌及外直肌肌腹连轧修复颞上方松弛薄弱的筋膜为主，根据内直肌痉挛的情况选择联合内直肌的断腱或后徙，效果确切。

Surgical treatment of high myopia with fixed esotropia

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OBJECTIVE: To analyze the cause and effect of surgical treatment for patients with high myopia.

METHODS: From January 2012 to December 2016, 20 cases of fixed esotropia and high myopia were diagnosed in our hospital. There were 13 males and 7 females, aged from 48 to 77 years, with an average age of 61 years (range from -6.00D to -12.00D), with an average of -8.77D. Preoperative examination of corneal imprint strabismus, orbital imaging. Intraoperative preset medial rectus tenotomy and traction line after separation of the rectus muscle and lateral rectus muscle, superior rectus muscle and lateral rectus muscle insertion after 10 mm local 1/2 5/0 split muscle belly, silk ligation two connections lateral rectus and superior rectus above the temporal muscle length of about 10mm 1/2. After observing the position of the eye, the free medial rectus muscle was moved or broken. All patients were followed up for 1 to 40 months (mean, 13 months).

RESULTS: All patients had >45 degree of strabismus, and were fixed in the lower part of the eye. The imaging examination showed that the rectus abdominis muscle was shifted to the nasal side, the lateral rectus muscle was shifted to the lower part of the abdomen, and the space between the rectus and superior rectus muscles was widened. After the operation, 17 cases were corrected or corrected, and the improvement was satisfactory in the treatment of 3 cases with satisfaction of 96%. All the patients were followed up for 1 months.

CONCLUSION: The fixed esotropia occurred in high myopia in the elderly, high myopia with long axial growth, because the elderly periocular upper temporal fascia relaxation, anteroposterior diameter significantly increased eyeball by superior temporal fascia weakness caused by dislocation. With the help of some of the superior rectus muscle and rectus abdominis muscle to repair the fascia of the upper part of the lower temporal fascia, according to the situation of the medial rectus muscle spasm, the choice of the medial rectus muscle tendon or recession.

PO-65

甲状腺相关眼病限制性斜视手术前后黄斑区视网膜血供的变化的研究

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目的：运用光相干断层扫描（OCT）血流成像技术（OCTA）评估甲状腺相关眼病（TAO）限制性斜视患者行斜视矫正术前后黄斑区血流密度变化。

方法：本研究前瞻性纳入 2016 年 6 月至 2017 年 2 月于北京协和医院确诊为 TAO 非活动期（CAS 评分 ≤3 分）限制性斜视患者 24 例共 48 支眼。患者术前及术后均行眼科常规检查及影像学检查，包括最佳矫正视力、压平眼压、三棱镜交替遮盖查斜视角、眼底彩照、OCTA。运用Optovue OCTA扫描视网膜范围为黄斑区 3mm × 3mm。运用配对t检验比较手术前后眼压、斜视角、黄斑区血流密度的变化。

结果：24 例患者术前垂直斜视角（27.5 ± 4）Δ，水平斜视角（30 ± 5.5）Δ，术后垂直斜视角（4.2 ± 5）Δ，水平斜视角（6.4 ± 7.2）Δ，手术前后斜视显著改善（P=0.013）。术前眼压 24 ± 6mmHg，术后眼压 20 ± 2mmHg，手术后眼压显著下降（P=0.014）。黄斑区中心凹表层（27.33 ± 2.12% VS 29.45 ± 2.65%, P=0.032）、中心凹深层（25.64 ± 3.23%VS27.75 ± 4.34%，P=0.043）、黄斑区旁中心凹表层（52.43 ± 2.13% VS 54.37 ± 3.85%, P=0.021）、旁中心凹深层（60.23 ± 1.84%VS61.56 ± 1.74% P=0.041）和脉络膜毛细血管血流密度（61.34 ± 2.91%VS62.61 ± 2.71%, P=0.039）较术前均明显增加。

结论：TAO 限制性斜视矫正术术后黄斑区视网膜和脉络膜血供明显改善。

Changes of retinal blood supply before and after restrictive strabismus surgery in patients with thyroid associated ophthalmopathy

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OBJECTIVE: To evaluate the changes of macular flow density before and after strabismus surgery by optical coherence tomography (OCT) angiography (OCTA) in patients with thyroid associated ophthalmopathy (TAO) with restrictive strabismus.

METHODS: In this study, we prospectively included 24 patients（48 eyes）with restrictive strabismus from June 2016 to February 2017, who were diagnosed with inactive TAO (CAS score ≤ 3) at the Peking Union Medical College Hospital. Patients underwent preoperative and postoperative ophthalmic routine examination and imaging examination, including the best corrected visual acuity, Goldmann applanation intraocular pressure, alternate prism-cover test to measure deviation, color fundus photo, OCTA. Optovue OCTA was used to scan the retina with a macular area of 3 mm x 3 mm. The change of intraocular pressure, deviation and macular flow density before and after operation was compared by paired T test.

RESULTS: Twenty-four patients had preoperative vertical deviation (27.5 ± 4) Δ, horizontal deviation (30 ± 5.5) Δ, postoperative vertical strabismus (4.2 ± 5) Δ, horizontal strabismus (6.4 ± 7.2). Strabismus was significantly improved after surgery (P = 0.013).Intraocular pressure was also decreased significantly after surgery (20 ± 2mmHg VS24 ± 6mmHg P = 0.014). Superficial fovea flow density（27.33 ± 2.12% VS 29.45 ± 2.65%, P=0.032）. deep fovea flow density（25.64 ± 3.23%VS27.75 ± 4.34%，P=0.043）. superficial parafovea flow density（52.43 ± 2.13% VS 54.37 ± 3.85%, P=0.021）. deep parafovea flow density（60.23 ± 1.84%VS61.56 ± 1.74% P=0.041）and choriocapillary flow density（61.34 ± 2.91%VS62.61 ± 2.71%, P=0.039）were significantly increased compared with preoperative

CONCLUSION: Deviation and intraocular pressure were significantly improved after TAO restrictive strabismus surgery. Macular area retinal and choroidal capillary blood flow density were significantly increased, suggesting that the macular retinal and choroidal blood supply improved.

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PU-001

CTLA-4 基因多态性与北方汉族人群甲状腺相关眼病临床关系分析

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目的：本研究旨在探讨 CTLA — 4 CT60A / G（rs3087243）、CTLA — 4 A49G（rs231775）与 TAO 及其严重程度的相关性

方法：纳入研究对象 495 人：健康对照组 152 人，GD 无眼征组 189 人，TAO 组 154 人，其中 TAO 组根据疾病严重程度可分为：轻度 52 人，中重度 55 人，危及视力 47 人。采用 Taqman 实时荧光定量 PCR 分析技术检测 2 个单核基因多态性位点的基因型

结果：健康对照组、GD组、TAO组CTLA — 4 CT60A/G、CTLA — 4 A49G的基因型进行单因素分析，差异无统计学意义。将研究对象分为健康对照组（152 人，组 1）、GD 无眼征＋轻度 TAO 组（241 人，组 2）、中重度危及视力 TAO 组（102 人，组 3）后进行分析：CTLA — 4 CT60A/G 位点 AA 基因频率分别为：3.9%，0.8%，4.9%，组 3AA 基因型频率高于组 2。CTLA — 4 A49G 组 2GG 基因型频率（57.3%）高于组 1（42.1%）

结论：CTLA — 4 CT60A/G 是 TAO 易感基因，与 TAO 严重程度有关。CTLA — 4A49G 可能是 GD 的易感基因

Relationship between CTLA-4 gene polymorphism and thyroid associated ophthalmopathy in northern Han Chinese population

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OBJECTIVE: This study aimed to investigate whether the CTLA4 CT60A / G (rs3087243), CTLA4 A49G (rs231775) polymorphism related to TAO and its severity

METHODS: a total of 495 subjects were included in the study: the healthy control group (n =152), GD group with no eye sign (n = 189), TAO group (n = 154). The TAO group was divided into mild(52 cases), moderate and severe(55 cases), and the risk of visual impairment (47 cases). Taqman real-time fluorescence quantitative PCR assay was used to detect the genotypes of 2 single nucleotide polymorphisms

RESULTS: the CTLA - 4 CT60A/G, CTLA - 4 A49G genotype in healthy control group, GD group and TAO group were analyzed by single factor analysis, and the difference was not statistically significant. The subjects were divided into healthy control group (152, Group 1), GD Group + mild TAO group (241, Group 2),moderate and severe and visual impairment of TAO group (102 cases, group 3) after the analysis: CTLA 4 CT60A/G locus of AA gene frequencies were: 3.9%, 0.8%. 4.9%. The frequency of 3AA genotype was significantly higher than that of group 2. CTLA4 group A49G 2GG genotype frequency (57.3%) was higher than that of group 1 (42.1%)

CONCLUSION: CTLA 4 CT60A/G is a susceptibility gene of TAO, which is related to the severity of TAO. CTLA - 4A49G may be the susceptible gene of GD

PU-002

周边相对屈光度与近视的相关性研究

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目的：研究周边相对屈光度与近视的关系。

方法：随机选取 2016 年 9 月 ~ 2017 年 2 月在我院小儿眼科门诊就诊的 7-12 岁儿童 90 例，使用 1% 阿托品眼用凝胶行睫状肌麻痹后检影验光，按等效球镜度分为正视组（+0.5~-0.5D，27 眼）、低度近视组（-0.5~-3.00D，112 眼）和中度近视组（-3.00~-6.00D，26 眼）。所有对象行眼轴及颞侧 30° 、颞侧 15° 、黄斑部、鼻侧 15° 和鼻侧 30° 五个注视角度的周边屈光度测量。周边相对屈光度 (RPRE)= 周边等效球镜值 (Mp)- 中心等效球镜值 (Mc)。使用 SPSS17.0 软件对结果行统计学分析。

结果：（1）近视程度越大，RPRE 越大，差异具有统计学意义 (P<0.05)。（2）低、中度近视眼中，RPRE 呈相对远视，颞侧大于鼻侧，越靠周边 RPRE 越大，差异具有统计学意义 (P<0.05)。正视组不同注视角度 RPRE 差异无统计学意义（P=0.090）。（3）眼轴越长，屈光度越小，近视程度越大（r=-0.564，p=0.001）。

结论：颞侧视网膜周边相对远视状态可能促发眼球加速增长，进而导致近视的发生发展。

The association between relative peripheral refraction and myopia

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OBJECTIVE: To evaluate the relation between relative peripheral refraction and myopia.

METHOD 90 Children at the age of 7 -12 years old ,who have attended to Pediatric ophthalmology clinic，Renmin hospital of Wuhan university in September 2016 to February 2017,were included in the study. Axial dimensions and peripheral refraction are measured to children. The 90 subjects with 165 eyes included were divided into three refractive categories according to the spherical equivalent based on objective retinoscopic findings under cycloplegia: emmetropia (>-0.5 and ≤+0.50D,n=27),low myopia (>-3.00D and ≤-0.50D,n=112) and moderate myopia(>-6.00D and ≤-3.00D,n=26). Peripheral refraction were measured in uncorrected state along 15 degrees and 30 degrees from central fixation in both nasal and temporal fields．The relative peripheral refraction (RPRE) is described as the difference between peripheral refraction and central refraction.

RESULTS: (1)There is a significant difference in RPRE between the three refraction groups($P < 0.05$) ,the RPRE is increased from emmetropia, low myopia to moderate myopia. (2)The RPRE shows relative hyperopia in low and moderate myopia, which is greater at the temporal fixating angles than nasal's,and is greater at the surrounding retina than Macular center. As changing of fixation angles, it decreases progressively from temporal 30 degrees,nasal30 degrees,temporal 15 degrees to nasal 15 degrees ($P<0.05$). However, there is no significant difference in emmetropia. (3)The ?axial length is negatively relative with?spherical equivalent refraction（r=-0.564，p=0.001）and is positively relative with RPRE, which is more strongly to the temporal fixation angles ,as the correlation coefficient in T30 ° s' ,T15 ° s', N15 ° s' and N30 ° s' RPRE are (r = 0.347, p = 0.001), (r = 0.341, p = 0.001), (r = 0.199, p = 0.004), and (r = 0.199, p = 0.001) respectively.

CONCLUSIONS: It may be an important mechanism in the development and progression of myopia that relative hyperopia in the peripheral retina ,especially in the temporal retina,contributes to greater axis growth.

PU-003

儿童立体视发育的成熟期及学龄前儿童两种立体视检查方法的比较

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目的：探讨儿童立体视发育成熟期及 Titmus 法和颜氏第三代立体视检查在儿童中的对比应用。

方法：4 所幼儿园 1044 名 2~7 岁儿童，颜氏第三代立体图和 Titmus 法检查近立体视，同时查远视力和眼位。以立体视锐度≤60″为正常。用 SPSS 19 统计软件分析。

结果：两种立体视检查均能配合者 972 人，其中 2~ 岁 28 人，3~ 岁 233 人，4~ 岁 354 人，5~ 岁 268 人，6~7 岁 89 人。视力异常 75 人，斜视 8 人。各年龄组正常立体视百分比 Titmus 法为 2 岁 46.4%，3 岁 54.5%，4 岁 84.7%，5 岁 91.8%，6 岁 91%，颜氏法为 2 岁 53.6%，3 岁 89.7%，4 岁 94.6%，5 岁 97.4%，6 岁 94.4%。两种检查方法之间有统计学差异（$P < 0.05$）。两两比较不同年龄组间立体视的差异，Titmus 法在 2 岁与 3 岁、5 岁与 6 岁间无统计学差异，3 岁与 4 岁、4 岁与 5 岁组间有统计学差异；颜氏法只有 2 岁与 3 岁间差异有统计学意义（$P < 0.0125$），其余各年龄组间均无统计学差异。

结论：本研究支持郭静秋儿童立体视成熟期为 3 岁的结论，不支持国外学者成熟期为 5~9 岁的观点；学龄前儿童颜氏法敏感性优于 Titmus 法。

Stereoacuity development in children and comparison of two stereotests

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OBJECTIVE: To investigate stereoacuity development in children and compare the differences of Titmus stereopsis test and the third version random dot by Yan in preschool children.

METHODS: A total of 1044 children (2~7 years old) were enrolled in this study. Near stereoacuity was examined with Titmus stereopsis and the third version random dot by Yan under the same test conditions. Visual acuity and eye position were examined at the same time. Normal stereoacuity was defined as ≤60 seconds. The results were analyzed statistically.

RESULTS: Nine hundred and seventy two children completed the two kinds of stereotests successfully. There were 28 children in two years old, 233 children in three years, 354 in four years, 268 in five years and 89 children in six to seven years old respectively. Seventy five children had low visual acuity and eight children were strabismus. The percentages of normal stereoacuity with Titmus were 46.4% in two years old，54.5% in three years，84.7% in four years，91.8% in five years and 91% in six years respectively, while with Yan random dot stereotes, the percentages were 53.6% in two years old，89.7% in three years，94.6% in four years，97.4% in five years

and 94.4% in six years. There was significant difference between Titmus stereopsis and Yan (χ^2=95.225, $P < 0.05$). The stereopsis with Titmus had no statistical differences between two and three years old, five and six years, while between three and four, four and five years old the stereopsis had differences statistically significant. The stereopsis with Yan has significant difference only between two and three years old (χ^2=26.816, $P < 0.0125$).

CONCLUSION: Our results were in keeping with previous Jing-qiu Guo's study that the stereoacuity maturing period was before the age of 3 years and not consistent with abroad investigators's common opinions that stereoacuity maturing was between 5 to 9 years. The sensitivity of Yan random dot stereotes was superior to Titmus in preschool children.

PU-004

心理疏导对改善眼外伤患儿术后生活质量的效果研究

庞惠文

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目的：探讨心理疏导对出院时和恢复期眼外伤患儿术后生活质量的影响。

方法：采用便利抽样，选取 2016 年 1-12 月我院眼科 8-17 岁眼外伤患者 100 例，按时间段划分为实验组 50 例和对照组 50 例，对照组由两名护士对患者给予住院期间护理常规和出院前一日讲座活动，实验组在常规护理的基础上采取两次一对一心理疏导，分住院期和出院前一日两阶段进行。分别在出院前和出院 2 个月后采用生存质量量表、焦虑自评量表（SAS）进行测评，比较两组患者干预前后的生活质量。

结果：分析两组患者不同病程量表评分，实验组量表的各项得分都有改善（P<0.05），而对照组只有住院期有所改善，心理接受程度和疾病认识程度得分有所下降（P<0.05）；两组患者在病程各期得分比较，实验组患者自我认知程度、心理接受程度和疾病认识程度等均明显高于对照组（P<0.05）。

结论：心理疏导能提高眼外伤患儿术后的生活质量，有效地减轻患儿焦虑抑郁的心理状态，使患儿受伤后更能适应学校生活和社会生活，融入社会，从而实现自身价值，因此心理疏导的方法值得在眼科临床工作中进一步推广和应用。

Effect of psychological counseling on improving the quality of life of children with ocular trauma

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PU-005

不同屈光不正类型学龄儿童眼球生物学参数分析

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目的：分析不同屈光不正类型学龄儿童的眼生物学参数及其与屈光状态的关系。

方法：选取 2014 年 6 月至 2016 年 12 月就诊于我院眼科屈光不正学龄儿童 72 例（144 眼），采用 1% 阿托品眼用凝胶散瞳，RM-8000A 电脑验光仪验光测量等效球镜度，IOL-Master 测量眼轴长度、角膜曲率、前房深度。

结果：6 ~ 8 岁组眼轴长度、前房深度均值低于 9 ~ 15 岁组，等效球镜度均值高于 9 ~ 15 岁组，差异有统计学意义（$P < 0.05$），角膜曲率均值与 9 ~ 15 岁组差异无统计学意义（$P > 0.05$）。各不同屈光状态组，眼轴长度、前房深度与等效球镜度成负相关（$P < 0.05$），角膜曲率与等效球镜度无相关性（$P > 0.05$）。眼轴长度与角膜曲率、前房深度成正相关（$P < 0.05$）。

结论：眼轴长度是影响学龄儿童屈光状态的主要因素，学龄儿童随生长发育，眼轴长度增长，角膜曲率也发生协同变化，前房深度加深，共同参与屈光状态的变化。

Analysis of ocular biological parameters in school age children with different refractive errors

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OBJECTIVE: To analyze ocular biological parameters in school age children with different refractive errors, and to explore the relationship between ocular biological parameters and refractive status.

METHODS: 72 patients (144 eyes) with refractive errors in department of ophthalmology of our hospital from June 2014 to December 2016 were selected, and were applied with 1% atropine eye gel. Spherical equivalent was measured with RM-8000A auto-refractor, and axial length, corneal curvature, anterior chamber depth were measured with IOL-Master.

RESULTS: Axial length, anterior chamber depth of 6 ~ 8 years old group was lower than that of 9 ~ 15 years old group, spherical equivalent degree was higher than 9 ~ 15 years old group, the difference was statistically significant ($P < 0.05$). There was no statistical significance ($P > 0.05$) in the mean corneal curvature between two groups. There was a negative correlation between the axial length and the anterior chamber depth in different refractive status groups ($P < 0.05$), and there was no correlation between the corneal curvature and the equivalent spherical degree ($P > 0.05$). The axial length was positively correlated with corneal curvature and anterior chamber depth ($P < 0.05$).

ONCLUSION: The axial length is the main factor affecting the refractive status of school age children. With the growth and development of school age children, axial length elongate, corneal curvature also change, the depth of anterior chamber deepen, and the changes of refractive state are involved.

PU-006

外显子捕获鉴定 BBS 综合征致病新突变

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目的：利用外显子捕获技术，鉴别一个 Bardet-Biedl 综合征（BBS）家系的致病基因。

方法：对入组的家系成员进行详尽的眼科和全身检查，经知情同意后采集患者和其余成员的外周静脉血，提取基因组。构建基因组文库，然后利用基因捕获技术将 *BBS* 相关基因的外显子及相邻内含子区域（约 50bp）进行捕获与富集，利用高通量测序仪对其进行测序并分析结果。采用 Sanger 测序进行验证，鉴定可能与 BBS 相关的基因变异。

结果：经外显子捕获分析发现一 BBS7 基因突变（c.389-390delAC）。该突变导致氨基酸移码突变（p.N130fs），不属于多态性位点，在人群中发生频率极低，在 HGMD 专业版数据库中尚未见报道。

结论：通过外显子捕获结合 sanger 测序鉴定了一个 BBS 综合征家系 *BBS7* 基因的致病新突变。同时也表明，外显子捕获在 BBS 综合征致病基因的研究中具有精准、有效的优势。

Identify a novel causative mutation of Bardet-Biedl Syndrome by High-Throughput Targeted Exome Sequencing

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PURPOSE: To identify the causative mutation of Bardet-Biedl syndrome (BBS) in two siblings from a consanguineous family by means of a high-throughput targeted exome sequencing (TES).

METHOD: The siblings underwent a thorough ophthalmological examination, including retinal optical coherence tomography (OCT) imaging and an extensive physical examination to characterize the disease phenotype. Venous blood was collected from the siblings and genomic DNA was extracted.After capturing and concentrating the BBS-related exomes and their neighbouring intronic sequences (about 50bp), high-throughput sequencing was applied to sequence.Finally,we analyze the outcome above and further identify BBS- related mutation by means of sanger sequencing.

RESULT: TES successfully revealed a novel mutation（c.389-390delAC）in the BBS7 gene which resulted in a frameshift mutation in amino acid（p.N130fs）.This mutation rare existing in normal population dose not belong to polymorphic loci and haven't been reported in HGMD database before.

CONCLUSION: Our reserach identified a novel mutation（c.389-390delAC）in the BBS7 gene by means of TES combining with sanger sequencing and that demonstrates the high-throughput TES is an accurate and efficient method for the genetic diagnosis of BBS.

PU-007

东莞市 3-6 岁儿童视力筛查结果及相关影响因素分析

张素素

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目的：了解东莞市 3 ~ 6 岁儿童视力发育状况，分析影响儿童视力不良的相关因素，为儿童视力预防保健工作提供切入点。

方法：采用整群随机抽样方法选取兰州市城关区 10866 名 3 ~ 6 岁在园儿童，采用美国伟伦视力筛查仪快速筛查儿童双眼

屈光状态，参照各年龄段眼屈光诊断标准进行结果判断。

结果：学龄前儿童视力不良检出率为 32.1%，男童、女童视力不良。检出率差异无统计学意义 (X2=1．25，P=O．31)，不同年龄组问近视等异常检出率比较差异具有统计学意义 (x2=41．60，P<O．05)；屈光异常主要以散光为主，其次是远视，分别占 23.5%、15.3%；日常行为习惯因素分析结果显示，影响儿童视力不良的主要因素有看书姿势、接触电脑时长、偏食及体育锻炼。

结论：学龄前是儿童视力发育的关键阶段，要引起社会及家长的高度重视。应定期对儿童视力状况进行筛查，及时矫正儿童日常生活中用眼的不良习惯，降低视力不良发生率，为儿童健康成长创造有利条件。

Analysis on Vision Screening Results and Related Factors for 3—6 Years Old Children in Dongguan

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0BJECTLVE: To understand vision development status of children aged 3 ~ 6 years old in Dongguan，analyze the related factors affecting the poor vision of the children．and provide the breakthrough point for children's vision prevention and care．

METH-ODS: To use cluster random sampling method to give 10866 3 ~ 6 years old children in kindergarten a rapid screening on binocular refractive conditions by American Weilun vision screening instrument，and make judgments with reference to refractive diagnostic criteria of all ages．

RESULTS: Preschool children poor vision rate was 28．6 %，the differences of the poor vision between boys and girls were not statistically significant(X2=1．25，P=0．31)．Myopia and other abnormal detection rate for different age group had statistical significance(x2=41．60，P<0．05)；refractive abnormal Was mainly astigmatism，secondly hyperopia，which accounted for 23.5 % and15.3%．Analysis on children daily behavior showed that major factors affecting children's poor vision were due to reading posture，long time on the computer，diet and lack of physical exercise．

CONCLUSLON: Preschool age is the key stage of vision development for children．the society and parents should pay more attention to them．To ensure children's vision screening regularly，correct their bad habits on daily life，reduce the rate of poor vision create favorable conditions for children's healthy growth．

PU-008

干眼症、结膜炎和翼状胬肉与正常结膜上皮的 S100A2 表达差异比较

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目的：探讨 S100A2 在干眼症、结膜炎和翼状胬肉患者的结膜上皮组织表达，并与正常人对比观察，同时观察 S100A2 在培养的人结膜上皮细胞中的表达。

方法：病理结膜上皮组织来源于 7 例干眼症、6 例结膜炎和 5 例翼状胬肉患者手术中病灶区取材，正常结膜上皮组织来源于正常尸检标本。所有组织标本均经常规程序福尔马林固定、石蜡包埋切片，S100A2 兔抗人单克隆抗体行免疫组化染色。结膜上皮细胞来自常规方法培养的正常人结膜上皮细胞系，用于 western blot 检测评价。

结果：Western blot 检测人结膜上皮细胞可见 S100A2 蛋白表达。结膜上皮组织免疫组化染色根据阳性细胞分布范围计分。翼状胬肉组 S100A2 平均计分 1.2，分布于结膜上皮的基底层细胞。正常人结膜上皮组织中 S100A2 平均计分为 1.0，在其表层上皮细胞中表达缺失。干眼症和结膜炎中，S100A2 染色为高表达，同时分布于结膜上皮的基底层和表层，其 S100A2 平均计分分别为 2.86 和 2.17。

结论：S100A2 可作为结膜前体细胞和其他低分化细胞的标记物。S100A2 在干眼症、结膜炎、翼状胬肉和正常结膜上皮中的差异化表达可能与其不同的发病机制有关。

Altered Expression of S100A2 in Dry Eye Syndrome, Conjunctivitis , and Pterygium as Compared to Normal Conjunctival Epithelium

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PURPOSE: To investigate expression of S100A2 in conjunctival epithelia from patients with dry eye syndrome, conjunctivitis and pterygium using immunohistochemistry, in cultured HCjE cells derived from conjunctiva, and compared it to normal controls.

METHODS: Conjunctival samples from seven patients with dry eye syndrome, six patients with conjunctivitis, and five patients with pterygium were included. The normal conjunctival tissue was obtained at autopsy. Formalin fixed, paraffin embedded sections were stained using a rabbit monoclonal antibody specific for S100A2. HCjE cells derived from conjunctiva were grown using standard techniques and assessed using western blot.

RESULTS: A band of appropriate size was detected using antibodies directed against S100A2 when analyzing protein extracts from HCjE cells, confirming proetin expression and the specificity of the antibody. Epithelial staining was scored as involved positive cells .S100A2 immunopositivity was found in the basal layer of conjunctival epithelia in the five cases of pterygium with a mean score of 1.2, and normal case with a mean score of 1.0. Expression was generally lost in more superficial, better differentiated cells. In contrast, strong S100A2 staining was observed in both the basal and the top layers of the conjunctival epithelia in the seven cases of dry eye syndrome examined, with a mean score of 2.86, and the six cases of conjunctivitis, with a mean score of 2.17.

CONCLUSIONS: Our results support the notion that S100A2 is a marker for progenitors and other less differentiated cells in the conjunctiva. The expression of S100A2 in dry eye syndrome, conjunctivitis, pterygium and normal conjunctival epithelium is probably related their different pathogenesis.

PU-009

合肥市小学生近视现状及相关危险因素的调查分析

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目的：调查合肥市小学生视力及屈光状态，同时探讨影响近视发生发展的危险因素，为小学生近视的防控提供相关依据。

方法：随机抽取合肥市三所小学 3327 名在校生，进行裸眼视力、矫正视力检查，双眼中任一眼裸眼远视力低于 5.0 者，测量双眼屈光度数。整群分层抽样 1400 名小学生填写近视相关因素及学校与家长对学生眼健康知识了解的调查问卷，共获有效问卷 1325 份。

结果：在 3327 名小学生中，视力低下检出率为 42.8%。视力低下检出率随年级数逐渐增加，差异有统计学意义（x^2=53.92 P<0.01)。疑似近视检出率为 81.88%，各年级疑似近视检出率逐渐增加，差异有统计学意义（x^2=115.11 P<0.01)。调查问卷分析结果显示：学习时间长、连续用眼时间长不休息、看电子产品距离近、缺乏户外运动是小学生近视发生发展的高危因素。

结论：合肥市小学生视力低下检出率及疑似近视率随年级数逐渐上升，应及早对学生进行用眼行为干预，早期预防近视发生，并根据学生近视的情况，给予合理的矫正。

Myopia the investigation and analysis of present situation and the related risk factors in pupils

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OBJECLIVE To investigate vision and refractive status of pupils in Hefei,and Analysis of the factors of myopia to provide basis for myopia prevention.

METHODS: A random sample method was used to select 3327 primary school students in Hefei.The visual acuity(VA) was measured both with and without spectacles. If a child ‘s VA of one eye was <5.0 ,eye refraction test was taken.Stratified cluster sampling of 1400 pupils filled in eye myopia related factors questionnaire .Parents and schools to complete the remaining knowledge questionnaires that shield an eye ,got 1325 valid questionnaires.

RESULTS: In the 3327primary school students,the poor vision rate Was 42.8 % ,and the rate of poor vision increased with grades ,which had a significant difference(x^2=53.92 P<0.01).The detective late of suspect myopia was 81.88% ,The detective late of suspect myopia among the five grades had a significant difference(x2=115.11 P<0.01). The questionnaires showed Learning time longer, and without rest,seeing distance nearer, lack of outdoor sports,were critical factors of myopia.

CONCLUSION: The rate of poor vision and the detective late of suspect myopia were pretty higher in Hefei.We Should be performed as soon as possible for students to use eye behavior intervention.To prevent myopia happening,And according to the students of myopia, giving reasonable correction.

PU-010

Targeted Next-Generation Sequencing Reveals Novel MYO7A Mutations in a Chinese family with Usher Syndrome Type 1

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METHODS: In the present study, we carried out targeted next-generation sequencing (NGS) to uncover the underlying gene in an USH family consisting of 2 USH patients and 15 unaffected relatives.

RESULTS: Targeted NGS and Sanger sequencing validation suggested that USH1 patients in this family carried the compound heterozygous mutations c.6070C>T (p.R2024X) and c.5168+1G>A in the *MYO7A* gene.

CONCLUSION: This study identified an unreported splice site mutation, c.5168+1G>A, as a compound heterozygous mutation with c.6070C>T(p.R2024X) in the MYO7A gene that could lead to USH1.

Targeted Next-Generation Sequencing Reveals Novel MYO7A Mutations in a Chinese family with Usher Syndrome Type 1

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BACKGROUND: Usher syndrome (USH) is an autosomal recessive disease in which sensorineural hearing loss is associated with photoreceptor degeneration consistent with the clinical features of retinitis pigmentosa (RP). In view of the high phenotypic and genetic heterogeneity in USH, performing genetic screening with traditional methods is impractical.

METHODS: In the present study, we carried out targeted next-generation sequencing (NGS) to uncover the underlying gene in an USH family consisting of 2 USH patients and 15 unaffected relatives. One hundred and thirty-five genes related to inherited retinal degeneration were selected for deep exome sequencing. Subsequently, variant analysis, Sanger validation and segregation tests were utilized to identify the disease-causing mutations in this family.

RESULTS: The patients in the USH family suffered from hearing loss, RP and vestibular dysfunction, which are consistent with the standards of classification for USH1. Targeted NGS and Sanger sequencing validation suggested that USH1 patients in this family carried the compound heterozygous mutations c.6070C>T (p.R2024X) and c.5168+1G>A in the *MYO7A* gene, whereas the unaffected members did or did not carry one of the two mutations. A functional study revealed decreased expression of the *MYO7A* gene in the individuals carrying heterozygous mutations.

CONCLUSION: This study identified an unreported splice site mutation, c.5168+1G>A, as a compound heterozygous mutation with c.6070C>T(p.R2024X) in the MYO7A gene that could lead to USH1, which revealed distinct clinical phenotypes associated with USH and expanded the spectrum of clinical phenotypes associated with USH mutations.

PU-011

丰富环境介导的成年单眼剥夺大鼠视皮质中胰岛素样生长因子 -1 依赖性树突修剪及神经可塑性研究

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目的：检测胰岛素样生长因子 -1（IGF-1）的表达对丰富环境中饲养的成年单眼剥夺弱视大鼠视皮质树突棘修剪及神经可塑性的作用。

方法：建立单眼剥夺弱视大鼠模型，通过免疫印迹 *（WB）* 及逆转录聚合酶链式反应检测标准及丰富环境饲养条件下成年弱视模型大鼠视皮层中 IGF-1 表达的差异，通过免疫组化方法检测树突棘修剪相关标记物 MAP2，并通过电镜及 WB 方法检测神经可塑性的变化。

结果：1. 与标准笼饲养组比较，丰富环境饲养可显著上调单眼剥夺弱视大鼠视皮层中 IGF-1 蛋白及 mRNA 的表达；2. 不同饲养条件并不影响视皮层神经元数目，但与标准笼饲养组比较，丰富环境饲养可显著上调树突棘标记物 MAP2 的表达；3. 丰富环境饲养可重塑成年视皮层神经可塑性，电镜超微结构示突触间隙变窄，突触活性区变长，突触界面曲率增大，突触后致密区增厚。WB 检测突触相关指标 PSD95 及 SYN 表达增强。

结论：丰富环境可通过上调 IGF-1 的表达促进视觉功能恢复，其机制可能与其介导树突修剪，重塑神经可塑性，重新激活

视觉发育关键期有关。

Enriched environment modulates insulin like growth factor-1 dependent dendritic branch trim and neural plasticity of visual cortex in adult monocular deprivation rat

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OBJECTIVE: To examine the role of enriched environment on dendritic branch trim and neural plasticity of visual cortex in adult monocular deprivation rat modulated by the expression of insulin like growth factor-1.

MOTHED: Established the monocular deprivation amblyopic model rat, we use the WB and RT-PCR method to detect the different expression of IGF-1 in monocular deprivation rat between standard rearing and enriched environment rearing, the immunohistochemistry method to explore the expression of MAP2 in order to estimate the dendritic branch trim, and the electron microscope and WB to observe the neural plasticity of visual cortex.

RESULT: 1. Compare to the standard cage rearing, enriched environment can significantly up-regulate the expression of IGF-1 protein and mRNA in visual cortex of monocular deprivation rat; 2. It doesn't affect the number of neuron in visual cortex between different rearing condition. However, compare to the standard cage rearing, enriched environment can significantly up-regulate the expression of dendritic marker MAP-2. 3. The result of electron microscope and WB demonstrate that enriched environment rearing can restore the neural plasticity of visual cortex.

CONCLUSION: Our data suggest that enriched environment can up-regulate the expression of IGF-1, modulate the dendritic branch trim and neural plasticity of visual cortex in adult monocular deprivation rat, and promote the reopening of the critical period, which has the potential to improve the visual acuity.

PU-012

角膜塑形镜对儿童近视患者角膜曲率的影响

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目的：观察儿童近视患者配戴角膜塑形镜后半年、1 年和 2 年角膜曲率的变化。

方法：回顾性病例系列研究。选择 2013 年到 2015 年在我院验配角膜塑形镜的儿童近视患者 30 例，采集配戴角膜塑形镜前后视力、角膜曲率等数据并进行对比分析。

结果：戴镜前角膜曲率平均值为 43.18 ± 1.19，戴镜后角膜曲率平均值为：半年 41.76 ± 1.22、1 年 41.65 ± 1.18、2 年 41.28 ± 1.18，戴镜前后角 ± 膜曲率均值比较差异具有统计学意义（$P < 0.05$）.

结论：儿童近视患者配戴角膜塑形镜期间，随戴镜时间延长角膜曲率值逐渐减小，从而对近视起到矫正作用。

Effect of orthokeratology to the corneal curvature of children in myopia

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OBJECTIEV: To observe the changes of the corneal curvature in half ~ 2year among the children in myopia fitted with orthokeratology.

METHODS: A retrospective case series study.30 people were chosen from patients at the Ophthalmology Department during 3013 to 2015.The corneal curvature were observed before and after wearing orthokeratology lens.Data were analyzed by a paired t-test.

RESULTS: The average corneal curvature before and after half ~ 2year wearing are (43.18 ± 1.19) and (41.76 ± 1.22)、(41.65 ± 1.18)、(41.28 ± 1.18),and the changes of the corneal curvature were significant ($P < 0.05$).

CONCLUSIONS: The corneal curvature decrease gradually in myopia children with orthkeratology lens.

PU-013

在我国采用以学校为基础的视力筛查模式的阻碍及促进因素

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目的：通过研究看得见的希望第五期项目“山西欢乐”中所采用的以学校为技术的筛查模式，探讨以学校为基础的筛查模式在我国的推广性、阻碍因素、促进因素；

方法：通过与筛查模式利益相关者进行半结构化访谈收集定性资料，共访谈 8 名项目医院人员及 9 名筛查老师。数据分析中采用了通用编码技术及持续比较法。

结果：在我国采用以学校为基础的筛查模式共有 7 大主要因素可构成阻碍或促进因素：1）个人原因（如：积极性、能力）；2）机构影响（如：专业性、设施、人员流动、架构）；3）父母及学生的态度及行为（如：意识、对筛查的看法、依从性、行为模式）；4）经济及政治支持（如：政策、基金、盈利）；5）一系列管理因素（如：态度、资源、培训）；6）社会背景（如：教育文化，眼病知识），及 7）在线数据管理系统的使用（如：可及性、可用性、及操作优越性）；

结论：本研究提供了在我国采用以学校为基础的筛查模式所遇到的阻碍或促进因素。此外，本研究建议了成功执行该模式所需的可能性元素。

Barriers and Facilitators for an Innovative School-based Vision Screening Model in China

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PURPOSE: School-based screening is a good way to detect early vision dysfunctions. While it has been proved that the accuracy of screening could be achieved after brief training to teachers, its widespread acceptability, barriers and facilitators for implementation are still unknown. This study aims to explore perceived barriers and facilitators in the school-based screening model in CHEER, a Seeing is Believing Phase V initiative in Shanxi China with the mission to improve access to eye care for children.

METHODS: A qualitative research approach using semi-structured interviews was conducted with stakeholders during screening site visits from December 2016 to January 2017: 8 hospital managements and 9 screening teachers. Common coding techniques and the constant comparative method were used in data analysis.

RESULTS: 7 broad factors were drawn to classify the barriers and facilitators for implementation in China, which were: (1) Individual factors (e.g. motivation, ability), (2) organizational influence on implementation (e.g. expertise, facilities, organizational turbulence, structure), (3) parents and children’s attitude and behavior (e.g. awareness, perspectives to screening, compliance, behavioral routines), (4) economic and political support for execution (e.g. policies, funding, profits), (5) a set of administrative variables (e.g. attitude, resource, training), (6) the influence of social background (e.g. culture of education, knowledge to eye disease) and (7) the use of online data management system (accessibility, usability and advantage in practice).

CONCLUSION: This study provided a context for understanding barriers and facilitators to implementing school-based screening in China. In addition, the study suggests possible elements for successful implementation.

PU-014

Stereopsis Restoration in Amblyopia with 3D Computer Treatment

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目的：采用双目立体视觉训练治疗弱视。

方法：应用 3d 计算机技术降低主视眼视力，减少对弱视眼的压抑，给双眼同时外部图像输入的刺激，并利用计算机程序来引导做双目视觉训练，加强或恢复双眼融合。选择 4-16 岁儿童屈光不正性弱视 18 例，和 12 例屈光参差性弱视，一共 30 例患者。平均训练次数是 33 次。训练每次 1 个小时，连续每天训练，在总体训练前以及结束时检查双眼最佳矫正视力，用同视机检查，以及颜少明随机点测试图检查整个训练之前和之后的双眼融合范围的立体视锐度情况。颜少明随机点图检测了双眼近距离立体视，同视机测定双眼远距离立体视。

结果：最佳矫正视力前后视力训练前后差异有统计学意义。同样，融合和立体视锐度训练前后也有显著差异。尤其是近距离立体视锐度恢复比远距离的立体视锐度程度要好。

结论：使用 3D 计算机训练装置技术对弱视眼视力进行训练，不仅有利于弱视眼视力的提高，而且能同时改善和恢复双眼融合范围和立体视锐度。

Stereopsis Restoration in Amblyopia with 3D Computer Treatment

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BACKGROUND: Use the binocular 3D visual experience with shutter glasses technology in the treatment of amblyopia.

METHODS: The 3D computer procedure is outlined first to measuring and reducing the extent of fixing eye suppresses the fellow amblyopic eye, and give both eye equal external input stimulus, and using the computer program to lead the use of binocular combination experience in order to strengthen or restore the binocular fusion.

RESULTS: Significant difference was found before and after the trail in best correction vision acuity . Similarly, significant difference was also found in the range of fusion and stereopsis acuity .

CONCLUSIONS: To use the 3D computer device to enhance or restore the amblyopia eye not only benefit the vision acuity, but also the fusion range and stereo acuity at mean time. It would be helpful to choose this computer-assisted 3D device to treat the amblyopia in children.

PU-015

部分时间遮盖与全天遮盖治疗屈光参差性弱视疗效比较

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目的：对比研究部分时间遮盖与全天遮盖对屈光参差性弱视的临床效果。

方法：前瞻性研究，随机选取我院 2015 年 1 月 — 2017 年 1 月期间确诊的屈光参差性弱视并完成临床数据测定的病例 108 例 108 眼，随机分成部分时间遮盖组 54 例和全天遮盖组 54 例，进行屈光矫正、双眼视觉等检查，随访半年及一年比较二组的临床治疗效果。

结果：随访半年部分遮盖组有效率 59.26%，全天遮盖组有效率 77.78%，二组间无统计学差异（$P > 0.1$）。随访一年部分遮盖组有效率 80.65%，全天遮盖组有效率 93.75%，二组间无统计学差异（$P > 0.05$）。对于高度屈光参差组，二组比较有统计学差异（$P < 0.05$），全天遮盖组优于部分遮盖组。

结论：部分遮盖和全天遮盖对屈光参差性弱视的临床效果相当。对于高度屈光参差性弱视，因抑制较重需增加遮盖时间。部分遮盖较全天遮盖能提高弱视治疗的依存性，是弱视治疗首选方法，较全天遮盖有明显的优势。

Comparison of curative effects of partial time-cover and all day-cover on anisometropic amblyopia

Wu Yong Sheng

Baotou Eye Hospital

OBJECTIVE: To compare the curative effects of partial time-cover and day-cover on anisometropic amblyopia.

METHODS: 108 cases (108 eyes) were randomly selected from the patients who were diagnosed asanisometropic amblyopia from January 2015 to January 2017. The cases were randomly divided into partial time covered group (n = 54) and all day covered group (n = 54), for refractive correction ， checking binocular vision and other tests, compared the clinical treatment of two groups followed up for six months and one year.

RESULTS: The effective rate of partial time covered group was 59.26% and the effective rate of all day covered Group was 77.78% followed up for six months . There was no significant difference between the two groups (P> 0.1). The effective rate of partial time covered group was 80.65% and the effective rate of all day covered group was 93.75% followed up for one year . There was no significant difference between the two groups (P> 0.05). For the high anisometropia group, the all day covered group was better than the partial covered group, there was significant difference between the two groups (P <0.05).

CONCLUSION: The curative effectswas considerable betweenpartial time-cover and all day-cover on anisometropic amblyopia. For high anisometropic amblyopia, due to heavier inhibition need to increase the cover time. Partial time-cover is the preferred method of amblyopia treatment, improving the dependency of the amblyopia treatment, have a significant advantagecompared with theall day-cover.

PU-016

维吾尔族儿童屈光参差性弱视的调查研究

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目的：了解新疆学龄期维吾尔族儿童视力、弱视的患病情况，为制定有效的防治措施提供依据。

方法：对新疆 2156 名 6-12 岁学龄期维吾尔族儿童进行视力筛查，视力低下者行检影验光后分析其屈光状态。

结果：弱视患病率为 3.71%，弱视首次检出率为 81.25%，男女之间弱视患病率差异无显著性(P> 0.05)。在检出弱视儿童中，屈光不正性弱视占 41.25%，屈光参差性弱视占 42.50%，斜视性弱视占 13.75% ，形觉剥夺性弱视占 2.50%。在屈光不正性弱视眼中 , 远视占 42.42%，近视占 12.12%，混合散光占 45.46%；在屈光参差性弱视眼中 , 远视占 35.29%，近视占 47.07%，混合散光占 17.64%。

结论：屈光不正和屈光参差是形成弱视的最常见原因，其中屈光不正性弱视以远视为多，而屈光参差性弱视以近视为多，且以单眼的中、高度近视多见，进一步证实我们的临床发现。

Investigation on anisometropic amblyopia among the Uighur children

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OBJECTIVE: To investigate the vision and the prevalence of amblyopia among the Uighur school-age children from XinJiang, providing evidence to establish an effective prevention and control measures.

METHOD: 2156 school-aged Uighur children 6 to 12 years old were screening for vision. Analyze the refractive status of the people with poor eyesight after retinoscopy.

RESULT: The prevalence of amblyopia was found to be 3.71%. 81.25% of the amblyopic children had not been noticed before the investigation.There was no significant difference in the prevalence of amblyopia between boys and girls (P> 0. 05).In the amblyopic children,41.25% was ametropic, 42.50% was anisometropic, 13.75% was strabismic, 2.50% was deprivation.Among the eyes of the ametropic amblyopia, 42.42% was hyperopic, 12.12% was myopic, and 45.46% was mixed astigmatism. Among the eyes of the anisometropic amblyopia,35.29% was hyperopic, 47.07% was myopic, and17.64% was mixed astigmatism.

CONCLUSION: We concluded that ametropia and anisometropia are the most common risk factors for amblyopia.Hyperopia is the most among the ametropic amblyopia,however myopia especial monocular moderate and high myopia is the most among the anisometropic amblyopia.It further confirms our clinical findings.

PU-017

Titmus 立体视图应用于弱视筛查

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目的：通过对桂林市城区幼儿园学龄前儿童视力、立体视锐度情况的调查，评价 Titmus 立体视图在弱视筛选中的作用。

方法：随机整群抽取桂林市 3 个城区 3 所民办幼儿园学龄前儿童 228 人，年龄 3-6 岁，平均 4.72 岁，首先进行 Titmus 立体视图、裸眼视力、小瞳屈光度、眼位及眼球运动检查，再对前两项任一低常者进行阿托品散瞳电脑验光、矫正视力、眼底检查，以最终明确弱视诊断。

结果：(1) 以 3~5 岁低于 0.5、6 岁低于 0.7 为视力筛查标准，则 3~6 岁视力低常率分别为 11.94%、18.36%、5.36%、23.02%；(2) 以 Titmus=100" 为正常值进行立体视锐度筛查：则 3~6 岁组正常立体视检出率分别 23.8%，75.0%，95.9%，95.5%; (3) 采用 2011 年弱视诊断标准，最终 16 人诊断为弱视；(4) Titmus 立体视图检查法 (特异度为 87.26% , 误诊率为 12.74%) 与视力检查法 (特异度 85.85%，误诊率为 14.15%)，其粗一致性相等。

结论：由于影响学龄前儿童立体视觉发育的主要因素是弱视，Titmus 立体视图应用于学龄前儿童的弱视筛查可提高筛选的效率 , 值得被提倡和推广。

The application of Titmus stereo view in the screening of amblyopia

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OBJECTIVE: Through the investigation of Guilin City preschool children visual acuity and stereoacuity situation,to evaluate the effect of Titmus stereo view in the screening of amblyopia.

METHOD: Random cluster sampling of 3 private kindergartens in the city of Guilin, 228 Preschool children, aged 3-6 years old, average age of 4.72 years old. First, we examined Titmus stereoscopic view, visual acuity, diopter, eye position and eye movement, then finished computer optometry after mydriasis with Atropine, visual acuity, fundus examination, in order to clear diagnosis of amblyopia.

RESULT: Take 0.5(the age of 3~5 years), 0.7 (the age of 6 years)as the visual screening criteria, 3~6 years of low vision rate were 11.94%, 18.36%, 5.36%, 23.02%；(2) To Titmus=100 for the normal value of stereoacuity screening: 3~6 age group of normal stereopsis detection rates were 23.8%, 75%, 95.9%, 95.5%；(3) Using the 2011 amblyopia diagnostic criteria, the final 16 preschool children were diagnosed as amblyopia；(4) The Specificity of Titmus stereo vision is 87.26%，and misdiagnosis rate of Titmus stereo vision was 12.74% .The Specificity of visual acuity test was 85.85%，and misdiagnosis rate of isual acuity test was 14.15%，

CONCLUSION: The main factors affecting of the stereo vision development of preschool children is amblyopia, Titmus stereo view is applied to preschool children can improve the efficiency of amblyopia screening，should be advocated and promoted.

PU-018

戴镜用于暗示治疗儿童癔症性视力障碍的体会

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目的：探讨用戴镜暗示治疗儿童癔症性视力障碍的疗效。

方法：2015 年 1 月至 2016 年 8 月在我院确诊为癔症的患儿 15 例，分析导致癔症的原因。与患儿单独交流，取得信任，然后用试戴架给患儿试戴平光镜片，同时强调这是治疗眼镜，戴上后就会变得很清楚，视力提高后告知患儿需要连续配戴治疗 1 周，然后就会完全康复。比较治疗前后最佳矫正视力和视野的改变。

结果：15 例患儿均有精神创伤史，年龄 8 ~ 16 岁，其中家长训斥 5 例，留守儿童 4 例，老师训斥 2 例，父母离异 2 例，考试成绩下降 1 例，同学吵架 1 例。30 眼治疗前平均视力 4.2 ± 0.13，治疗后 4.9 ± 0.08, 差异有统计学意义（$p < 0.05$）。治疗前视野 MD-12 ± 2.03, 治疗后 -1.5 ± 0.56，差异有统计学意义（$p < 0.05$）。15 例均配戴平光眼镜回家，1 ~ 2 周后自行摘掉眼镜。3 月后随访，未见复发。

结论：配戴平光眼镜暗示治疗癔症性视力障碍安全有效，无副作用，持续时间长，容易被患者接受，值得推广。

Wear glasses for implied in treatment of children hysteria visual impairment

Bo Liu

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OBJECTIVE: to study the treatment with glasses suggests children hysteria sex the curative effect of visual impairment.

METHODS: between January 2015 and August 2016 in our hospital diagnosed as hysteria children 15 cases, analyze the cause of hysteria. Communicate with children alone, trust, and then use try wearing a holder for children with Dai Ping lens, emphasize that this is the treatment of glasses at the same time, will become clear after wear, visual improved told children need continuous wear treatment after 1 week, then a full recovery. Compare best corrected vision and vision changes before and after the treatment.

RESULTS: 15 cases of children have a history of trauma, age 8 to 16 years old, the parents scolded in 5 cases, 4 cases of left-behind children, the teacher scolded in 2 cases, parents' divorce in 2 cases, test scores fall in 1 case, other students in 1 case. Before 30 eyes treatment eyesight of 4.2 + / - 0.13 on average, 4.9 + / - 0.08 after treatment, difference was statistically significant ($p < 0.05$). Vision MD - 12 + / - 2.03 before treatment, after treatment to 1.5 + / - 0.56, difference was statistically significant ($p < 0.05$). 15 cases were wearing flat glasses to go home, after 1 ~ 2 weeks to take off glasses. 3 months follow-up, no recurrence.

CONCLUSION: suggested in treatment of hysteria wear flat glasses eyesight obstacle is safe and effective, no side effect, long duration and easily accepted by patients, is worth promoting.

PU-019

不同遮盖时间对远视性弱视治疗效果的影响

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目的：研究不同遮盖时间对 3 ~ 8 岁远视性弱视儿童治疗效果及立体视功能的影响

方法：队列研究。选取 2014 年 6 月至 2016 年 9 月在我院眼科就诊 3 ~ 8 岁远视性弱视儿童 438 例，均为初诊弱视。采用健眼遮盖法治疗弱视。根据每天遮盖时间的不同，将纳入研究的儿童随机分为三组：2h/d 组、6h/d 组、全天遮盖组。每月复查视力，随访 18 个月，记录患儿弱视基本治愈所需时间；并检查所有患者初诊时及弱视基本治愈后的立体视功能。

结果：(1) 弱视眼 BCVA<0.3 的儿童，6h/d 组及全天组的弱视治愈率较 2h/d 组高（p<0.05），(2) 对于较差眼 BCVA<0.3 的重度弱视儿童，6h/d 组及全天组的疗程短于 2h/d 组（p<0.05）；(3) 对于差眼 BCVA≥0.3 的轻中度弱视患者，2h/d 组和 6h/d 组同时视及融合功能改善情况优于全天遮盖组（$p < 0.05$）；BCVA<0.3 的较重度弱视患者，与 2h/d 组比较，其余两组患者的融合功能恢复效果较好。

结论：远视性弱视患者遮盖时间不同，弱视的疗效不尽相同；轻中度弱视儿童采用部分遮盖，对立体视功能的建立有积极意义；重度弱视儿童采用较长时的遮盖方案，利于提升治愈率，缩短疗程及视功能建立

Effect of patching time on hyperopic amblyopia children

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OBJECTIVE: To investigate the effect of different patching time on hyperopic amblyopia children aged from 3 to 8 years.

METHODS: Cohort study. Four hundred and thirty-eight amblyopic children were collected in Renmin Hospital of Wuhan University during June 2014 to September 2016. According to the result of retinoscopy after mydriasis, all patients underwent refraction correction and 2 hours or 6 hours or more than 12 hours of daily patching.

RESULTS: (1)Among those children whose baseline BCVA≥0.3,there was on difference on the cure rate and effective rate between the three groups with different patching time（p>0.05）; significant difference was observed in children who were patched for 6 hours and full-time patching compared to 2 hours among those whose baseline BCVA <0.3(p<0.05).(2) Between the three groups with different patching time, insignificant differences of cure time were observed among those children whose baseline BCVA≥0.3（p>0.05）;children who were patched for 6 hours and full-time patching had shorter cure time then 2 hours（p<0.05）. After amblyopia children were cured , the number of cases owning the visual function is significantly increased before treatment（$p < 0.05$）, but not yet been fully turn to normal.; among those children whose baseline BCVA≥0.3, the improvement of simultaneous vision and fusion function in group 2h/d and 6h/d is better than group full-time patching（$p < 0.05$）;the recovery of fusion function in group 6h/d and group full-time patching is better than group 2h/d（$p < 0.05$）.

CONCLUSION: Hyperopia amblyopic patients underwent different patching regimens therapeutic efficacy of amblyopia was different.That mild or moderate amblyopia children adopted part-time patching regimens is conducive to the establishment of stereo vision function , severe amblyopia children adopted longer patching regimens is conducive to to improving amblyopia cure rate, shortening the treatment course and the establishment of stereo vision function.

PU-020

“五点三”斜弱视综合治疗仪临床疗效观察

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目的：观察五点三斜视弱视综合治疗仪对儿童弱视的治疗效果；评估该治疗仪双眼融合功能训练效果以及对肌源性视疲劳的改善效果

方法：选取 60 例 113 眼弱视患儿随机分为 2 组，其中治疗组 30 人 58 眼根据弱视类型采用五点三斜弱视综合治疗仪的 CAM 仪训练法 / 后像“十”字点灭疗法 / 后像脉冲红光、绿光闪烁疗法 + 传统戴镜遮盖描画等精细作业，训练时常规遮盖未治疗眼；对照组 30 人 55 眼仅采用传统戴镜遮盖描画等精细作业。连续门诊随访 6mon，比较治疗前后两组的有效果；选取 50 例融合功能不足导致肌源性视疲劳患者，用同视机测量治疗前后融合力

结果：五点三斜视弱视综合治疗仪组连续治疗 6 个月，第 1、3、6 月的有效率分别为 69.0%，75.9% 和 86.2%，对照组连续治疗 6 个月，同期弱视治疗有效率分别为 60.0%，65.5% 和 72.7%。两组之间的差异具有统计学意义（$P < 0.05$）；50 例融合功能不足肌源性视疲劳患者治疗前的融合力为 $8 \pm 2^{\triangle}$，治疗后融合力平均值为 $13 \pm 5^{\triangle}$

结论：五点三斜视弱视综合治疗仪对儿童弱视有较好的治疗效果，对由于融合功能不足引起的肌源性视疲劳有较好的治疗效果，临床值得推广

PU-021

武汉市洪山区 4900 例 0 ~ 3 岁婴幼儿屈光状态调查及分析

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目的：分析 0 ~ 3 岁婴幼儿的屈光状态，探讨屈光异常的危险因素，并寻求一种方便、简单、可靠、客观反映婴幼儿屈光

发育状况的筛查方法。

方法：使用莫廷 HAR-800/880 视力筛查仪对武汉市洪山区 0 ~ 3 岁婴幼儿 4900 例 (9710 眼) 进行屈光状态筛查。对筛查结果进行统计分析，研究其屈光分布特点和发育规律。

结果：五组检出异常率随着年龄增长而降低；各组球镜异常率和柱镜异常率分别为 5.75% 和 3.17%、2.54% 和 2.54%、1.94% 和 1.61%、3.17% 和 2.80%、1.66% 和 1.36%；散光眼占 74.5%、单纯远视占 23.6%、单纯近视占 1.9%；其中顺规散光占 67.5%、逆规占 21.4%、斜轴占 11.1%，随着年龄增加逆规散光呈下降、顺规散光呈上升趋势；遗传是婴幼儿散光的危险因素 ($p<0.05$)。

结论：婴幼儿屈光不正异常率随年龄增长而降低；屈光异常以散光和远视为主，近视发生率较低；顺规散光比例高于逆规散光，斜轴散光所占比例最低；遗传是婴幼儿散光的危险因素；莫廷视力筛查仪对婴幼儿进行视力筛查方便、快捷、实用，适合在小儿眼部屈光检查中推广。

Observation And Analysis Of Refractive Status of 4900 Infants In HongShan District of Wuhan

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OBJECTIVE: To analysis refractive states in a 0.5~3 years old population, to discover the growing regularity of visual acuity and its epidemiological risk, to early detect and treat refractive integrity and find a way to screen refractive error about the infants.

METHODS: To analysis statistically the screening results of 4900 infants (9710eyes) aged 0.5~3y in wuhan city. Five visual development stages were demonstrated by 0.5~1y、1~1.5y、1.5~2y、2~2.5y、2.5~3y. The development and distribution of refraction were analyzed.

RESULTS: 1.Spherical equivalence: 0.96 ± 0.97DS in 0.5~1y, 0.91 ± 0.87DS in 1~1.5y, 0.84 ± 0.87DS in 1.5~2y, 0.79 ± 0.73DS in 2~2.5y, 0.83 ± 0.70DS in 2.5~3y. Comparing these different, there were statistic significances of SE between the group aged in 0.5~1y and 1.5~2y、2~2.5y、2.5~3y ($P<0.05$). there were statistic significances of SE between the group aged in 1~1.5y and 2~2.5y ($P<0.05$). 2. The incidence rate of ametropia in infants between 0.5~1y、1~1.5y、1.5~2y、2~2.5y、2.5~3y groups were 20.6%、10.7%、7.2%、7.0% and 5.5%.

2. The incidence rate of ametropia in infants aged 0.5~1y、1~1.5y、1.5~2y、2~2.5y、2.5~3y groups were 20.6%、10.7%、7.2%、7.0% and 5.5%. 3. The abnormal rate of the differences of cylinder diopter needed to have health care in infants aged 0.5~1y、1~1.5y、1.5~2y、2~2.5y、2.5~3y groups were 3.76%;

CONCLUSION: The scope , cylinder and equivalent of the infants showed a trend of decline with age; The rate of the refractive of the infants decreased witg age; The higher astigmatism was the lower of the proportion; Most children had with-rule astigmatism , against-rule astigmatism was the second, and oblique astigmatism was the last.

PU-022

视功能训练对不同程度儿童弱视治疗的巩固作用

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目的：观察视功能训练对不同程度儿童弱视视力正常后效果的巩固作用。

方法：78 例弱视儿童中，随机分为视功能训练组 36 人，对照组 42 人。经弱视治疗双眼视力均达到 0.9 以后，观察两组在随访 6 个月，12 个月，24 个月，36 个月后的视力回退情况。

结果：6 个月后的轻、中、重度弱视视功能训练组与对照组回退率均为 0，差异无统计学意义；12 个月后视功能组轻、中、重度弱视回退率与对照组之间差异均无统计学意义（$p=0.245$）；24 个月后视功能组轻度弱视回退率与对照组之间差异无统计学意义（$p=0.221$）；中度弱视回退率与对照组之间差异有统计学意义（$p=0.027$），重度弱视回退率与对照组之间差异无统计学意义（$p=1$）；36 个月后视功能组轻度弱视回退率与对照组之间差异无统计学意义（$p=0.221$）；中度弱视回退率与对照组之间差异有统计学意义（$p=0.012$），重度弱视回退率与对照组之间差异无统计学意义（$p=1$）。

结论：视功能训练能降低中度儿童弱视治疗中的回退率，能有效的巩固中度儿童弱视视力正常后的治疗效果。但对于轻度和重度儿童弱视无明显疗效。

Consolidation Effect Of Visual Function Training On Amblyopic Therapy In Children With Different Degrees Of Amblyopia

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OBJECTIVE: To observe the consolidation effect of visual function training on amblyopic therapy after visual acuity had been normalized in children with amblyopia of different degrees (mild, moderate and severe).

METHODS: Totally 78 amblyopic children were divided into two groups: visual function training group (n=36) and control group (n=42). The rollback situation of the two groups in 6, 12, 24 and 36 months were observed after visual acuity reached 0.9 during treatment.

RESULTS: The rollback rates were both 0 in visual function training group and control group with different degrees of amblyopia after 6 months. There was no significant difference in rollback rate between the two groups with different degrees of amblyopia after 12 months (P=0.245). There was no significant difference in rollback rate between the two groups with mild and severe amblyopia after 24 months (P=1.000 and 0.221, respectively). However, the rollback rate in training group with moderate amblyopia was significantly different from in control group after 24 months (P=0.027). Similarly, there was no significant difference in rollback rate between the two groups with mild and severe amblyopia after 36 months (P=1.000 and 0.221, respectively). However, the rollback rate in training group with moderate amblyopia was significantly different from in control group after 36 months (P=0.012).

CONCLUSIONS: Visual function training can reduce the rollback rate and consolidate the effect of amblyopic treatment effectively for children with moderate amblyopia. However, the effect is not as good for children with mild and severe amblyopia.

PU-023

视光门诊高度远视性屈光不正儿童屈光状态远期变化的 Logistic 回归分析

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目的：分析门诊就诊的高度远视性屈光不正儿童屈光状态远期变化规律。

方法：对 81 例 (81 只眼)3~11 岁高度远视儿童进行 5~22 年的观察。

结果：81 只眼高度远视儿童的屈光状态初次就诊远视屈光度平均为 +8.13 ± 1.87D，末次随访远视屈光度平均为 +4.46 ± 2.74D, 年均下降屈光度为 0.41D, 屈光度的减少具有统计学意义（t=13.30,P<0.05)。9-14 岁年屈光度减少较快，15 岁以后屈光度减少缓慢。Logistic 回归分析结果表明影响屈光度减少因素是精细训练和随访时间。

结论：高度远视性屈光不正儿童远视有减少趋势，精细训练和随访时间是影响远视减少的主要因素。

Logistic regression analysis of long-term refractive state in children with high hypermetropia

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OBJECTIVE: To investigate the long-term refractive outcomes of high hyperopic children in optometry clinic.

METHODS: We prospectively observed the changes of refraction degrees in 81 high hyperopic children (81 eyes) for 5-22years.

RESULTS: Mean hyperopic diopters of the 81 children were +8.13 ± 1.87D and +4.46 ± 2.74D on initial and last examination respectively. There was a significant decrease in anuual decreasing rate over the follow-up period (0.41D, t=13.30,P<0.05). Refraction reduced rapidly during 9 to 14 years old and the reduction rate slowed down after 15 years old. Logistic regression analysis showed that intensive training and follow-up time were two factors influencing the decrease of hyperopic power.

CONCLUSIONS: Refraction degree exhibits a tendency of decreasing in high children with high hypermetropia. Intensive training and follow-up time are two main factors influencing the decrease of hyperopic power.

PU-024

Toric 设计角膜塑形镜治疗青少年近视伴较高散光 1 年临床疗效的观察

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目的：观察 Toric 角膜塑形镜矫治近视伴有较高散光青少年的临床疗效。

方法：回顾性研究。球面塑形镜组 24 例（40 眼），Toric 塑形镜组 11 例（18 眼）。比较配戴不同设计塑形镜 1 年眼轴增长。

比较 Toric 组戴镜前后 1 周、1 月、6 月、1 年之间的裸眼视力、角膜散光值、平均角膜曲率。分析角膜地形图上平坦 K、角膜直径 4mm、5mm 处角膜曲率（$K_{平}$、K_4、K_5）与 Toric 角膜塑形镜定位弧曲率之间相关性。采用配对 t 检验、独立样本 t 检验、单因素方差分析。

结果：配镜 1 年，两组塑形镜眼轴增长量前后比较均有统计学差异（P<0.05）。两组眼轴增长量无统计学差异（P>0.05）。Toric 组配镜 1 周起裸眼视力显著提高，配镜前后比较有统计学差异（P<0.05）。Toric 组配镜前后角膜散光量无统计学差异（P>0.05），而平均角膜曲率配镜前后比较有统计学差异（P<0.05）。Toric 组定位弧曲率与 $K_{平}$、K_4 无统计学差异（P>0.05），而与 K_5 有统计学差异（P<0.05）。

结论：Toric 与球面角膜塑形镜对青少年近视眼轴控制程度接近。Toric 角膜塑形镜适用于近视伴较高散光患者，提高裸眼视力降低角膜曲率。

Clinical Efficacy Obervation of Toric Orthokeratology in Myopic Adolescent with Moderate to High Astigmatism for1 year.

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OBJECTIVE: To observe the clinical efficacy of Toric design orthokeratology for myopia adolescents with moderate to high astigmatism.

METHODS: This is a retrospective study. Twenty four patients,40 eyes,were fitted with spherical orthokeratology lenses and 11 patients,18eyes,were fitted with Toric design orthokeratology.Comparison of two groups 1 year eye axis of two different design orthokeratology.Patients fitted with Toric design orthokeratology lenses were measured uncorrected visual acuity、corneal astigmatism and mean corneal curvature before lens wear and after wearing the lenses for 1 week, 1 month, 6 months,and 1year.Analyze the relationship among the orthokeratology alignment zones curvature, flat K, corneal curvature with corneal diameter 5mm, 4mm place.Date were analyzed with paired *t* test,independent samples *t* test and one-way ANOVA.

RESULTS: After I year ,AL increased by 0.25 ± 0.14（mm）, 0.23 ± 0.28（mm）in the Spherical group and Toric group,indicating a statistically significant difference compared with those lens wear（t=-10.868，P<0.05、t=-3.485，P<0.05）.The two groups Al growth failed to show the significant difference（t= -0.298，P>0.05）.The uncorrected visual acuity (UCVA) in Toric group befor lens wear is 4.20 ± 0.23.After the lens were removed in 1 week,1month,6months and 1 year,UCVA are 4.78 ± 0.16,4.88 ± 0.09,4.93 ± 0.08,4.90 ± 0.09 respectively,indicating a statistically significant difference compared with UCVA befor lens wear(F=83.185，P<0.05). The corneal astigmatism in Toric group was no significant difference before and after lens wear（F=1.099,P>0.05）.Average corneal curvature was 43.28 ± 1.71D before lens wear,and after lens wear was 41.59 ± 1.96D、41.45 ± 2.36D、41.35 ± 2.14D、40.80 ± 1.91D respectively in 1 week,1month,6months and 1 year, indicating a statistically significant difference before and after lens wear(P<0.05).Toric group's alignment zones curvature is 41.86 ± 0.76D. Corneal flat K, 5mm, 4mm corneal diameter curvature were respectively 42.20 ± 1.56D、41.51 ± 1.59D、40.50 ± 1.53D. Alignment zones curvature was no significant difference with flat K and 4mm corneal diameter curvature（P>0.05）,while has statistically significant difference with 5mm corneal diameter curvature（P<0.05）.

CONCLUSION: Toric design and spheric design orthokeratology have similar effects in AL control with adolescents.Toric design orthokeratology can be fitted on myopic patients with moderate-to-high corneal astigmatism, and can Improve the UCVA, reduce the corneal curvature.

PU-025

不同屈光状态儿童弱视治疗效果的临床分析

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目的：回顾比较分析不同屈光状态儿童弱视治疗的临床效果。

方法：远视性弱视 77 例，近视性弱视 38 例，混合散光性弱视 35 例，平均年龄 7.5 岁，根据视力将弱视分为轻、中、重度。采用佩戴合适眼镜、遮盖、家庭弱视增视仪训练等综合治疗，定期门诊复查指导调整镜片度数及治疗方案。治疗时间最短半年，最长二年，视力达 1.0 为治愈，提高二行以上为进步，视力不提高或提高一行为无效，随访一年视力无下降为治愈。

结果：远视性弱视有效率最高，治愈 68 例，占 88.3%，进步 8 例，占 10.4%，无效 1 例，占 1.3%。近视性弱视治愈 24 例，占 63.2%，进步 11 例，占 28.9%，无效 3 例，占 7.9%。混合散光性弱视治愈 11 例，占 31.5%，进步 20 例，占 57.1%，无效 4 例，占 11.4%。轻度弱视治疗效果显著，有效率达 100%，中度次之为 98.7%，重度为 77.2%。

结论：远视性弱视治疗效果最佳，远视程度随年龄增加而降低。近视性弱视治疗效果次之，近视程度有随年龄增加的趋势。混合散光性弱视治疗效果最差。弱视程度越轻，治疗效果越好，开始治疗时间越早越好，治疗的依从性也是影响治疗效果的重要因素。

Clinical analysis of different refractive amblyopia children efficacy

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OBJECTIVE: To evaluate the efficacy of children amblyopia.in different refractive states

METHODS: 77 patients with hyperopia amblyopic, 38 cases with myopia amblyopic and 35 cases with mixed astigmatism amblyopic were included in the study. The average age was 7.5 years. Amblyopia is divided into mild, moderate and severe based on Visual acuity. The patients were treated with comprehensive treatment such as glasses, cover, amblyopic training at home, and regular reviews were performed in order to adjust lenses and treatment programs. Visual acuity improved to 1.0 and did not lose in the following 1 years was cured, improved more than two lines was progress and vision improved one line or less was invalid. The shortest duration of treatment was six months, the longest was two years

RESULTS: The hyperopic amblyopia patients has the highest efficiency, in which 68 cases were cured(88.3%), progress in 8 cases (10.4%) and invalid in 1 cases(1.3%). 24 cases (63.2%) in myopic amblyopia were cured, 11 cases were improved (28.9%), and 3 cases ineffective (7.9%). 11 cases (31.5%)in mixed astigmatism amblyopic were cured in progress in 20 cases (57.1%), and 4 cases were invalid (11.4%). Mild amblyopia treatment is significant, and the effective rate was 100%, moderate in 98.7%, and severe in 77.2%.

CONCLUSION: The efficiency of hyperemia amblyopic is best and hyperemia degree decreases with age. Myopic amblyopia is less effective, and the degree of myopia increasing with age. Mixed astigmatism amblyopia is least effective. Amblyopia is mild, the treatment is better, meanwhile the treatment is earlier, the result is better. Patient compliance is also an important factor in effective treatment.

PU-026

形觉剥夺树鼩视皮质 17 区可塑性研究

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目的：初步探索树鼩作为一种新的弱视模型的可行性分析研究；探讨形觉剥夺树鼩初级视皮质的可塑性机制，为进一步认识弱视形成及恢复机制提供理论依据。

方法：60 只出生 30 d 左右树鼩随机分为 5 组（每组 12 只）：右眼缝合 1 月组；右眼缝合 2 月组；右眼缝合 1 月打开换缝合左眼 1 月，即换缝合组；对照组 1, 为 A 组同龄大小树鼩正常环境饲养；对照组 2，为 B、C 组同龄大小树鼩正常环境饲养。造模完成后进行视皮质定位取材，观察不同条件下树鼩视皮质组织学、超微结构、神经元细胞凋亡情况以及c-fos 的表达变化情况。

结果：与对照组相比各实验组视皮质组织学及电镜均出现了不同程度的损害 , 且缝合 2 月组损伤更为明显；凋亡染色显示实验组跟对照组无差异性；c-fos 蛋白及 mRNA 表达量在各实验组均出现了降低，且缝合右眼两月组表达量最低，换缝合以后表达量有一个小幅度的升高，对照组间 c-fos 表达无差异性。

结论：不同程度的形觉剥夺性弱视引起了不同的组织病理学变化；弱视引起的神经元损伤具有可塑性；树鼩可作为形觉剥夺性弱视的理想动物模型

A study on the visual cortex area 17 plasticity of form deprivation tree shrew

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OBJECTIVE: To Preliminary explore the feasibility reseach of tree shrew as a new kind of amblyopia model; discussion on the primary visual cortex plasticity mechanism of form deprivation tree shrew, to provide a theoretical basis for further understanding of amblyopia formation and the recovery mechanism.

METHODS: Sixty tree shrews 30 days old were divided for five groups, there are 12 in each group:the group right eye sutured for 1 month(group A); the group right eye sutured for 2 months(group B); the group left eye sutured for 1 month after opening right eye which is sutured for 1 month(group c), or in other words, the group by alternating suture; control group 1 (D1), tree shrews of A group the same old in the normal breeding environment; control group 2 (D2), tree shrews of B, C group the same age feeding in normal condition.To position and draw materials in visual cortex after Modeling is completed; To observe the visal cortex histology ,ultrastructure variation,neuron apoptosis,and c-fos protein expression of tree shrews in different conditions.

RESULTS: Damage of different degrees were found in the histological and electron microscopic studies of the visual cortex in each experimental group, and it was more obvious in the group sutured with 2 months; Apoptosis staining showed that there was no otherness in the experimental groups and the control groups; The expression of c-fos protein and mRNA in the experimental groups showed decreased, it was the lowest in the sutured goup for 2 months, there was a small increase in the expression after the change of suture, and no signifi-

cant difference of c-fos expression was found in the control groups.

CONCLUSION: Different degrees of deprivation amblyopia causes different pathological changes ; the neuronal injury caused by amblyopia is plasticity. The tree shrew can be used as an ideal animal model for the form deprivation amblyopia

PU-027

大龄儿童及青少年屈光参差性弱视的治疗效果

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目的：探讨大龄儿童及青少年屈光参差性弱视的临床治疗效果及影响治疗效果的相关因素。

方法：回顾分析 2014 年 01 月至 2015 年 06 月就诊的 72 例 72 眼 7-17 岁儿童及青少年屈光参差性弱视的治疗效果。所有患者均进行屈光矫正、健眼遮盖、红光闪烁治疗。

结果：治疗前、治疗后 3 个月、半年、1 年视力分别为 0.28 ± 0.18，0.49 ± 0.28，0.60 ± 0.32，0.70 ± 0.35（P ＜ 0.05）；72 例治疗 1 年后，视力进步者占 76.4%。21 例旁中心注视者中，仅 8 例视力有进步（38.1%）；51 例中心注视者中，47 例视力有进步（92.2%）。26 例重度弱视中，视力进步者占 50%，37 例中度弱视者中，视力进步者占 89.2%；9 例轻度弱视者中，视力进步者占 100%；能配合治疗的 58 例中有 55 例视力有进步（94.8%），不配合治疗的 14 例中，无 1 例视力有进步。

结论：大龄儿童及青少年屈光参差性弱视经综合治疗能达到理想的治疗效果。治疗效果与弱视的严重程度、注视性质、患者的配合程度等密切相关。轻中度弱视较重度弱视、中心注视较旁中心注视、依从性好的较依从性差的治疗效果好。

The outcome and related factors in anisometropic amblyopia in elder children and teenagers.

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OBJECTIVE: To investigate the outcome of anisometropic amblyopia therapy in children aged 7-17years old and to identify factors which influence the outcome of treatment.

METHODS: It was a retrospective study. 72 patients with anisometropic amblyopia aged 7-17 years old were included in this study. All the patients received refractive correction, occlusion of the sound eye and red scintillation. In addition, patients with eccentric fixation received Haidinger brush and afterimage therapy. Corrected visual acuity was considered improved as visual acuity was elevated by≥2 lines.

RESULTS: The best corrected visual acuity of the amblyopic eye was 0.28 ± 0.18，0.49 ± 0.28，0.60 ± 0.32，0.70 ± 0.35 before treatment, after 3 months', 6 months' and 1year treatment. Among all the 72 patients, 55 patients' visual acuity improved after 1-year treatment(76.4%). Only 8 patients' visual acuity improved in 21 patients with eccentric fixation (38.1%), while 47 patients' visual acuity improved in 51 patients with centric fixation(92.2%). 13, 33, 9 patients' visual acuity improved in 26 severe, 37 moderate, 9 mild anisometropic amblyopia patients respectively. No one can get improved visual acuity without compliance.

CONCLUSIONS: Good results can be attained through combined therapy in older children with anisometropic amblyopia. The results are related to the initial severity of amblyopia, fixation of the amblyopic eye and compliance.Better outcome can be obtained in patients with mild to moderate amblyopia,centric fixation and good compliance.

PU-028

海拉尔地区中小学生视力低下多种干预方法效果回顾性分析

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目的：对海拉尔地区中小学生视力低下发生情况及影响因素进行调查，探讨多种干预措施对中小学生视力低下的干预效果，为预防控制提供依据。

方法：以海拉尔地区中小学生为对象，采用整群随机抽样的方法在海拉尔地区 29 所中小学和 1 所高中，对在校学生进行裸眼视力检查和眼部情况诊查。采用描述性流行病学方法对中小学生的视力低下发生的情况进行分析，并对其影响因素进行单、多因素分析。

结果：共调查 30 所中小学校的汉、蒙、回、鄂伦春、鄂温克、俄罗斯、乌克兰、朝鲜、达、满、羌等民族 25080 名中小学生，50160 只眼，小学 32,204 只眼、初中 8,220 只眼、高中 9,736 只眼，其中视力低下发生率，小学为 27.46% 初中 31.33% 高中 54.35%。卡方值（p 值）=2.7593653344074756 x 10-13 p <0.001, p 是极小值，所以可以认为不同组间的视力不良发生率具有极显著性。

结论：海拉尔地区中小学生视力低下发生率较高，随着学年的上升、不良的用眼习惯、用眼过度、课间活动较少等是主要的影响因素。

Hailaer area low vision of primary and middle school students a variety of intervention effects were retrospectively analyzed

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The objective is to investigate the occurrence and influencing factors of myopia of primary and secondary school students in areas of Hailar and to discuss about the effect of multiple intervention measures on the fact so as to provide basis for its control and prevention. Based on the primary and secondary school students as the objects in Hailar area, the method of cluster random sampling is used to examine uncorrected visual acuity and eyes of students in 29 primary and middle schools and 1 senior high schools in Hailar area. Descriptive epidemiology is applied to analyze the occurrence of this phenomenon. In addition, single-factor and multiple-factor analysis on the influencing factors are applied.On all accounts, 2,508,000 primary and secondary school students of Han, Mongolia, Hui, Oroqen, Ewenki, Russia, Ukraine, North Korea, Daur, Man and Qiang nationalities from 30 primary and secondary schools are investigated. After analysing 32,204 eyes of primary school students, 8,220 eyes of middle school students and 9,736 eyes of senior high school students, the myopia occurrence rate of primary school students is 27.46%, 31.33% among middle school students isand 54.35% among senior high school students was 54.35%. Chi-square value (p value)= 2.7593653344074756 x 10-13 p <0.001(p=minimal value). Therefore, it could be concluded that the poor vision occurrence rate of different groups had significance. It was concluded that the myopia occurrence rate of primary and secondary school students is high in Hailar area. With the school year rising, poor eye caring habits, over-use of eyes and few activities during breaks are the main influencing factors.

PU-029

视知觉学习方法与传统弱视治疗仪治疗弱视患者效果的分析

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目的：对比研究弱视患者采用视知觉学习方法和传统弱视治疗仪两种方法进行治疗的临床效果。

方法：抽取我院收治的弱视疾病患者68例（年龄3-12岁，平均6.9岁；男性40例，女性28例），随机分为对照组和治疗组，平均每组34例。对照组采用传统弱视治疗仪进行治疗；治疗组采用视知觉学习方法进行治疗。对比两组患者在治疗前后视力和对比敏感度水平的改善幅度、立体视敏度、弱视治疗总有效率、视力水平恢复正常时间、眼科治疗计划实施总时间、不良反应例数。

结果：治疗组患者在治疗前后视力和对比敏感度水平的改善幅度大于对照组，差异显著（$P < 0.05$），弱视治疗总有效率达到96.5%，高于对照组58.8%，组间差异显著（$P < 0.05$）；立体视敏度显著提高，差异显著（$P < 0.05$）；视力水平恢复正常时间和眼科治疗计划实施总时间短于对照组，差异显著（$P < 0.05$）；仅有2例不良反应出现，少于对照组8例，组间差异显著（$P < 0.05$）。

结论：弱视患者采用视知觉学习方法进行治疗，可以在最大程度上改善视力、对比敏感度水平和立体视敏度，缩短治疗时间，减少不良反应。

Compare the clinical effects of two kinds of techniques adaptive therapeutic apparatus and traditional amblyopia therapeutic apparatus

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OBJECTIVE: To compare the clinical effects of two kinds of techniques for the treatment of amblyopia patients with adaptive therapy and traditional amblyopia therapeutic apparatus.

METHODS: 68 patients with amblyopia were selected and randomly divided into control group and treatment group, with an average of each group of 34 cases. The control group was treated with the traditional amblyopia therapeutic apparatus, and the treatment group was treated with the adaptive therapy instrument. Comparing the two groups of patients before and after treatment, the improvement of visual acuity , contrast sensitivity level and stereopsis acuity , the total effective rate of amblyopia treatment, visual acuity recovery time, the total time of the treatment plan, the number of adverse reactions.

RESULTS: the treatment group before and after treatment in patients with visual acuity , contrast sensitivity and stereopsis acuity im-

provement than in the control group, the difference was significant (P < 0.05); amblyopia treatment the total effective rate reached 91.5%, higher than that of the control group 68.6%, significant difference between groups (P < 0.05); visual acuity recovery treatment of normal time and eye department plans to implement a total time is shorter than the control group, the difference was significant (P < 0.05); only 2 cases of adverse reactions, less than 8 cases in the control group, significant difference between groups (P < 0.05).

CONCLUSION: the treatment of amblyopia patients with adaptive therapy can improve the visual acuity and contrast sensitivity, shorten the treatment time and reduce the adverse reaction.

PU-030

部分遮盖疗法治疗大龄儿童弱视的疗效分析

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目的：探讨每天全遮盖健眼不同时间治疗 7 ~ 12 岁单眼弱视儿童的疗效并进行对比分析。

方法：对 88 例诊断为屈光参差性、斜视性或混合性单眼弱视的 7 ~ 12 岁儿童采用部分时间全遮盖健眼，随机分为每天遮盖 2 h 组、4 h 组和 6 h 组。4 周复查 1 次，记录视力恢复情况，连续随访 6 个月。

结果：每天遮盖 2、4 和 6 h 组，治疗 6 个月后视力提高分别为：0.17 ± 0.09、0.25 ± 0.12 及 0.30 ± 0.13，三组间差异有统计学意义（P<0.01）。遮盖 4 h 和 6 h 组间视力提高 , 差异无统计学意义（P>0.05），但与 2 h 组间差异均有统计学意义（P<0.01）。各类型弱视视力提高差异无统计学意义（P>0.05）。

结论：对于 7 ~ 12 岁单眼弱视儿童，每天全遮盖健眼 2 ~ 6 h 均能改善视力，但遮盖 4 h 及 6 h 较 2 h 能更有效地提高视力。

Part of the cover therapy for older children amblyopia curative effect analysis

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OBJECTIVE: To explore the treatment during full cover the healthy eye day 7 ~ 12 years old and curative effect of monocular amblyopia children were analyzed.

METHODS: 88 cases diagnosed as anisometropia, strabismus or combination of monocular amblyopia 7 ~ 12 years old children use some time to cover all the healthy eye, were randomly divided into every day to cover 2 h group and 4 h and 6 h group.4 weeks to review 1 time, record the visual acuity, were followed up for 6 months in a row.

RESULTS: Every cover 2, 4 and 6 h group, 6 months after treatment eyesight improve are: 0.17 ± 0.09，0.25 ± 0.12 and 0.30 ± 0.13mm difference among three groups was statistically significant (P < 0.01).Cover 4 h and 6 h vision improve between groups, there was no statistically significant difference (P > 0.05), but with the difference between the 2 h group had statistical significance (P < 0.01).Each type of amblyopia eyesight improve there was no statistically significant difference (P > 0.05).

CONCLUSION: Monocular amblyopia children for 7 ~ 12 years old, covering all the healthy eye every day 2 ~ 6 h can improve your vision, but cover 4 h and 6 h 2 h can more effectively improve the eyesight.

PU-031

3D 网络训练治疗儿童轻度近视 30 例疗效观察

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目的：初步观察 3D 网络训练在治疗儿童轻度近视的临床效果。

方法：调查总结 2016 年 6 月—2017 年 3 月在我院接受 3D 网络训练治疗患者 30 人（60 眼），年龄 5—7 岁，度数在 -0.75D 至 -1.5D 之间，裸眼视力在 0.5 左右。

结果：30 名患者经过治疗，有效率达到 95% 以上，视力均提高两行及两行以上，视力恢复效果明显。

结论：3D网络训练可以利用人体的视觉焦点，活动疲劳的睫状肌，缓解眼疲劳，从而达到对轻度近视儿童视力的恢复效果。

3D online training in the treatment of children with mild clinical observation of 30 cases of myopia

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The children's hospital ophthalmology in Baoding City

OBJECTIVE: To observe the 3D online training in the clinical effect of the treatment of children with mild myopia.

METHODS: To investigate and summarize the treatment of D network in our hospital June 2016 to March 2017 30 patients (60 eyes), aged 5-7 years, in degrees between -0.75 D to -1.5 D, the uncorrected visual acuity was 0.5 per cent.

RESULTS: of the 30 patients after treatment, the effective rate reached 95%%, improve the above two lines and two lines of visual acuity, visual recovery effect is obvious.

CONCLUSION: 3D network training can take advantage of human visual focus of the activities of the ciliary muscle fatigue, relieve eye fatigue, so as to achieve the effect of the recovery of the visual acuity of children with mild myopia.

PU-032

应用 Plusoptix A12C 摄影验光仪对 3-4 岁中国儿童进行弱视筛查

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目的：评估 Plusoptix A12C 摄影验光仪筛查 3-4 岁中国东部地区学龄前儿童弱视风险因素的表现。

方法：对南京市雨花台区学龄前儿童进行综合性眼部检查。比较环戊通散瞳检影与 Plusoptix 的一致性。根据制造商推荐的 5 种转诊标准，分析 Plusoptix 在筛查弱视风险因素上的敏感性、特异性、阳性预测值、阴性预测值。

结果：共有 1818 名儿童接受了 Plusoptix 检测，其中 11 人无法配合（测量成功率 99.39%）。对 357 名怀疑有眼部疾病的儿童进行散瞳检查。在正视组，球镜度数无显著差异（$P = 0.33$），柱镜度数、等效球镜度数存在显著差异（$P < 0.0001$）。在远视组，球镜度数、柱镜度数、等效球镜度数均存在显著差异（$P < 0.0001$）。对于屈光性弱视风险因素，Plusoptix 的敏感性为 92.86-100%，特异性为 49.57-94.49%，阳性预测值 7.45-40.63%，阴性预测值 99.69-100%。

结论：对于 3-4 岁学龄前中国儿童，plusoptiX A12C 屈光度与散瞳屈光度具有显著差异。通过选择合适的转诊标准，plusoptiX A12C 摄影验光仪能够有效筛查屈光性弱视风险因素。

Pediatric vision screening using the plusoptiX A12C photoscreener in Chinese preschool children aged 3 to 4 years

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This study evaluated the performance of plusoptiX A12C in detecting amblyopia risk factors (ARFs) in Chinese children aged 3-to-4-year. PlusoptiX examination was successfully conducted among 1,766 subjects without cycloplegia to detect refractive error, asymmetry and media opacity. Cycloplegic retinoscopy (CR) was conducted on 357 children suspected of having vision abnormalities. Statistical differences between CR and the device were confirmed using the mean spherical value (+1.41 ± 0.87 D versus +1.14 ± 0.81 D), cylindrical value (-0.47 ± 0.64 D versus -0.84 ± 0.78 D) and spherical equivalent (SE) value (+1.17 ± 0.84 D versus +0.72 ± 0.64 D) (all $P < 0.0001$). In the emmetropia group, the differences were statistically significant for the cylinder and SE (all $P < 0.0001$) but not the sphere ($P = 0.33$). In the hyperopia group, the differences were statistically significant for the sphere, cylinder and SE (all $P < 0.0001$). For refractive and strabismic ARFs detection, the sensitivity, specificity, positive predictive value, and negative predictive value were calculated, respectively.

PU-033

中国东部地区 3-4 岁儿童的弱视患病率及其屈光风险因素

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目的：调查中国东部地区 3-4 岁儿童的弱视患病率，评估其屈光性风险因素。

方法：在江苏省南京市雨花台区进行学龄前儿童弱视筛查，包括视力、屈光度、眼位、眼前节检查、眼底检查等。单侧弱视定义为：较差眼视力 ≤ 0.20 logMAR，且双眼视力差距 ≥2 行，且存在弱视风险因素。双侧弱视定义为：双眼视力均 < 0.40 logMAR，且存在弱视风险因素。

结果：在 2300 名符合纳入条件的儿童中，1810 人（响应率 78.7%）进行了视力检查，其中 115 人无法配合检查而未被纳入分析。共有 25 人罹患弱视（患病率 1.47%，95% CI，0.90% - 2.05%），包括 11 名双侧弱视与 14 名单侧弱视。性别差异无统计学意义（$P = 0.77$）。远视（≥ + 2.00 D; OR 19.53; $P < 0.001$）、散光（≥ 1.00 D; OR 7.27; $P < 0.001$）、屈光参差（≥ 1.00 D; OR 3.00; $P < 0.05$）为弱视的风险因素（$P < 0.05$），近视并非弱视的风险因素（≤ - 1.00 D; OR 1.28; $P = 0.73$）。

结论：中国东部 3-4 岁学龄前儿童的弱视患病率为 1.47%。最大的弱视风险因素为屈光不正，尤其是远视。

Prevalence of amblyopia and its association with refraction in Chinese preschool children aged 36 to 48 months

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PURPOSE: To determine the prevalence of amblyopia and its association with refraction in Chinese preschool children .

METHODS: The Yuhuatai Pediatric Eye Disease Study, a cross-sectional, population-based study, was conducted in children aged 36 to 48 months in Yuhuatai District, Nanjing, China in 2015. Visual acuity (VA) was measured in 1,695 eligible children. A series of comprehensive questionnaires were sent for completion by parents or legal guardians of each eligible child.

RESULTS: Of the 1,695 subjects, manifested amblyopia was detected in 25 children (1.47%, 95% confidence interval [CI] 0.90% - 2.05%), including 11 and 14 with bilateral and unilateral amblyopia. No statistical differences were found in gender (P = 0.770). Among the 14 children with unilateral amblyopia, 8 were anisometropic without strabismus, 3 were strabismic, and 3 were combined strabismic/anisometropic. The 11 children with bilateral amblyopia had binocular refractive. In the regression analysis controlled for age and gender, amblyopia was statistically associated with hyperopia (≥ + 2.00 D; OR 19.53; 95% CI, 7.42 - 51.42; P < 0.001), astigmatism (≥ 1.00 D; OR 7.27; 95% CI, 3.01 - 17.55; P < 0.001) and anisometropia (≥ 1.00 D; OR 3.00; 95% CI, 1.04 - 8.67; P = 0.042), but not myopia (≤ - 1.00 D; OR 1.28, 95% CI, 0.32 - 5.18, P = 0.73).

CONCLUSIONS: The prevalence of amblyopia in 36- to 48-month-old children in Eastern China was 1.47%. The greatest amblyopia risk factor was refractive error, particularly hyperopia.

PU-034

视动性眼球震颤客观量化双眼间抑制程度的研究

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目的：本研究采取视觉心理物理学方法，利用视动性眼球震颤（OKN）高效客观量化地评估双眼间抑制程度，并探索该方法的可靠性及得出的抑制程度与单眼弱视的相关性。

方法：在一定时间频率下给予研究对象双眼相向运动的黑白正弦波条栅视觉刺激，保证一眼对比度比值不变，改变另一眼的对比度比值条件，利用眼动仪观察选取不同条件下正常被试及单眼弱视患者 OKN 的变化情况。

结果：对于正常被试，当双眼视觉刺激的对比度相同时，发生相向 OKN 的比例各占约 50%。随着一眼对比度的逐渐下降，该眼对应的视觉刺激产生的 OKN 方向逐渐减少，另一眼相应增加。对于单眼弱视患者，当双眼视觉刺激的对比度相同时，健眼对应发生的 OKN 方向所占比例远高于弱视眼。观察当相向 OKN 发生比例各占约 50% 时对应的患眼 / 健眼对比度比值，该比值与弱视程度及双眼间抑制程度成正相关。

结论：本研究探索了眼动仪记录的 OKN 这种客观量化双眼间抑制程度的可靠方法，可为单眼弱视的机制研究与临床应用提供客观手段。

Optokinetic nystagmus as an objective way to quantify interocular suppression

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PURPOSE: The study investigated optokinetic nystagmus(OKN) is used as an objective way to efficiently quantify interocular suppression and figure out the relation between the extent of binocular suppression and monocular amblyopia.

METHODS: Sinusoidal gratings were given to both eyes of the subjects at a constant time frequency in opposite directions. When changing the contrast ratio of one eye while that of the other eye remains the same, we evaluated the OKN results of normal and amblyopic subjects recorded by eyelink under different conditions.

RESULTS: Normal subjects given gratings of same contrast ratio to both eyes showed nearly 50% OKN in opposite directions. When decreasing the contrast ratio of one eye, the proportion of the OKN direction of the eye decreased relatively, and that of the other eye increased correspondingly. Amblyopic subjects given gratings of same contrast ratio to both eyes showed more OKN direction of the fellow eye than the amblyopic eye. As the opposite OKN directions accounts for nearly 50%, the ratio of the contrast ratio of amblyopic eye and fellow eye was calculated, and the ratio positively correlated with the extent of interocular suppression and amblyopia.

CONCLUSIONS: The study investigated OKN is a reliable way to objectively quantify interocular suppression and may offer an objective method for research on mechanisms of amblyopia and clinical practice.

PU-035

中国第三代《随机点立体视觉检查图》YRDS 3）

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目的：Julesz 发明的 RDS 改写了立体视觉检查的历史。1985 年颜少明郑竺英研制成中国第一代 RDS 立体图，紧接多种版本在中国问世。

方法与结果：1、应用 21 世纪 3D 高科技图像处理技术，从优化像素结构软件着手和优化载体手段硬件着眼；2、超常量扩增视差像素，成倍提升视差信息强度；3、异化伪装像素，将噪声降低至最低限度；4、应用 10/16 多视点采集信息，拓宽深度视界范围提升清晰度和亮度；5、应用现代 3D 电子透镜光栅载体技术，彻底告别各种 3D 载体眼镜的束缚和瓶颈制约，研制成新一代 RDS 立体图全新升级版。它包括 800”-2400”大视野立体盲检查图和 800”-40”低噪声立体视锐度检测图，迈入了电子化、数字化、裸眼化的时代快车。该图已由我国人民卫生出版社精心组织出版，2016 年 10 月在北京召开了推广应用专家研讨会。它为眼科构建一个普及推广高端立体视检测、传播中央眼整体立体视新概念、研究立体视觉生理机制的新平台。

结论：YRDS 3 更具有先进性、实用性和创新性，拥有独立知识产权和中国特色，已获得国家发明专利。

Third generation of RDS Stereo Test in China (YRDS 3)

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OBJECTIVE: To upgrade Chinese Random-Dot stereogram (RDS) stereo test.

In 1985 Yan Shao-Ming and Zheng Zhu-Ying developed China’s first-generation RDS three-dimensional map and in 2004 the second-generation upgrade version became available.

METHODS: and results: First, RDS pixel structure and the carrier were optimized; Second, parallax pixels were super-doubled in extension to improve the useful information; Third, the noise was reduced to a minimum; Fourth, 10-16 multi-view wide-angle scanning system was used to collect information with high quality; Fifth, modern 3D electronic lens grating techniques were applied instead of old 3D carrier techniques to display freely. The new version includes both large field of view of the three-dimensional blind check and low-noise stereoscopic vision detection map with Parallax range from 800 ‘’ - 40 ‘’. It is electronic, intelligent and can be used with naked eye. It builds a precise detection of stereoscopic vision function. It spreads a new concept of taking central eye as a whole and provides the new platform of studying visual physiological mechanism.

CONCLUSION: 3D technology gives RDS new connotations in the new era. The version of three-dimensional map has got the National Invention Patent with its own innovation and Chinese characteristics.

PU-036

影响屈光性弱视患儿双眼视觉发育因素分析

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目的：通过观察屈光性弱视患儿双眼视力达到正常时的融合功能及远、近立体视，分析影响屈光性弱视患儿治疗过程中双眼视觉发育的因素。

方法：选择我院收治的 164 例经治疗双眼矫正视力达 1.0 的屈光不正和屈光参差性弱视患儿，通过检查记录患儿性别、初诊年龄、视力恢复正常年龄、治疗持续时间、弱视程度、是否采取遮盖、单眼或双眼弱视，统计这些因素与融合功能及远、近立体视觉的关系。

结果：164 例患儿，患儿初诊年龄、视力恢复正常年龄、治疗持续时间、弱视程度均对近立体视的恢复有影响，患儿性别、是否采取遮盖、单眼或双眼弱视对近立体视的恢复结果差异无显著性。以上因素对远立体视及融合功能的恢复影响均无显著性差异。远立体视基本同步视力恢复，近立体视尚未随之同步恢复。

结论：患儿初诊的年龄愈小、视力恢复正常的年龄愈小、治疗持续时间愈短、弱视程度较轻，越有利于近立体视的恢复，患儿性别、单眼或双眼弱视、是否采取遮盖对近立体视的恢复则无影响。以上因素对远立体视及融合的恢复均无影响。弱视患儿治愈后，融合范围的恢复均有不同程度体现，但仍低于正常水平。远立体视的恢复好于近立体视的恢复

Analysis of binocular vision development factors in children with refractive amblyopia

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OBJECTIVE: By observing the fusion function of binocular vision and normal and near vision in patients with refractive amblyopia, the factors influencing binocular vision development in children with refractive amblyopia were analyzed.

METHODS: Through retrospective cohort study, 164 patients with ophthalmology collected fromour hospital,in this sample, 82 males and 82 females all children with amblyopia were regular ophthalmology examination, through Yan Shao-ming prepared to detect children near stereoscopic vision, with the machine as a random point of view,Record the sex of the children, the age of newly diagnosed, the normal age of vision recovery, the duration of treatment, the degree of amblyopia, whether to cover, monocular or binocular amblyopia,To statistically analyze the relationship between these factors and fusion function and far and near stereopsis.

RESULTS: Of the 164 children, the age at which the patient was newly diagnosed, the normal age of vision was restored, the duration of treatment, and the degree of amblyopia had an effect on the recovery of stereopsis($\chi2$=8.220、9.338、4.931、7.615, $P < 0.05$). There was no significant difference between the sexes of children, whether or not they were concealed, monocular or binocular amblyopia（$\chi2$=0.994、2.836、0.187，$P > 0.05$.）.There were no significant differences in the effects of above factors had no effect on the recovery of distant stereopsis and fusion function（$P > 0.05$）.Far stereoscopic vision as the basic synchronization of vision recovery, near the stereoscopic vision has not yet synchronized with the recovery.

CONCLUSIONS: Children with newly diagnosed age smaller, eyesight age is smaller, shorter duration of therapy, the degree of amblyopia is lighter, more conducive to the recovery of near stereoacuity, gender, children with monocular or binocular amblyopia, whether to take cover without any effect on the near stereopsis recovery.Above factors had no effect on the recovery of distant stereopsis and fusion.After treatment of children with amblyopia, the recovery of the scope of fusion are reflected in varying degrees, but still below normal levels.The restoration of far standing stereo is better than that of near stereopsis.

PU-037

儿童单眼视力异常的临床分析

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目的：探讨在眼科门诊因单眼视力异常就诊的儿童患者的临床特点。

方法：回顾性分析 2016-9 至 2017-2 在眼科门诊就诊的单眼视力异常的儿童患者 33 例。

结果：所有患者均经过全面眼科检查，包括视力、矫正视力、眼位、睫状肌麻痹后验光、眼前节及散瞳查眼底等。单眼视力异常儿童 33 例，男 18 例，女 15 例，年龄 4-14 岁，屈光参差 28 例，其中合并单眼弱视 13 例，合并屈光调节性内斜视 4 例，合并颌动瞬目综合症 1 例；眼底病变 5 例，其中牵牛花综合征合并外斜视 1 例，脉络膜缺损 2 例，有髓神经纤维 1 例，陈旧性葡萄膜炎 1 例。

结论：屈光参差是儿童单眼视力异常的主要原因，部分患者特别是远视性屈光参差的患者常合并单眼弱视及内斜视；眼底病变如先天发育性或后天炎症性眼病可造成儿童视觉发育障碍。眼病早期筛查对于儿童单眼视力异常的相关眼病的诊断和预后是非常重要的。

Clinical Analysis of Monocular Vision Abnormal in Children

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OBJECTIVE: To report clinical characteristics of children with monocular vision abnormal.

METHODS: We performed a retrospective study in 33 cases of monocular vision abnormal in outpatient clinic of pediatric ophthalmology during a period of 6 months.

RESULTS: All children underwent comprehensive eye exams including visual acuity (VA), cover testing, and cycloplegic retinoscopy, anterior segment evaluation and dilated fundus examination. Among 33 subjects with monocular vision abnormal, 15 were girls and 18 were boys between 4 and 14 years. Based on the findings from comprehensive eye examinations on 33 subjects, 28 had anisometropia (myopic, hyperopic, astigmatic), in which 13 cases with unilateral amblyopia, 4 cases with refractive accommodative esotropia and one case with monocular Mucus Gunn syndrome. 4 cases had dysplasia of fundus: one boy with myelinated nerve fiber of optic disk, one girl with morning glory syndrome and sensory exotropia, two girls with Coloboma of iris and choroid. One 4-years boy had old uveitis and left eye was atrophy.

CONCLUSION: Anisometropia was significantly associated with monocular vision abnormal in children. Hyperopic anisometropia and esotropia were significantly associated with unilateral amblyopia. The dysplasia of fundus and uveitis which rarely occur were also as-

sociated with monocular vision abnormal in children. Early screening of ocular diseases is very important for the diagnosis and prognosis in children with monocular vision abnormal.

PU-038

误诊为弱视的儿童眼底病 3 例分析

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目的：通过对 3 例误诊为弱视的儿童眼底病的误诊因素分析，提高对儿童眼底病的认识。

方法：3 例病儿经过详细地询问病史、家族史、妊娠生产史，仔细的眼科专科检查及辅助检查，明确诊断。

结果：病例一：患儿 6 岁，轻度远视散光，最佳矫正视力 右眼 0.4，左眼 1.0，诊断右眼弱视行弱视训练 2 年，视力无提高。没有可以解释的弱视原因。经仔细的眼底检查、OCT、眼底彩照、电生理检查，专科会诊确诊X性连锁青少年视网膜黄斑劈裂。

病例二：患儿 7 岁，低度混合性散光，最佳矫正视力右 0.4，左 0.5，诊断双眼弱视行弱视训练 8 个月，视力无提高。在扩瞳验光时进行眼底检查，发现中周部骨细胞样色素性病变，经追问有视网膜色素变性家族史，确诊双眼原发性视网膜色素变性。

病例三：患儿 4 岁，低度复性近散，右眼最佳矫正视力 0.6，左眼 1.0，诊断右眼弱视行弱视训练 5 个月，视力无提高。经耐心的玻璃体视网膜检查、B 超检查、眼底彩照，诊断永存原始玻璃体增生。

结论：弱视的诊断中，应排除器质性病变，详查眼底，并且重视询问家族史、，妊娠生产史，尽可能使患儿配合做 B 超检查、眼底彩照、OCT、电生理等检查，避免误诊。

The Analysis of Three Cases about Children with Ocular Fundus Disease Which were Misdiagnosed as Amblyopia

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PURPOSE: To improve doctors' awareness of children with ocular fundus disease by analysis of three cases which were misdiagnosed as amblyopia.

METHODS: The three cases were asked in detail in terms of the medical history, family history and the history of pregnancy production. Ophthalmic specialized and auxiliary examinations were also performed to assist the diagnosis.

RESULTS: For the case 1, the patient was 6 years old with mild hypermetropic astigmatism. The BCVA of the right eye was 0.4 and the left eye was 1.0, which was diagnosed as the right eye amblyopia. The visual acuity did not improve after two-year amblyopia training. Reasonable causes of amblyopia were not identified. According to the detailed fundus examinations, OCT, fundus photography and electrophysiology, it was diagnosed as the X-linked retinoschisis finally. For the case 2, the child was 7 years old with low-grade mixed astigmatism. The BCVA of the right eye was 0.4 and the left eye was 0.5, which was diagnosed as the bilateral amblyopia. Amblyopia training was carried out for eight months, but there was no improvement. Based on the ocular examinations, bone cells pigmentary lesions in the middle were identified. This case had the family history of retinal pigment degeneration. Combined with the examinations and investigations, it was diagnosed as the primary retinal pigment degeneration of both eyes. As for the case 3, the patient was 4 years old with low-grade compound myopic astigmatism. The BCVA of the right eye was 0.6 and the left eye was 1.0. It was diagnosed as the right eye amblyopia. The visual acuity did not improve after five-month amblyopia training. It finally was diagnosed as the persistent hyperplastic primary vitreous according to the vitreoretinal exams, B-ultrasound and fundus photography.

CONCLUSION: In order to avoid misdiagnosing of amblyopia, eliminating the organic diseases, paying attention to the family history and pregnancy production history are necessary. Also, examinations should be conducted carefully, especially the ocular fundus checks, B-ultrasound, fundus photography, OCT and electrophysiology.

PU-039

不同类型、不同程度弱视对立体视觉的影响

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目的：观察矫正视力到达 1.0 时弱视患者的远、近立体视，探讨不同类型、不同程度弱视对立体视觉影响。

方法：回顾性分析 2014 年 10 月至 2016 年 12 月双眼视力矫正达 1.0 弱视患者共 247 例，屈光不正性弱视 116 例，屈光参差性弱视 84 例，斜视性弱视 30 例，形觉剥夺性弱视 17 例。根据初诊时矫正视力分为轻度、中度、重度三组。颜少明立体视觉图测定近立体视，分为中心立体视、黄斑立体视、周边立体视三组，比较不同类型、不同程度弱视在三组中近立体视有无统计学意义。同视机测定远立体视，分为阳性、阴性两组，比较不同类型、不同程度弱视远立体视觉有无统计学意义。

结果：① 屈光不正性弱视中心立体视存在率最高，4 种类型弱视近立体视比较有统计学意义，而远立视觉比较无统计学意义。②屈光不正性弱视、屈光参差性弱视中轻度弱视中心立体视存在率最高，3 种程度弱视近立体觉比较有统计学意义，而远立体视觉比较无统计学意义。

结论：①不同类型、不同程度弱视对近立体视影响不同，而远立体视无明显差异。②屈光不正性弱视近立体视觉恢复最好，其次是屈光参差性弱视，斜视性弱视、形觉剥夺性弱视主要为周边立体视。③弱视程度越轻，近立体视恢复越好。

The effects on the stereoscopic visual of different types and different degrees of amblyopia

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OBJECTIVE: To observe the amblyopia patients in the far, nearly three-dimensional vision, when the corrected visual acuity reached 1.0 .To study the effects of different types and degrees of amblyopia on stereoscopic vision.

METHODS: A total of 247 patients with amblyopia were enrolled in this study collected from October 2014 to December 2016, in which 116 patients with ametropia amblyopia, 84 patients with ametropic amblyopia, 30 patients with strabismic amblyopia, and deprivation of amblyopia in 17 cases. These cases were divided into mild group, moderate group and severe group according to the correct vision at the first treatment. To measure near stereopsis according to Yan Shao-ming stereoscopic vision. Near stereopsis is divided into center stereoscopic view, macular stereoscopic, and peripheral stereoscopic view, and study whether it is statistically different or not of near stereopsis in patients with various types and different degrees of central stereoscopic, macular stereoscopic and peripheral stereoscopic. To measure far stereoscopic vision with synoptophore. It is divided into positive , negative.and study whether it is statistically different or not of far stereoscopic vision in patients with various types and different degrees of positive (+), negative (-).

RESULTS: ① the relationship between different types of ametropia amblyopia and stereo vision: the rate of center stereoscopic sharpness in refractive amblyopia is higher than all other groups.the near stereoscopic sensation comparison of four types of amblyopia are significantly Statistical different ,the far stereoscopic sensation comparison of four types of amblyopia has no statistical significance . ② The rate of center stereoscopic sharpness of mild amblyopia in ametropia amblyopia and anisometropia amblyopia is higher than all other groups. The near stereoscopic sensation comparison of three kinds of degree of amblyopia has Statistical significance. the far stereoscopic sensation comparison of three kinds of degree of amblyopia is no statistical significance.

CONCLUSION: ① The effects of different types, different degrees of amblyopia on the stereoscopic is different, and there is no significant difference in the far stereoscopic view, ② the recovery of ametropia amblyopia near stereo vision is best, followed by anisometropic amblyopia, strabismic amblyopia and form deprivation amblyopia are mainly the surrounding stereoscopic. ③ The lighter the degree of amblyopia, the better the near stereopsis recovery.

PU-040

人工晶体眼患者残留双眼立体视功能初步研究

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目的：研究人工晶体眼患者双眼动态立体视和大范围立体视生物模型，探索该类患者视觉中枢高级通道层面的残留双眼关系和临床表征之间的联系。

方法：2015 年 12 月至 2017 年 2 月就诊的人工晶体眼患儿 31 例，年龄 4 至 14 岁，男 21 例，女 10 例，均因先天性或外伤性白内障行手术植入人工晶体（右眼 12 例，左眼 9 例，双眼 10 例）。于术后 1 周至 3 月行常规三级视功能检查及生物模型立体视检查。生物模型刺激主体采用 LG2343P 偏振显示器，利用 matlab 算法生成随机点动态运动视差立体视生物刺激和大范围二阶立体视生物刺激，患者在双眼分视条件下观看，记录上述两种模型下残留双眼立体视情况（抑制，注视稳定性，远近精细、动态及二阶立体视），对数据进行分析。

结果：31 例患者常规双眼三级视功能均缺失；生物模型检查 8 例存在残留动态立体视，15 例存在残留大范围立体视，8 例无残留立体视。

结论：人工晶体眼患儿双眼视功能缺损严重。残留立体视生物模型可用于临床人工晶体眼患者双眼间立体视能量关系的测量，明确该类患者高级通道层面残留的双眼关系，对该类患者的临床亚型分类有帮助，可能为个体化视感知觉靶向治疗开辟新的途径。

Preliminary Study on of IOL implantation Patients' Visual Function of Residue Binocular

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OBJECTIVE: To study on the biological model of binocular dynamic stereopsis and extensive stereopsis in patients who have intra-

ocular lens (IOL) implantation. To investigate those patients' visual cortex in advanced channel level of residue oculus uterque relations as well as clinical manifestation.

METHOD: 31children patients (male got 21 cases while female got 10) aging between 4 and 14 years went to hospital from December 2016 to February 2017, having undergone IOL implantation surgery (right eye got 12 cases; left 9; binocular 10) because of congenital cataract and traumatic cataract. They underwent usual triple visual function check and stereoscopic check on biological model after the operation 1 week to 3 months. The stimuli subject of biological model adopted polarized monitor LG2343P, using matlab algorithm to generate random-point dynamic motion parallax stereo vision biological stimuli and large-scale second derivative stereo vision biological stimuli. Patients who were under binocular dichoptic condition watched. Analyzing the data after we recorded stereoscopic condition—inhibition, fixation stability, distance and fine, dynamic, and second derivative stereo vision—of residue oculus uterque among those two models.

RESULT: Routine triple visual functions were deficient among 31 cases of patients; 8 cases existed residue dynamic stereo vision through biological model check. 15 got extensive residue stereo vision, and 8 did not.

CONCLUSION: The deficiency of binocular vision function of children who had IOL implantation was severe. Biological model of residue stereo vision can be used as the measurement for the relation on the clinical IOL implantation children's binocular stereo vision energy, identifying those patients' advanced channel level of residue oculus uterque relations. It will provide help for the patients' clinical subtype classification and may find new way to personalized target therapy of visual perception.

PU-041

不同程度弱视儿童视网膜神经纤维层的 OCT 观察

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目的：观察不同程度弱视儿童视盘周围视网膜神经纤维层 (RNFL) 厚度和黄斑中心凹厚度的变化。

方法：对 2014 年 9 月至 2016 年 12 月在我院收治的 30 例 (58 眼) 4 岁 ~12 岁轻中度弱视眼和 25 例 (50 眼) 正常眼进行光学相干断层扫描 (OCT) 检查，记录视盘周围平均视网膜神经纤维层 (RNFL) 厚度和黄斑中心凹视网膜厚度 , 并与正常对照组进行比较。

结果：轻中度弱视组和对照组视盘周围 RNFL 的平均厚度分别为 105.23 ± 6.40um 和 108.12 ± 8.61um, 两者之间厚度差异无统计学意义 (P > 0.05)，轻中度弱视组和对照组黄斑中心凹处视网膜厚度分别为 214.40 ± 11.34um 和 219.22 ± 15.14um，两者之间厚度差异有统计学意义 (P < 0.05)。

结论：轻中度弱视儿童的视网膜结构存在差异。

OCT test and observation of retinal nerve fiber layer in children with different degrees of amblyopia

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OBJECTIVE: To study the thickness of the peripapillary region retinal nerve fiber layer (RNFL) and fovea in children with different degrees of amblyopia.

MEHTODS: OCT was performed on 30 cases (58 eyes) with mild to moderate amblyopia at age of 4~12 years old in our hospital from September 2014 to December 2016 and 25 normal children (50 eyes) as a control. The RNFL thickness were taken from the fovea and the peripapillary region.

RESULTS: The mean peripapillary region RNFL thickness was 105.23 ± 6.40 μm and 108.12 ± 8.61 μm in amblyopic eyes and the control eyes,and no statistically significant difference between them (P >0.05) . The thickness of fovea was 214.40 ± 11.34 μm and 219.22 ± 15.14 μm in children with mild to moderate amblyopia eyes and the control eyes,and there was statistically significant difference between them (P < 0.05) .

CONCLUSIONS: Children with mild to moderate amblyopia having no significant cause of disease may involve thinner the fovea, but not the peripapillary RNFL.

PU-042

基于双眼视功能缺损的神经可塑性训练在弱视治疗中的应用探索

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目的：观察基于单眼性弱视患者的双眼视功能缺损的可塑性训练前后患者的视功能情况，探索对该类病种采取以改善双眼视功能为主体的神经可塑性训练的可行性。

方法：选取 27 名单眼弱视患者，根据患者的缺损情况进行神经可塑性训练，训练 1 月后复查其双眼视功能及视力，分析神经可塑性训练前后双眼视功能变化情况与视力变化及其它们之间的关系。

结果：所有患者训练前的动静态立体视，双眼平衡点，双眼知觉眼均存在不同程度的异常。患者可塑性训练前后的运动立体视等级均值分别为 0.77 级和 1.77 级，且两者在统计学上具有显著性差异（$p<0.01$）。患者可塑性训练前后的知觉眼位水平偏差均值分别为 81.8pix 和 58.0pix，且两者差异在统计学上具有显著性意义（$p<0.05$）。患者可塑性训练前后的差眼矫正视力均值分别为 0.47 和 0.60，且两者差异在统计学上具有显著性意义（$p<0.01$）。同时发现患者可塑性训练后的差眼矫正视力提升和运动立体视等级提升有一定正相关性。

结论：对单眼性弱视患者采取以改善双眼视功能为主体的神经可塑性训练能提高患者的差眼视力及双眼视功能，且训练前后的差异具有统计学意义。

Exploring the feasibility of neural plastic training based on the deficient binocular visual function in amblyopia

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PURPOSE: Using neural plastic training based on the deficient binocular visual function of amblyopia to treat monocular amblyopia, and observing visual function of amblyopia before and after training, to explore the feasibility of this treatment for amblyopia.

METHOD: Selecting 27 patients with monocular amblyopia, using 3D projector for inspection , and using visual perception biological model to test the dynamic and static stereopsis, binocular balance, binocular perception position . According to the deficient binocular visual function, using the corresponding contrast gain binocular disparity energy model and push-pull long-term plasticity model to perform the plastic training . After 1 month training, reviewing their binocular visual function and their visual acuity, and analyzing the variation of binocular visual function and visual acuity and the relationship between them before and after plastic training.

RESULT: There were some defects in dynamic and static stereopsis, binocular balance, binocular perception position in all patients before training. Before and after training, the means of dynamic stereopsis were grade 0.77 and grade 1.77 respectively, and the differences were statistically significant ($p<0.01$).The means of horizontal disparity of binocular perception position before and after training were 81.8pix and 58.0pix respectively，and the differences were statistically significant ($p<0.05$). The means of corrective visual acuity of amblyopic eye before and after training were 0.47 and 0.60 respectively, and also the differences were statistically significant ($p<0.01$). Furthermore, the improvement of corrective visual acuity of amblyopic eye was associated with the improvement of dynamic stereopsis.

CONCLUSION: With neural plastic training based on the deficient binocular visual function in amblyopia, the corrective visual acuity of amblyopic eye and the binocular visual function in monocular amblyopia were significantly improved.

PU-043

压抑疗法治疗大龄儿童屈光参差性弱视

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目的：比较压抑疗法与遮盖法治疗大龄儿童屈光参差性弱视的临床疗效及依从性。

方法：选取我院就诊的 43 例 10~16 岁中重度屈光参差性弱视儿童，在知情同意前提下分成 2 组，22 例为压抑组，弱视眼过矫 +2.50D ，优势眼以 1% 阿托品压抑，必要时结合使用压抑膜致该眼戴镜视力低于弱视眼两行以上；21 例为遮盖组，弱视眼全屈光矫正，且优势眼每天遮盖 6 h 或以上。两组分别于治疗前，治疗 6 个月后分别行视觉功能评估，记录治疗前后的最佳矫正远视力（BCVA，采用小数记录法），Titmus 立体图记录近立体视锐度，同时对两种方法的依从性进行评分比较。

结果：压抑组疗效的总有效率为 77.27% ；遮盖组为 80.95% ；运用卡方检验，两者差异无统计学意义（$X^2 = 0.01$ ，$P > 0.05$ ）。治疗前两组患者均无立体视，经过治疗后压抑组立体视重建者为 13 例；遮盖组 5 例；两者差异有统计学意义（ $X^2 = 5.50$,$0.01 < P < 0.05$ ）。 两组的依从性平均分为 1.762 ± 0.70 和 2.409 ± 0.66。

结论：压抑疗法与遮盖法在治疗大龄儿童单眼中重度弱视同样有效；但前者对于患儿立体视重建作用优于遮盖疗法；且前者有更好的依从性，值得临床推广。

Depression therapy for older children with Anisometropia amblyopia

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OBJECTIVE: To compare the clinical efficacy and compliance of depression and cover therapy in older children with anisometropic amblyopia.

METHODS: 43 cases of 10~16 years old in severe refractive amblyopia children , divided into 2 groups voluntarily , 22 cases of depression group, another 21 cases cover the dominant eye 6h or above a day after refractive correction. Examinating the BCVA, stereoacuity,and the compliance befor and after 6 months of treatment.

RESULTS: The depression is worthy of clinical promotion.

PU-044

坐月子可能增加 6 月龄婴儿高度散光风险

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目的：中国传统有坐月子的说法，随着生活水平的改善，国人坐月子时间逐渐延长，有的甚至持续至 3-6 个月。尽管屈光不正的发生与发展与遗传有关，但视觉刺激，光线照明和户外活动都可能与其有关。尽管婴儿散光发生率远高于成人，但是“坐月子”的环境也可能会影响婴儿的屈光变化。本研究的主要目的是看坐月子环境和正常环境中成长的孩子散光是否存在显著差异。

方法：对 1531 名 6 个月大的婴儿及其家长进行研究，使用手持摄影屈光筛查仪测定儿童屈光不正，对家长进行问卷调查，内容包括婴儿的出生情况、分娩方式、母亲的健康状况和生存环境，是否有坐月子习惯等。对结果使用多因素logistic回归分析。

结果：以散光的 1.5 d 为标准，在所有结果中，只有早产和母亲坐月子者，与散光患病率显著相关（$P < 0.05$）。具有早产（1.85 D）和母亲坐月子（第 1.86D）因素的平均振幅显著高于对照组（$P < 0.05$）。此外，即使是早产儿，两眼间散光矢量的差异也与母亲是否坐月子显著相关。

结论：母亲依照传统坐月子甚至延长坐月子时间的做法是有待商榷的，因为它明显增加 6 个月婴儿的高度散光风险以及两眼间散光的差异。

Sitting-the-month increases the risk of high-astigmatism in 6-month old infants

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INTRODUCTION: Chinese tradition suggests for the health of the mother and infant a month of intense rest after childbirth. The term “sitting-the-month” entails spending one month indoors, not bathing, limiting bright light, avoiding cold, and restraining from certain foods. It is intended to restore balance after childbirth. However, the development of refractive error is linked to genetics, visual cues, lighting, and time spent outdoors. Whether the conditions of “sitting-the-month” result in refractive changes for infants is largely unstudied. It is also known that infants have a higher prevalence of astigmatism when compared to adults. In this study, we investigated if there is a significant difference in astigmatism between the children raised in normally lightened environments and those raised in the environment following the tradition of sitting-the-month.

METHOD: A total of 1531 6 month-old babies and their parents were recruited into the study. The children’s refractive errors were measured with handheld photoscreener. The parents complete a survey that gathered information on the health measurements of the baby at birth, the delivery method, general health condition of the mother, and whether the living environment was setup following the tradition of sitting-the-month .A multiple logistic regression was applied to analyze which of the parameters were significantly associated with the high astigmatism.

RESULTS: With 1.5 D of astigmatism selected as the criterion of having astigmatism, among all the parameters, only pre-mature birth and whether the mother had followed sitting-the-month, were significantly associated with the prevalence of astigmatism ($p < 0.05$). The mean amplitude of subjects who were born prematurely (1.85 D) or whose mother followed the tradition of sitting-the-month (1.86 D) was significantly higher than the corresponding control groups ($p<0.05$). Moreover, larger inter ocular difference in astigmatism vector was only significantly associated with the factor if the mother followed the tradition of sitting-the-month, not even premature birth.

CONCLUSION: While the benefits of sitting-the-month for the mother who gives birth are still debatable, it significantly increases the risk for the 6-month infant to have high astigmatism and larger inter ocular difference in astigmatism.

PU-045

RGP 治疗屈光参差性弱视的疗效观察

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目的：探讨 RGP 对屈光参差性弱视的治疗效果。

方法：对 10 例 10 眼屈光参差性弱视患者行 RGP 佩戴治疗。年龄：8-19 岁，平均 12 岁。5 例患者曾佩戴框架眼镜，并行弱视治疗，视力未见明显提高。5 例患者未曾佩戴眼镜。所有患者佩戴 RGP 后未行其它弱视治疗。随访观 3mon，进行回顾性分析.

结果：5 例佩戴过框架眼镜的患者，佩戴 RGP 前矫正视力为 0.51 ± 0.20，配戴 RGP 3 月后，矫正视力为 0.8 ± 0.14，较佩戴 RGP 前提高，差别有统计学意义。5 例未曾佩戴过框架眼镜的患者，初次试戴框架眼镜的矫正视力为 0.42 ± 0.33，初次试戴 RGP 后，视力为 0.58 ± 0.36，较初次试戴框架眼镜提高，差别有统计学意义。佩戴 3 个月后矫正视力 0.76 ± 0.26. 较初次戴镜所提高 , 差别有统计学意义。所有患者镜片佩戴良好，无严重角结膜炎症。患者自觉佩戴舒适，无不适感，视物清晰。

结论：屈光参差性弱视患者佩戴 RGP 后矫正视力较佩戴框架眼镜好，且 RGP 对佩戴框架眼镜视力提高不佳的患者有一定疗效。佩戴 RGP 后，不再要求遮盖，提高了依从性。因此，对于大龄儿童青少年的屈光参差性弱视，可以优先考虑佩戴 RGP。

The Clinical observation of wearing RGP for pediatric patients with anisometropic amblyopia

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AIM: To observe the clinical efficacy of wearing RGP to treat anisometropic amblyopia.

METHODS: A total of 10 patients(including 10 eyes)were enrolled in this study. The age of these pediatric patients is between 8 and 19,with an average age of 12 years old.5 of them have worn frame glasses and received the training to treat amblyopia, but the vision is not improved significantly.5 have never worn glasses. All the patients didn't receive any treatment such as eyes patched. The conditions of vision were observed 3 months after wearing RGP.

RESULTS: 5 patients that have worn frame glasses, the corrected visual acuity was 0.51 ± 0.20.After wearing RGP 3 months, the corrected vision was 0.8 ± 0.14.The result was statistically significant. There was no decrease in the corrected vision.The corrected visual acuity of 5 patients that didn't have worn frame glasses was 0.42 ± 0.33.The corrected vision of them was 0.58 ± 0.36 for the first time wearing RGP. The corrected vision was 0.76 ± 0.26 after wearing RGP 3 months. The result was statistically significant. The patients felt comfortable and no serious complications occurred.

CONCLUSIONS: Compare to frame glasses, RGP significantly improves the vision correction process of the amblyopic eye in patients with anisometropic amblyopia. In addition, for patients who already wear frame glasses for their amblyopia eye but do not see significant improvement on their visual acuities, RGP could also be an alterative treatment. RGP uses the "Tear Lens" theory, providing the most optimal optical effect for the correction of amblyopic eye, especially for the astigmatistic eye. As RGP has short eye wire distance, thus avoiding the prism effect and reducing the retinal imagining magnification and optical aberration, it greatly improves the quality of the visual perception in the amblyopic eye. Meanwhile, the fellow eye would no longer need to be patched, making the pediatric patients more cooperative to their treatment. Due to the effectiveness of the RGP, it should take precedence in treatment plans in pediatrics of age 7 and higher with anisometropic amblyopia.

PU-046

屈光参差性弱视的双眼视功能与双眼平衡关系的研究

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目的：以屈光参差性弱视为研究对象，采用相位整合任务和对比度增益控制衰减模型定量测量弱视双眼间的抑制作用，探讨弱视抑制的影响因素。

方法：18 名屈光参差性弱视和 18 名正常被试参加，分别测量每个被试双眼的矫正视力和立体视；采用光学立体镜分视双眼，让被试完成双眼相位整合任务，计算双眼间有效对比度比值。对有效对比度比值与视力、立体视锐度分别进行相关性分析。采用 Bangerter 滤过膜降低弱视组对侧眼的视力至弱视眼的视力水平，观察其双眼间有效对比度比值的变化情况。

结果：屈光参差性弱视组的有效对比度比值明显低于正常组；其有效对比度比值与弱视眼视力、双眼间视力的差值以及残留的立体视锐度呈负相关关系。弱视组对侧眼压贴 Bangerter 滤过膜后双眼视力平衡，有效对比度比值升高，但仍低于正常，且此时的有效对比度比值与初始的有效对比度比值呈正相关关系。

结论：屈光参差性弱视的弱视眼视力越差，双眼间视力的差值越大以及残留的立体视锐度越差，对侧眼对弱视眼的抑制程度越大；平衡双眼视力，可以部分降低屈光参差性弱视的双眼间抑制程度，其残留的的抑制作用与他们初始的抑制程度有关。

The relationship between binocular functions and binocular balance in anisometropic amblyopia

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PURPOSE: To investigate the factors that affect the binocular suppression in amblyope, the binocular phase combination paradigm and the modified contrast gain control attenuation model for amblyopia were applied to quantitatively measure the interocular interaction.

METHODS: 18 anisometropic amblyopes and 18 normal participations were recruited. Monocular and binocular visual acuity, and stereoacuity were measured. A dichoptic phase combination paradigm was presented by an optical stereoscope, and the modified contrast gain control attenuation model for amblyopia was used to calculated the effective contrast ratio. The correlation analysis was conducted between the effective contrast ratio and visual acuity, and stereoacuity. Bangerter filters were used to decrease the visual acuity of the fellow eye until the visual acuity of the fellow eye was equal to that of the amblyopic eye. Under this condition, the interocular interaction of anisometropic amblyope was measured.

RESULTS: The effective contrast ratios of anisometropic amblyopia were significantly lower than that of normal participants. In anisometropic amblyopia, the effective contrast ratio is negatively related to the visual acuity of the amblyopic eye, the interocular acuity difference and residual stereoacuity. When the Bagerter filters were attached in the front of the fellow eyes which balanced the interocular acuity, the effective contrast ratio of anisometropic amblyopia was increased, however, which was still lower than that of normal person and positively related to the original effective contrast ratio.

CONCLUSIONS: The more serious the amblyopic visual acuity is, the larger the interocular acuity difference is, and the poorer the residual stereoacuity, the stranger the binocular suppression will be.Balancing the interocular acuity could partially alleviate the suppression from the fellow eye to the amblyopic eye, and the residual suppression was related to the original suppression.

PU-047

屈光参差性弱视的屈光状态以及治疗方式的比较

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目的：屈光参差性弱视的屈光状态与弱视的关系，以及传统遮盖治疗与推拉模型训练对屈光参差性弱视治疗结果的比较。

方法：搜集了北京同仁医院 2015 年 11 月至 2016 年 11 月三周岁及以上屈光参差性弱视患儿 72 例，男性患儿 36 例，女性患儿 36 例。对患者的屈光度，屈光参差类型，以及传统遮盖治疗与推拉模型训练治疗结果 (三个月) 进行统计学分析。

结果：重度弱视 (矫正视力 <=0.1) 28 例，中度弱视 (矫正视力 0.2 ~ 0.5) 27 例，轻度弱视 (矫正视力 0.6 ~ 0.8) 17 例。远视性屈光参差占 67%。采用遮盖治疗 36 例，非遮盖治疗 36 例。

结论：在屈光参差弱视中，远视性屈光参差占大多数。推拉模型训练是一种遵从性比遮盖疗法好的治疗方法。

Comparison of refractive status and treatment of anisometropic amblyopia

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OBJECTIVE: To compare the refractive status of anisometropic amblyopia and the results of traditional covering therapy and push-pull model training in the treatment of anisometropic amblyopia.

METHODS: Seventy - two children with anisometropic amblyopia were enrolled in this study,36 male and 36 female in Beijing Tongren Hospital from November 2015 to November 2016. The patient's diopter, anisometropic type, and two treatment results were statistically analyzed.

RESULTS: 28patients with severe amblyopia (corrected visual acuity <= 0.1), 27moderate amblyopia (corrected visual acuity 0.2 ~ 0.5), 17mild amblyopia (corrected visual acuity 0.6 ~ 0.8). Hyperopic anisometropia accounted for the majority. 36 cases were treated with covering and 36 cases were treated without covering. Comparison of three months after treatment in children with visual acuity are made.

CONCLUSION: Hyperopic anisometropia accounted for the majority.Push-pull model training is a better treatment than compliance therapy.

PU-048

屈光不正性弱视儿童的屈光状态与双眼视觉功能

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目的：了解屈光不正性弱视儿童的屈光状态与双眼视觉功能。

方法：回顾我院屈光不正性弱视儿童 32 例 53 眼，对其屈光状态及双眼视觉功能进行检查及分析。

结果：单纯远视 1 眼，单纯近视 0，远视散光 43 眼，近视散光 3 眼，混合散光 6 眼。按年龄分组，5 岁及以上 19 人 30 眼，5 岁以下 13 人 23 眼，不同年龄组弱视儿童屈光状态分布不同 , 但无明显统计学差异。屈光不正引起弱视以轻中度为主，重度以远视性散光为主。20 例儿童配合行双眼视功能检查，单眼性 8 人，双眼性 12 人，不同弱视眼数组双眼视觉功能（II 级远融合范围、III 级远立体视、颜氏近立体视、RDS 大视野立体视、RDS 立体视锐度、交叉视差、非交叉视差）无明显差异（$P > 0.05$）；< 5 岁 9 人，≥5 岁 11 人，不同年龄组双眼视觉功能有统计学差异（$P < 0.05$）；轻中度 17 人、重度 3 人，不同弱视程度组双眼视觉功能有统计学差异 ($P < 0.05$)。

结论：屈光不正性弱视儿童屈光状态分布不同，但无明显统计学差异。屈光不正性弱视以轻中度为主，患儿立体视功能与年龄及弱视程度有关，与单或双眼性无明显关系。

The Refractive Status and Binocular Visual Function of Children with Ametropic Amblyopia

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PURPOSE: To investigate the refractive status and binocular visual function of children with ametropic amblyopia.

METHODS: From November 2015 to July 2016, 32children (53 eyes) were enrolled in the Department of Ophthalmology, Beijing Tongren Hospital, and their refractive status and binocular visual function were examined and analyzed.

THE MAIN INDICATORS: spherical lens, cylindrical lens, axial, corrected visual acuity; II-level far fusion range, III-level stereoscopic vision, Yan's near stereoscopic, RDS large visual field stereoscopic, RDS stereoscopic vision, cross parallax, non-cross parallax.

RESULTS: 53eyes in 32children with ametropic amblyopia, there were 3 eyes (1.9%), 3 eyes (0%), 43 eyes (82.7%) of hyperopia astigmatism, 3 eyes of myopic astigmatism (5.8%), 6 eyes of mixed astigmatism (9.6%). According to the age , the distribution of refractive status of amblyopia children in different age groups was different, but there was no significant difference between them.Mild to moderate amblyopia are usual caused by ametropic amblyoia, severe amblyopia are mainly with hyperopic astigmatism . 20 children were matched with binocular vision function, there was no statistical differences between binocular and monocular amblyoia in II-level far fusion range, III-level stereoscopic vision, Yan's near stereoscopic, RDS large visual field stereoscopic, RDS stereoscopic vision, cross parallax, non-cross parallax ($P> 0.05$); there was statistical differences between age groups of children in II-level far fusion range, III-level stereoscopic vision, Yan's near stereoscopic, RDS large visual field stereoscopic, RDS stereoscopic vision, cross parallax, non-cross parallax ($P <0.05$). There were statistically significant differences bewteen different degree amblyopia in II-level far fusion range, III-level stereoscopic vision, Yan's near stereoscopic, RDS large visual field stereoscopic, RDS stereoscopic vision, cross parallax, non-cross parallax ($P<0.05$).

PU-049

传统弱视训练和推拉模型训练治疗屈光参差性弱视双眼视觉功能恢复比较

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目的：比较传统弱视训练和推拉模型训练下屈光参差性弱视的双眼视觉功能恢复情况。

方法：纳入患儿 64 例，在矫正屈光不正基础上试验组采用推拉模型训练，对照组采用传统遮盖 + 视觉刺激训练。同视机检测远立体视，RDS 立体视图谱检查 RDS 大视野立体视、RDS 锐度立体视、RDS 交叉立体视，RDS 非交叉立体视等近立体视，评分量化比较。

结果：治疗 6 月后，试验组弱视眼平均视力提高 4.2 ± 2.6 行，对照组弱视眼提高 4.52 ± 1.9 行，远立体视试验组平均评分提高 9.3 ± 4.7 分，对照组提高 10.1 ± 5.6 分，两组对比均无统计学差异；RDS 大视野立体视试验组平均评分提高 14.2 ± 9.7 分，对照组提高 12.1 ± 7.5 分，RDS 锐度立体视试验组平均评分提高 19.3 ± 10.2 分，对照组提高 13.5 ± 8.4 分，RDS 交叉立体视试验组平均评分提高 14.9 ± 6.8 分，对照组提高 11.8 ± 5.7 分，RDS 非交叉立体视试验组平均评分提高 17.1 ± 7.9 分，对照组提高 13.4 ± 6.6 分，对比均有统计学差异。

结论：和传统的遮盖训练方法相比，推拉模型训练方法不仅能达到同样的视力的提高，还能更好的建立双眼视觉功能。

Comparison of Traditional Training and Push-pull Training for The Binocular Visual Function in Anisometropic Amblyopia

Zhao Bowen, Fu Jing

Comparison of Traditional Training and Push-pull Training for The Binocular Visual Function in Anisometropic Amblyopia

PURPOSE: To compare the binocular visual function in anisometropia amblyopia used by Push-pull Training and traditional training.

METHODS: A total of 64 children with anisometropia amblyopia were enrolled in our study and randomly divided into two groups. After wearing glasses to correct refractive errors in the first three months, the experimental group were treated with push-pull training, and the the control group were treated with traditional covering method and visual stimulation for a period of 6 months. Then binocular visual functio was measured by synoptophore and random-dot stereograms(RDS).

RESULTS: The average visual acuity of the amblyopic eyes in the experimental group was increased 4.2 ± 2.6 lines and the control group was increased 4.52 ± 1.9 lines (p>0.05). The average score of far stereoscopic in experimental group increased 9.3 ± 4.7 points and the control group increased 10.1 ± 5.6 points(P ＞ 0.05.)There was no statistical difference between the two groups.

The average score of large-scale RDS stereoscopic in experimental group increased 14.2 ± 9.7points and the control group increased 12.1 ± 7.5points (P ＜ 0.05). The average score of the acuity stereopsis RDS in experimental group was increased 19.3 ± 10.2 points and the control group increased 13.5 ± 8.4 points(P ＜ 0.05). The average score of cross stereoscopic RDS in experimental group increased 14.9 ± 6.8 points and the control group increased 11.8 ± 5.7 points (P ＜ 0.05). The average score of uncross stereoscopic RDS in experimental group increased 17.1 ± 7.9 points and the control group increased13.4 ± 6.6 points (P ＜ 0.05). There was statistical difference between the two groups.

CONCLUSIONS: compared with traditional cover training methods, the push-pull training method can not only achieve the same visual acuity, but also establish better binocular vision function.

PU-050

儿童弱视发病危险因素的病例对照研究

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目的：探讨儿童弱视患病的主要相关因素，为弱视的一级预防提供参考依据。

方法：采用 1:1 匹配的病例对照研究方法，选取 2010 年 -2015 年间在本院小儿眼科门诊新确诊的弱视儿童 100 例，同时选取与病例同性别、年龄（相差 ±0.5 岁）、同一居住地的健康儿童进行研究。应用条件 Logistic 回归分析法分析弱视患病的相关影响因素。

结果：多因素 Logistic 回归分析结果显示，儿童居住环境采光条件不良、母亲怀孕次数多、儿童发锌过低是弱视发生的主要危险因素，而多食海产品则是保护性因素。

结论：改善儿童居住环境的采光条件，儿童补锌及增加日常膳食中海产品等可一定程度上影响儿童弱视疾病的发生风险。

The case-control analysis on the relative factors of amblyopia

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OBJECTIVE: To investigate the main factors for amblyopia in children sick, and provide reference for the primary prevention of amblyopia.

METHODS: A 1: 1 matched case-control study, select the Year 2010 - 2015 in our hospital pediatric ophthalmology clinic newly diagnosed children with amblyopia 100 cases, while the selection and cases of the same sex, age (a difference of ± 0.5 years), the same residence healthy children were studied. Application of Conditional Logistic Regression Analysis Risk Factors Related amblyopia disease.

RESULT: Logistic regression analysis showed that children living environment bad lighting conditions, pregnant mothers more often, children hair zinc is too low is a major risk factor for amblyopia, and eat seafood, is a protective factor.

CONCLUSION: To improve children's living environment lighting conditions, affect the risk of amblyopia in children diseases of children and increase daily dietary zinc supplementation seafood can to a certain extent.

PU-051

近视相关性弱视的疗效观察

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目的：观察综合治疗近视相关性弱视的疗效

方法：近视相关性弱视患者 50 例，共 83 只眼，其中：男、22 例 38 眼；女、28 例 45 眼，年龄 3-11 岁，平均 7 岁。其中单纯高度近视无散光 5 例 8 眼；高度近视伴高度数散光者 45 例 75 眼。完全不进行近距离及电脑上多媒体的弱视训练。以家庭用的视加弱视治疗仪器，结合在医院使用同视机上的海丁格刷，红光闪烁治疗仪，后像治疗仪，日本产超声近视治疗仪。红光闪烁训练，海丁格刷训练，超声治疗仪每次均为 10 分钟，一天 2 ~ 3 次，每次治疗后进行远眺 5 分钟，10 天为 1 疗程，每疗程结束，检影验光结合插片检查矫正视力，严密监测患儿视力及屈光度的波动情况，平均治疗 2 ~ 6 个月，每天不间断，一直到矫正视力完全达到正常后 10 天，结束医院治疗，在家治疗坚持 3 个月后复查视力及屈光度。

结果：50 例弱视患者治疗时间 2-6 个月，矫正视力治疗前为〈0.1-0.6，治疗后至 0.8-1.0。弱视越轻，治愈的时间越短。随访 2-5 年，无一例弱视复发。结论：综合治疗近视相关性弱视对弱视的治疗和近视的控制效果良好。

The curative effects of integrated therapy in myopia related amblyopia

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OBJECTIVE: The aim of this study was to investigate the curative effects of integrated therapy in myopia related amblyopia.

METHODS: Total 50 myopia related amblyopia patients (83 eyes) were reviewed, of them, there were 22 male patients (38 eyes) and 28 female patients (45 eyes). The age ranges from 3 to 11 years old, and the average age is 7 years old. Among the 50 patients, 5 patients (8 eyes) were high myopia without astigmatism, and the other 45 patients (75 eyes) were high myopia concurrent with high astigmatism. Deprived of short-distance and multi-media computerpractice of amblyopia, patients were treated at home using vision plus amblyopia machine, combined with haidinger brush in synoptophore,red light therapeutic apparatus, afterimage therapy instrument and Japanese ultrasonic myopia therapeutic apparatus in hospital. Red flashing, haidinger brushand ultrasonic training were performed 10 min/2-3 times/day, after each treatment, patients were asked to look far into the distance for 5 min. Ten days treatment was defined as a course, after every course, the retinoscopy and male tab were utilized to detect correctedvision. Visual acuity and refraction fluctuation were closely monitored. Patients undergone this treatment every day until ten days post corrected vision reached normal level and the average treatment period ranges from 2 to 6 months. When finishing hospital treatment, home based treatment should be continued for additional 3 months, and re-test the visual acuity and refractionof myopia.

RESULTS: After treatment for 2-6 months, corrected vision was improved (before treatment <0.1-0.6 VS after treatment 0.8-1.0). The lower extent for amblyopia, the less time used for treatment. The follow-up time lasted for 2-5 years, and no amblyopia relapsed during this period.

CONCLUSION: Integrated therapy treatment has a good effect on myopia related amblyopia.

PU-052

双眼视功能异常引起功能性视力不良临床分析

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目的：分析功能性视力不良患者调节功能、集合功能特点，研究双眼视功能异常与功能性视力不良的关系。

方法：回顾性研究。收集2016年10月至2017年2月于河北省眼科医院视觉训练工作室就诊的功能性视力不良的患者20例，平均年龄(12．2±4．9)岁。所有患者均排除眼部疾病、弱视危险因素和全身性疾病。在屈光矫正的基础上进行双眼视功能检查。分析、诊断后进行视觉训练治疗以提高矫正视力。采用配对 t 检验、Spearman 相关性分析等进行统计分析。

结果：患者屈光度为 +0．50—+2．75 D，-0．50—-1．25 D。根据双眼视功能检查结果发现 20 例患者中，有 13 例诊断为集合不足并伴调节功能异常，有 4 例诊断为调节过度，2 例为基本型外隐斜，1 例为散开不足。经过 1-2 个月的视觉训练治疗，所有患者远、近矫正视力均提高到 1．0。视力恢复后集合功能正常；单眼调节灵敏度、双眼调节灵敏度、正负相对调节等调节功能均恢复到正常。

结论：功能性视力不良患者常伴有双眼视功能异常，进行视觉训练治疗，可以有效的提高视力。

Clinical analysis of functional visual loss caused by abnormal binocular vision

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OBJECTIVE: to analyze the characteristics of accommodation and convergence in patients with functional visual impairment, and to study the relationship between binocular vision dysfunction and functional visual acuity.

METHODS: a retrospective study. Methods: 20 patients with functional visual acuity were enrolled in the visual training room of Hebei eye hospital from October 2016 to February 2017, with an average age of (12.2 + 4.9) years old. All patients were excluded from eye diseases, amblyopia and systemic diseases. On the basis of the correction of binocular vision. Analysis and diagnosis to improve visual acuity after visual training. Paired t test and Spearman correlation analysis were used for statistical analysis.

RESULTS: the patients diopter was +0.50 - +2.75 D，-0.50 - -1.25 D， According to the results of binocular vision examination, 20 cases were diagnosed as insufficient collection and accompanied with abnormal regulation function. There were 4 cases diagnosed as over regulation, and the other one was the basic type of, and the other was L. After 1-2 months of visual training, all patients with far and near corrected visual acuity increased to 1. After the recovery of vision, the function of the collection was normal, and the regulating function of monocular accommodation sensitivity, binocular accommodation sensitivity, positive and negative relative accommodation were restored to normal.

CONCLUSION: the patients with functional visual acuity are often accompanied by abnormal binocular vision.

PU-053

RGP 镜片对圆锥角膜的矫正效果评价分析

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目的：圆锥角膜是一种角膜扩张导致角膜中央部向前呈锥形凸出为特征的角膜病变。由于角膜的扩张前凸产生进行性的近视和角膜不规则散光，本研究目的是观察透气性硬性隐形眼镜对圆锥角膜患者的矫正效果。

方法：对 23 例 (35 只眼) 圆锥角膜验配 rgp，使用 rgp 圆锥片诊断性试戴镜片，根据角膜地形图的检查结构选择首片试戴片，根据荧光染色结果调整镜片，选定配适满意的试戴镜片后进行片上验光，长期佩戴且定期随访，观察对其裸眼视力和屈光度改变的临床观察。

结果：23 例 35 只眼通过配戴 RGP 镜片均获得较好的视力，其中 72% 获得完全的视力矫正。戴 rgp 后矫正视力 0.4 ~ 1.0，平均 0.9。部分矫正 10 眼，矫正为 0.4 ~ 0.8; 完全矫正 25 眼，视力为 1.0。随访时间 1 至 12 月，病人视力均较稳定，同时发现配戴 RGP 镜片后，部分配戴时间较长的病眼，角膜变得较为平坦，角膜散光下降，长期佩戴未发现其它严重并发症。

结论：配戴RGP镜片对圆锥角膜患者矫正视力的提高是一种有效安全的方法，对于进行性圆锥角膜的控制有待进一步观察。

Evaluation of Correction Effect of rigid gas-permeable (RGP) lens on keratoconic eyes

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OBJECTIVE: The keratoconus is a corneal lesion characterized by conical protrusion in the central cornea. The expansion of the cornea induced progressive myopia and corneal irregular astigmatism. Present study aimed to evaluation the correction effect of rigid gas-permeable (RGP) contact lenses on patients with keratoconus.

METHODS: 23 cases (35 eyes) of keratoconus with RGP lens with RGP cone diagnostic detection, then selected matching satisfied try the lens according to the results of fluorescent staining lenses, and then the on-chip optometry. The uncorrected visual acuity and diopter changes were assessed by regular follow-up under long-term wear.

RESULTS: 23 cases of 35 eyes by wearing RGP lenses were better vision, of which 72% of complete vision correction. The mean of corrected visual acuity was 0.9 (0.4 ~ 1.0). 10 eyes (28.6%) were partial correction (corrected visual acuity was 0.4 to 0.8); 26 eyes (71.4%) were complete correction (visual acuity of 1.0). Follow-up time 1 to 12 months, the patient's visual acuity are more stable, and the cornea becomes more flat, corneal astigmatism decreased, and no serious adverse events or complications.

CONCLUSION: RGP lens could improve the corrected visual acuity of patients with keratoconus. The control of progressive keratoconus remains to be observed.

PU-054

单眼刺激与双眼刺激对屈光不正及屈光参差性弱视的短期治疗效果观察

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目的：分析在屈光不正性弱视中单眼刺激或双眼刺激对屈光度及最佳矫正视力的影响。

方法：收集自 2015 年 11 月至 2016 年 7 月间，北京同仁医院屈光不正性弱视患儿 31 人（男性患儿 11 人，女性患儿 20 人，最小患儿 3 岁，最大 7 岁，平均年龄 4.66 ± 1.17 岁），其中双眼弱视 22 人，右眼弱视 2 人，左眼弱视 7 人，治疗方法为验光配镜；将两组患者均随机分成 2 组，1 组为双眼刺激；2 组为单眼刺激。验光配镜后 2 月及 3 月复查屈光度变化，并分析影响治疗效果的因素。

结果：屈光不正组弱视眼平均等效球镜 +5.18 ± 3.54DS。屈光不正组在两种方法治疗前后（包括 2 月复查和 3 月复查），视力在 3 月复查时提高 43.6%，但等效球镜在 3 月复查时与初诊时相比出现统计学差异（p<0.05）；尤其是重度远视眼在治疗前后视力及等效球镜均有统计学差异（p<0.05），视力在 3 月复查时提高幅度达 85.16%。

结论：单眼刺激能降低等效球镜度数，而双眼刺激治疗视力提高幅度更大。

Clinical observation of visual stimulation for ametropic amblyopia in children

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OBJECTIVE: To analyze the different type impact of visual stimulation treatment for ametropic amblyopia in children.

METHODS: From Nov 2015 to July 2016,31 cases of patients with ametropic amblyopia were recruited in our optometry center. There were 11 cases with males and 20 cases with female.The average age was (4.66 ± 1.17)years old (range from 3 ~ 7 years old).The patients were treated with refractive correction .These cases were divided in

Two groups, 1 group received binocular visual stimulation ;2 group received monocular visual stimulation.

RESULTS: After the treatment and three months followed-up, the best corrected visual acuity (BCVA) of all amblyopic patients was improved with different degree. The difference of BCVA in group 1 at initial visit and at the last visit were significant (P<0.05).The total successful rate was 55.1% . The difference of BCVA in group 2 at initial visit and at the last visit were significant (P<0.05).The total successful rate was 43.6% .

CONCLUSIONS: The children with ametropic amblyopia should be treated with visual stimulation, especially more effective for binocular .

PU-055

屈光参差性弱视的临床观察与治疗方式的比较

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目的：屈光参差性弱视的屈光状态与弱视的关系，以及传统遮盖治疗与推拉模型训练对屈光参差性弱视治疗结果的比较。

方法：搜集了北京同仁医院 2015 年 11 月至 2016 年 11 月三周岁及以上屈光参差性弱视患儿 72 例，男性患儿 36 例，女性患儿 36 例。患儿年龄在三周岁至十一周岁之间。对患者的屈光度，屈光参差类型，以及两种治疗结果进行统计学分析。

结果：重度弱视（矫正视力 <=0.1）28 例，中度弱视（矫正视力 0.2 ~ 0.5）27 例，轻度弱视（矫正视力 0.6 ~ 0.8）17 例。远视性屈光参差占大多数（67%）。采用遮盖治疗 36 例，非遮盖治疗 36 例。其中非遮盖治疗采用推拉模型训练的方式治疗患儿。比较治疗三个月后患儿矫正视力的提高情况。发现推拉模型训练治疗软件组视力的提高明显高于对照组 (P<0.05)

结论：在屈光参差性弱视中，远视性屈光参差占大多数。推拉模型训练对屈光参差性弱视治疗的疗效明显好于传统遮盖疗法。

clinical observation of anisometropic amblyopia and comparison of treatments of anisometropic amblyopia

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OBJECTIVE: To compare the refractive status of anisometropic amblyopia and the results of traditional covering therapy and push-pull model training in the treatment of anisometropic amblyopia.

METHODS: Seventy - two children from Beijing Tongren Hospital with anisometropic amblyopia were enrolled in this study. There

were 36 male and 36 famale children from November 2015 to November 2016. The patient's diopter, anisometropic type, and two treatment results were statistically analyzed.

RESULTS: 28patients with severe amblyopia (corrected visual acuity <= 0.1), 27moderate amblyopia (corrected visual acuity 0.2 ~ 0.5), 17mild amblyopia (corrected visual acuity 0.6 ~ 0.8) Hyperopic anisometropia accounted for the majority(67%). 36 cases were treated with covering and 36 cases were treated without covering.The non-covered treatment using push-pull model training way to treat children. Comparison of treatment results in children are made with visual acuity testing.The visual acuity of the model group was significantly higher than that of the control group (P <0.05)

CONCLUSION: Hyperopic anisometropia accounted for the majority in anisometropic amblyopia,andThe effect of push-pull model training on the treatment of anisometropic amblyopia was better than that of traditional covering therapy.

PU-056

儿童眼球生物学测量在弱视治疗分级应用的临床研究

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目的：探讨利用眼球生物学参数在儿童弱视治疗中的应用价值。

方法：回顾自 2009 年—2016 年在我院进行弱视治疗的病例进行观察和分析。入组条件：1、在我院初诊时的视力、眼球生物学测量参数和散瞳验光结果（1% 阿托品眼膏）；2、每年随访，重复上述检查；3、记录各阶段的治疗方案；4、观察周期三年。收集完整资料 63 例。

结果：自 2009 年起，我院结合眼球生物学测量参数的弱视儿童的治疗方案与传统方案不同，弱视治疗更加个体化。

结论：儿童眼球生物学参数在弱视治疗中的应用价值值得推广，可以有效控制弱视儿童近视化趋势。

Clinical study on the application of children's ocular biological measurement in the treatment of amblyopia

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OBJECTIVE: To explore the application value of ocular biological parameters in the treatment of amblyopia in children.

METHODS: The cases of amblyopia treated in our hospital from 2009 to 2016 were reviewed and analyzed. Group conditions: 1,visual acuity, biological measurement parameters and results of medical optometry (1% atropine cycloplegia); 2,follow up every year, repeat the above inspection; 3, Record the treatment plan at each stage; 4, three years of follow-ups. Complete data collection was 63 cases.

RESULTS: since 2009, our hospital combined with the measurement of the parameters of the eye of children with amblyopia treatment program is different from the traditional scheme.

CONCLUSION: the application value of children's ocular biological parameters in the treatment of amblyopia is worthy of popularization, which can effectively control the trend of myopia in children with amblyopia

PU-057

25 例复杂先天性鼻泪管阻塞患儿的骨性鼻泪管解剖研究

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目的：研究先天性骨性鼻泪管发育异常患儿鼻泪管异常发育的共同特点及不同解剖特征。

设计：回顾性病例系列。

研究对象：25 例先天性骨性鼻泪管发育异常的患儿。

方法：25 例先天性骨性鼻泪管发育异常患儿行 CT 检查。

主要指标：异常发育的骨性鼻泪管解剖特征，骨性鼻泪管高度，起始段骨性鼻泪管的横径及垂直径。

结果：根据异常发育骨性鼻泪管的解剖特征不同，可以将其分为基本型（31 眼）及特殊类型（5 眼）两大类。单侧基本型先天性骨性鼻泪管发育异常患儿患侧起始段骨性鼻泪管横径及垂直径均较健侧明显扩大（$P < 0.000$）。其健侧骨性鼻泪管高度明显大于患侧（$P < 0.000$）。

结论：CT 可以清晰显示异常发育骨性鼻泪管的解剖特征，针对其最终手术方式选择提供影像学支持。骨性鼻泪管发育异常可以同时合并其他泪道发育畸形，但是不一定合并全身其他系统疾病。单侧基本型骨性鼻泪管发育异常患儿患侧起始段骨性鼻泪管扩大的原因可能是阻塞侧泪道内压力增高所致。

Anatomical characterization of nasolacrimal canal based on CT: Case series report of 25 children with complex congenital nasolacrimal duct obstruction

Beijing Children'S Hospital

PURPOSE: *The purpose of this study was to characterize anatomical variations of nasolacrimal canal in patients with complex congenital nasolacrimal duct obstruction.*

METHODS: Retrospective case series of 25 children with congenital nasolacrimal duct obstruction. All children had failed probings and were examined by Computed Tomography (CT). An analysis of imaging data is presented.

RESULTS: Anomalous development of the nasolacrimal canal was confirmed on CT. Two main types of malformations were observed: fundamental type (20 patients) and special type (5 patiens). In the fundamental type, upper portion of the nasolacrimal canal was relatively normal, and it became significantly stenotic or even atretic at the middle and terminal segments. In the special type, upper portion of the nasolacrimal duct was malformed. Only the special type showed an association with systemic abnormalities. In patients with unilateral fundamental type malformation (11 patiens), the transverse and anteroposterior diameter of the upper segment of nasolacrimal canal on the affected side was significantly larger than that of the normal side ($P = 0.000$). The height of the nasolacrimal canal on the normal side was significantly larger than that of the affected side ($P = 0.000$).

CONCLUSION: Computed tomography is useful for delineation of anatomical characteristics of the nasolacrimal canals and to diagnose nasolacrimal canal malformation. Malformed nasolacrimal canals are of two main types, fundamental and special types. Hydrostatic pressure in the lacrimal duct appears to the underlying mechanism for enlargement of nasolacrimal canal in the unilateral fundamental type.

PU-058

10 例反复发作儿童急性泪囊炎的病因研究

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目的：研究儿童急性泪囊炎的发病原因，为其诊断和治疗提供新思路和新方法。

方法：回顾性分析 10 例在北京儿童医院就诊的反复发作的儿童急性泪囊炎患儿治疗经过。

结果：3 例患儿通过影像学检查等诊断为先天性泪囊突出继发急性泪囊炎，我们采用先天性泪囊突出破囊术治疗；4 例患儿通过影像学检查等诊断为先天性鼻泪管发育异常继发急性泪囊炎。我们采用经鼻鼻腔泪囊吻合手术治疗。3 例患儿诊断为先天性泪囊憩室继发急性泪囊炎，我们采用经皮肤鼻腔泪囊吻合联合泪囊憩室切除手术治疗。

结论：先天性泪囊突出、先天性鼻泪管发育异常及先天性泪囊憩室均可以导致儿童急性泪囊炎的发生。

Pathogenesis research in recurrent acute dacryocystitis----10 cases retrospective study

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PURPOSE: To explore the etiopathogenesis and provide new examination method and treatment for children acute dacryocystitis.

METHODS: Retrospective case series of 10 children with recurrent acute dacryocystitis. Their medical histories, clinical manifestations and radiological results were investigated.

RESULTS: Of ten 10 cases recurrent acute dacryocystitis, Computed Tomography(CT) results of 3 cases showed that there were cyst images at lacrimal sac area, enlargement of nasolcrimal canal and intranasal cyst of affected sides. They were diagnosed as acute dacryocystitis secondary to congenital dacryocystocele. Marsupialization with endoscope under general anesthesia was performed after topical infection was under control. CT results of 4 cases showed that upper portion of the nasolacrimal canal was relatively normal, and it became significantly stenotic or even atretic at the middle and terminal segments. They were diagnosed as acute dacryocystitis secondary to congenital nasolacrimal canal dysplasia. Endonasal dacryocystorhinostomy under general anesthesia was performed after topical infection was under control. CT results of 3 cases showed that the cysts at lacrimal sac area became masses filled with contrast with connection to the normal lacrimal sac after contrast injection. They were diagnosed as acute dacryocystitis secondary to congenital lacrimal sac diverticulum. Transcutaneous dacryocystorihnostomy combined with excision of lacrimal sac diverticulum under general anesthesia was performed after topical infection was under control. All patients had no complications after surgeries. The acute dacryocystitis did not recur after 6 months follow-up.

CONCLUSION: Congenital dacryocystocele、Congenital lacrimal sac diverticulum and Congenital nasolacrimal canal dysplasia can result in developing acute dacrycystitis. Computed Tomography and CT dacryocystography are very valuable in the diagnosis and therapy of children acute dacrycystitis.

PU-059

角膜塑形镜对不同程度近视性屈光不正儿童视力的有效性研究

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目的：通过观察配戴角膜塑形镜矫治儿童不同程度屈光不正性近视的临床应用情况，评价其有效性。

方法：随机选择 2015 年 6 月至 2016 年 12 月于我院眼科门诊就诊的 7 ~ 12 岁不同程度屈光不正性近视患者 70 例 135 眼，验配角膜塑形镜并夜间戴镜 8 ~ 10h。配镜后 6m 随访，检测患者裸眼近视力、等效屈光度、角膜曲率、眼轴长度的变化。将患者按近视程度分为轻度近视 (＜— 3.00D)、中度近视 (— 3. 00 ~ — 6.00D)、高度近视 (＞— 6.00D)。其中轻度近视 27 例 50 眼，中度近视 32 例 64 眼，高度近视 11 例 21 眼。

结果：随访 6mo 后，与戴镜前相比，患者的裸眼近视力、等效屈光度、角膜曲率的差异有统计学意义 ($P < 0.01$)，而眼轴长度的差异无统计学意义 ($P > 0.05$)。低、中、高度近视组任意两组间近视力的差异有显著意义 ($P < 0.01$)，通过组间比较，高度近视组裸眼近视力、等效屈光度、角膜曲率改善更显著

结论：配戴角膜塑形镜矫治儿童不同程度屈光不正性近视具有有效性，高度近视患者疗效显著。

PU-060

儿童屈光不正的特点及配镜处方分析

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目的：分析 3 岁 ~ 15 岁屈光不正患儿的屈光不正特点及配镜处方。

方法：对本院门诊就诊的 3 ~ 15 岁 223 位屈光不正患儿给予阿托品眼膏或复方托吡卡胺眼水充分散瞳，对其屈光不正特点及配镜处方进行统计分析。

结果：223 位屈光不正配镜患儿中，自觉视力下降者 99 人，体检异常 124 人。配镜处方中，近视 80 只眼，占全部病例 18.91% ；远视 25 只眼，占全部病例 5.91%；散光 318 只眼，占全部病例 75.18%，其中复性散光 113 眼，占散光眼 35.53%，单纯性散光 163 眼，占散光眼 51.26%，混合散光 42 眼占 13.21%。伴有斜视者 20 人，屈光参差者 18 人，弱视者 88 人，占全部病例 39.46%。

结论：3 ~ 15 岁屈光不正的 223 位患儿，体检发现异常者居多，并以散光多见，弱视患儿所占比重较高。

The characteristics of refractive error and analysis of spectacle prescription in children.

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AIM: To analyze the characteristics of refractive error and spectacle prescription in children aged 3-15.

METHOD: Sample including 223 cases aged 3-15 of out-patient with refractive error were chosen，1% atropine ointment or compound tropicamide eye drops was applied before examination. The results of optometry and spectacle prescription were analyzed statistically.

RESULTS: 99 cases were self-discovered and 124 by routine examination. The spectacle prescription including 80 myopia eyes, the proportion is 18.91%; 25 hyperopia eyes account for 5.91%; 318 astigmatism eyes account for 75.18% with 113 compound astigmatism eyes (36.53%), 163 simple astigmatism eyes (51.26%) and 42 mixed astigmatism eyes (13.21%). There were 20 strabismus cases，18 anisometropia and 88 amblyopia cases (39.46%).

CONCLUSION: Routine examination was the main method to discover refractive error in children aged 3-15. Astigmatism was the main type and the proportion of amblyopia was high.

KEYWORDS: refractive error; children; myopia; hyperopia; astigmatism; spectacle prescription

Huang Jing, Song shengfang, Xiang daoman. Guangzhou Women and Children's Medical Center, Guangzhou, 510623.

PU-061

儿童散光眼临床分析

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目的：分析 3 ~ 14 岁屈光不正患儿的散光度及配镜处方。

方法：对本院门诊就诊的 3 ~ 14 岁 167 位屈光不正患儿给予阿托品眼膏或复方托吡卡胺眼水充分散瞳后验光配镜，对配镜

处方进行散光度及轴位统计分析。

结果：配镜处方中，共 318 只规则散光眼，其中复性散光 113 眼，占 35.53%；复性近视散光 85 眼，占 75.22%，复性远视散光 28 眼，占 24.78% ；单纯性散光 163 眼，占 51.26% ；单纯近视散光 122 眼，单纯远视散光 41 眼，分别占 74.85% 和 25.15% ；混合散光 42 眼占 13.21%。顺规性散光 73 眼，占 22.96% ；逆规性散光 241 眼，占 75.79% ；斜轴散光 4 眼，占病例 1.26%。轻度散光（≤1D）93 眼，占 29.25%；中度散光（1 ＜ DC≤2）90 眼，占 28.30%；重度散光（2 ＜ DC≤3）82 眼，占 25.79%；高度散光（≥3D）53 眼，占 16.67%。

结论：3 ~ 14 岁儿童 318 只散光眼的配镜处方中，以单纯近视散光多见，轻中度散光为主，重度及高度散光者所导致弱视比重高。

Clinical analysis of astigmatism in children

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AIM: To analyze astigmatism and spectacle prescription in children aged 3-14.

METHOD: Sample including 167 cases aged 3-14 of out-patient with refractive error were chosen，1% atropine ointment or compound tropicamide eye drops was applied before examination. The results of optometry and spectacle prescription were analyzed statistically.

RESULTS: The spectacle prescription including 318 regular astigmatism eyes with 113 compound astigmatism eyes (35.53%), 163 simple astigmatism eyes (51.26%) and 42 mixed astigmatism eyes (13.21%). In astigmatic eyes, compound myopia astigmatism counting for 85 eyes (75.22%), hyperopia astigmatism 28 eyes (24.78%), simple myopia astigmatism 122 eyes (74.85%), simple hyperopia astigmatism 41 eyes (25.15%), astigmatism with rule 73 eyes (22.96%), 241 against rule astigmatism eyes (75.79%), 4 oblique astigmatism eyes (1.26%). Astigmatism less than 1.00D account for 29.25%, astigmatism 1.25D to 2.00D was 28.30%, astigmatism 2.25D to 3.00D was 25.79%, astigmatism more than 3.00D was 16.67%.

CONCLUSION: Simple myopia astigmatism was the main type in the spectacle prescription of 318 regular astigmatism eyes aged 3-14 and low, medium-grade astigmatism is predominant; high grade astigmatism was the main cause of amblyopia.

PU-062

超未成熟儿早产儿视网膜病变发病特点及分析

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目的：探讨超未成熟儿（出生体重 ≤1000g）早产儿视网膜病变发病特点。

方法：回顾性分析 2010 年 1 月至 2015 年 6 月在我院出生的超未成熟儿（出生体重 ≤1000g），根据其眼底筛查结果分组。A 组为未发生早产儿视网膜病变；B 组为发生早产儿视网膜病变但无需治疗；C 组为发生高危阈值前期或阈值期早产儿视网膜病变。孕周、出生体重、性别、眼底病变发病时的矫正胎龄、手术治疗时的矫正胎龄等临床资料纳入统计学分析。

结果：共有 77 例患儿纳入到该研究。其中 56 例出现不同程度的早产儿视网膜病变，占 72.7%，38 例患儿发展至高危阈值前期或阈值期病变，占 49.3%。A 组患儿的出生体重及孕周与 B 组和 C 组存在明显统计学差异。发生轻微视网膜病变的 B 组首次出现病变的时间为矫正胎龄 37 周，而发生严重视网膜病变 C 组首次出现病变时间为矫正胎龄 34 周。有 2 例患儿在首次眼底筛查发现 1 区 3 期 +plus 病变，其孕周为 25 周，出生体重分别为 670g 和 710g。

结论：在超未成熟儿中，出现早产儿视网膜病变时间越早，病变进展的可能性越大；对于孕周 25 周或出生体重小于 800g 的早产儿，其眼底首次筛查时间应该提前。

Screening Retinopathy of Prematurity in Extremely Low Birth Weight Infants and the Need for Earlier Screening Times

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PURPOSE: To convey the need for a revised screening strategy for retinopathy of prematurity (ROP) for extremely low birth weight (ELBW) infants.

METHODS: The medical charts of infants with a birth weight (BW) of less than 1 kg were reviewed. The infants were divided into three groups: group A, without ROP; group B, with ROP but not up to type 1 prethreshold or threshold ROP; group C, with type 1 prethreshold or threshold ROP. Data collected included gender, gestational age (GA), BW, postmenstrual age (PMA), age of onset of ROP, and age at which treatment was carried out, if required.

RESULTS: A total of 77 infants were involved. Fifty-six infants developed ROP at any stage and 38 infants developed type 1 pre-threshold or threshold ROP. The mean BW and GA of infants in group A were significantly different compared with groups B and C. The mean PMA of onset of ROP in infants who developed mild ROP was 37 weeks compared with 34 weeks for infants who developed severe ROP.

CONCLUSION: ELBW infants have a higher incidence of ROP in China, which highlights the need for optimizing neonatal care for these infants. In ELBW infants, ROP tends to develop more severely when it occurs earlier. It is necessary for ELBW infants, especially for those with a BW less than 800 g or a GA less than 25 weeks, to be initially screened at an earlier time

PU-063

1 岁以内婴幼儿屈光状态演变规律及影响因素分析

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目的：通过大样本调查，研究 1 岁以内婴幼儿的屈光状态，了解其演变规律及其影响因素。

方法：对 1258 例婴幼儿（766 例早产儿和 492 例足月儿，矫正胎龄 32 周 ~1 岁）进行分析研究。排除可能影响屈光状态的眼部疾患及全身疾患。所有样本均接受睫状肌麻痹后视网膜检影验光。记录性别、眼别、出生胎龄、矫正胎龄、出生体重、现体重、屈光状态，计算每只眼的等效球镜度。

结果：婴幼儿在矫正胎龄 32 周 ~1 岁之间，等效球镜度为远视状态，32~34 周等效球镜度 +0.94 ± 1.63D，随周龄增长远视度逐渐增大，至 1~2 月，等效球镜度 +2.43 ± 1.46D，之后等效球镜度逐渐下降，至矫正胎龄 1 岁，等效球镜度 +0.59 ± 1.41D。散光发病率为 42.17%，包括 2.82% 的近视散光和 39.35% 的远视散光。远视散光中 94.1% 为顺规散光，近视散光中 71.83% 为顺规散光。等效球镜度男性 +1.97 ± 1.57D，女性 +1.79 ± 1.46D。

结论：1 岁以内屈光状态与年龄及性别有关，与出生体重、现体重及出生胎龄无关；随年龄增长等效球镜度先增高再下降，远视峰值在 1~2 月；男孩远视屈光度较女孩高；顺归散光在 1 岁前常见。

The evolution and affected factors of refractive status of Chinese infants during the first year of life

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AIM: To study the evolution of the refractive status and examine the affected factors associated with refractive errors by investigating the refractive status of infants during the first year of life in China with the large sample size.

METHODS: A total of 1258 children (2516 eyes) aged 32 weeks to 1 year participated in the study, including 766 premature and 492 full-term infants. First, each baby received an orthoptic examination, slit lamp checking and fundus imaging. Patients with diseases which might affect refractive status were excluded from the cohort. The cycloplegia retinoscopy was performed. Their neonatal histories were reviewed. Each measurement contained the refractive status and calculation of the spherical equivalent.

RESULTS: Refractive state showed an average hyperopia of +0.94 ± 1.63D at the beginning of the study, followed by a trend toward more hyperopia. The refractive state reached the top (+2.43 ± 1.46D) at the age of one to two months. Then gliding till one year old when the refractive state reached +0.59 ± 1.41D. The prevalence of astigmatism was 42.17% in the study, including 2.82% myopic astigmatism and 39.35% hyperopic astigmatism. 94.1% of hyperopic astigmatism was with-the-rule astigmatism and 71.83% of myopic astigmatism was with-the-rule astigmatism. Refractive state between boys and girls was different. The mean SE of boys was +1.97 ± 1.57D, while that of girls was +1.79 ± 1.46D, and the difference was significant.

CONCLUSION: Before one year old, the change of refractive status is associated with checking age and sex, but has nothing to do with birth age, birth body weight or now body weight. At the age of one to two months, the degree of hyperopia reach the top (+2.43 ± 1.46D). Boys have more hyperopia degree than girls, and with-the-rule astigmatism is common.

PU-064

无 ROP 早产儿眼球发育的特点及影响因素的研究

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目的：研究早产儿眼球发育的特点及影响因素分析

方法：选取出生胎龄在 28-37 周（小于 37 周）无 ROP 症状早产儿及出生胎龄在 37-42 周的足月儿在出生 8 周内进行 A 超眼

球生物学测量及客观检影验光，同时根据出生胎龄的不同将受试者分为四组：1.28w≤ 出生胎龄＜ 32w; 2. 32w≤ 出生胎龄＜ 37w; 3. 37w≤ 出生胎龄＜ 40w;4. 出生胎龄 ≥40w，将各组之间眼轴，前房深度，晶体厚度，玻璃体厚度进行单因素方差分析比较。早产儿眼轴及等效球镜与出生胎龄，体重，身高，头围进行相关分析，

结果：除了晶体厚度外，眼轴，前房深度及玻璃体厚度在早产儿组与足月儿组之间均有显著性差异。37-40 周与大于 40 周两组间各项生物学参数并无显著性差异，而与小于 37 周早产儿两组均有显著性差异，眼轴，前房深度与玻璃体厚度随出生胎龄增长呈现明显递增趋势。相关分析提示，眼轴与出生体重，出生胎龄，头围及身高均有不同程度的正相关，而与等效球镜并无明显相关性。

结论：出生胎龄 28-37 周无 ROP 征象早产儿在出生早期眼轴随出生胎龄呈线性增长的趋势，眼轴变化可能由前房深度，玻璃体厚度的发育有关，而与屈光状态的变化无关。

Axial length and ocular development of premature infants without ROP

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OBJECTIVE: to analyze the characteristics of ocular development and its influencing factors of premature infant.

METHODS: Infants with gestational age 28 to 37 week (less than 37 weeks) without ROP symptoms and full-term infants born at gestational age 37 to 42 week were included and made A-scan Ultrasonic measurement and objective refraction. According to the gestational age infants were divided into four groups: 1. 28w≤ gestational age <32W; 2. 32W ≤gestational age <37W; 3.37W≤gestational age <40w; 4.gestational age≥ 40W. ANOVA was used to compare axial length, anterior chamber depth, lens thickness and vitreous chamber depth among these four groups. Correlation analysis was used to analyze the relation between axial length and spherical equivalent, gestational age, weight, height, head circumference

RESULTS: There was significantly different between preterm and full-term infants on axial length, anterior chamber depth and vitreous chamber depth. No significant difference was found between group3 and group 4 in the ocular parameters, yet difference do be found among group 1, group2 and group3. Axial length, anterior chamber depth and vitreous thickness showed increasing trend with the increase of gestational age. Correlation analysis showed that the axial length had positive correlation with birth weight, gestational age, head circumference and height, but no obvious correlation with spherical equivalent.

CONCLUSION: Axial length of premature infant with the gestational age 28 to 37 week without ROP had the increasing trend with the continuous growth of gestational age. Axial length may be elongated with the growth of vitreous chamber depth and anterior chamber depth, but had nothing to do with refractive status.

PU-065

儿童异常瞬目临床诊疗分析

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目的：探讨临床所见儿童异常瞬目病因及个体化治疗方法。

方法：对 208 例以异常瞬目为主诉患儿进行裂隙灯下眼表检查、泪膜破裂试验（BUT）及屈光不正筛查，详细询问病史、用眼习惯、必要时内科就诊协助排查神经系统疾病，针对病因进行治疗。

结果：208 例患儿中，过敏性结膜炎患者 126 例，慢性结膜炎、角结膜炎、结膜炎伴结膜结石、睑板腺功能障碍者 44 例，睑内翻倒睫 10 例，明显屈光不正者 12 例，合并抽动症者 8 例，眼部检查无明显异常者 8 例。其中，泪膜破裂时间检查异常者 52 例。眼科治疗 1 周至 4 周后，180 例（86.5%）治愈，20 例（9.6%）好转，10 例（4.8%）无改善。

结论：儿童瞬目异常常见病因包括过敏性结膜炎、感染性角、结膜炎、儿童干眼症、屈光不正、儿童抽动症等；仔细的眼部检查及整体性临床思维，有助于儿童瞬目异常病因的正确诊断，可以有效的缩短病程，防止长期滴用不适当的眼药水引起药物性眼表损伤，减轻患儿及其家长的心理及经济负担。

Clinical analyze for children’s abnormal blinking

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OBJECTIVE: To analyze the causes of children’s abnormal blinking and the individual treatment.

METHODS: Clinical data of 208 pediatric cases of abnormal blinking were collected. The examination were maked indndingeyelids，cornea，conjunctiva，tear break up time（BUT）and ophthalmometry；Medical history and living habits werecollected，individual treatment due todifferent etiological factors were analyzed.

RESULTS: 126cases of allergic conjunctivitis，44 cases of chronic conjunctivitis，keratoconjunctivitis，lithiasis of eyelid and mei-

bomi an gland dysfunction，10 oftrichiasis，12of refractive errors，8 of toureetes and 8 normal cases were found in 208patients，including 52cases withabnormal BUT. After treatment，eye symptoms disappeared in180（86.5%）cases，improved in 20（9.6%）cases and 10（4.8%）cases withnon-improvement.

CONCLUSIONS: Ocular surface diseases，ametropia and toureetes are the main causes of children's abnormal blinking. Serious checking and clinical thinking is the key to make the right diagnosis and shorten the course of disease in order to prevent side effects and ease their burden.

PU-066

青少年长期配戴角膜塑形镜的临床观察

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目的：观察在我院进行角膜塑形 5 年以上的近视青少年的效果及不良反应。

方法：回顾性研究在我院进行角膜塑形，塑形时间超过五年以上的青少年患者 42 例。塑形镜品牌：欧几里德、梦戴维、E&E3。根据屈光度、角膜平 K 值、角膜散光、角膜 E 值等参数选择第一试戴片，通过荧光染色评估配适，调整配适和光度后定片。于戴镜 1 天、1 周、1 月、2 月、3 月，以后每 3 月复查。

结果：裸眼视力和屈光度塑形前是 0.04 ± 0.01 和 -3.96 ± 0.5，塑形 5 年后是 0.9 ± 0.22 和 -0. 2 ± 0.41（P<0.01）; 角膜塑形前眼轴 24.99 ± 0.74，塑形 5 年后 25.94 ± 0.38; 角膜塑形前角膜内皮细胞密度 3023 ± 316，塑形 5 年后 2766 ± 299。

结论：1、角膜塑形能明显提高裸眼视力，部分患者角膜不对称和角膜边到边散光的患者，常规球面塑形镜难以取得好的配适，可收紧配适和加大片径。2、角膜塑形镜对眼轴增长有明显的控制效果。3、角膜内皮细胞改变无统计学差异，但随着戴镜时间的延长，内皮细胞密度和六角细胞比率有减少的趋势，是与戴镜相关还是与年龄相关，尚缺乏大样本的对比研究。

Adolescent myopia patients wearing Ortho - K long-term clinical observation

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OBJECTIVE: to observe the corneal shape more than 5 years in our myopic effect and adverse reaction of teenagers.

METHODS: a retrospective study was carried out in our hospital and corneal shape, shape of time more than five years of 42 patients with teenagers. Brand shaping mirror: Euclid, dream David, E&E 3. According to the diopter, corneal K value, corneal astigmatism and corneal E first try of selecting parameters, such as tablets, by fluorescent staining of assessment fit, after adjust the fit and luminosity. In wearing lens 1 day, 1 week, January, February, march, check every 3 months later.

RESULTS: the naked eye sight and diopter before shaping is 0.04 + / - 0.01 and 0.01 + / - 0.5, shaping after 5 years was 0.9 + / - 0.22 and 0. 2 + / - 0.41 (P < 0.01); Corneal shape before eye axis 24.99 + / - 0.74, shaping 25.94 + / - 0.38 5 years; Shaping cornea corneal endothelial cell density before 3023 + 316, shaping after 5 years 2766-299.

CONCLUSION: 1, corneal shape can obviously increase the naked eye vision, some patients cornea asymmetry and edge to edge patients with astigmatism, conventional spherical shape of lens of difficult to obtain a good fit, and increase the diameter of can tighten fit. 2, corneal shape mirror to eye axis growth has obvious control effect. 3, corneal endothelial cells change no statistical difference, but with the extension of mirror wearing time, ratio of endothelial cell density and the hexagonal cells has a tendency to reduce, is associated with wearing glasses or associated with age, a lack of large sample contrast research.

PU-067

1000 例早产儿视网膜病变眼底筛查临床分析

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目的：观察分析早产儿视网膜病变（ROP）的危险因素 , 发生率及其他眼底发育性病变情况。

方法：2014 年 -2016 年对新生儿监护病房（NICU）住院并符合筛查标准的的 1000 例早产儿进行眼底筛查，27-36 周早产，体重 2000g 以下，在出生后 2 周或矫正胎龄 32 周开始眼底检查并进行随访，每两周复查，至满 42 周。采用 Logistic 多元回归分析进行 ROP 危险因素的分析。

结果：1000 例早产儿中 ROP 者 24 例，其中Ⅰ期 16 例，Ⅱ期 4 例，Ⅲ期 2 例。Ⅳ期 2 例。3 例行激光治疗 。视神经发育不良 3 例，视网膜片状出血 5 例，Logistic 回归分析结果显示：ROP 的发生与早产儿的胎龄、低体重，吸氧浓度、吸氧持续时间、接受机械通气治疗等几项因素密切相关。

结论：早产儿视网膜病变（ROP）发生的根本原因为早产和吸氧，其主要危险因素包括胎龄小、低体重，吸氧浓度高、吸氧

持续时间长以及进行机械通气治疗，呼吸窘迫综合症，输血治疗。建立完善且有效的 ROP 筛查制度，及早发现和治疗 ROP，对于改善患儿的预后具有至关重要的意义。

Analyse the incidence and risk factors for retinopathy of prematurity in infants.

XIAOYING

The second hospital of Shandong University

AIMS: To analyse the incidence and risk factors for retinopathy of prematurity (ROP) and survival rates among extremely low birth weight (ELBW) and very low birth weight (VLBW) preterm infants.

METHODS: A prospective cohort study of 1000 infants admitted at a hospital NICU, between 2014 and 2016, Perinatal risk factors for ROP were assessed using univariate and multivariate analysis.

RESULTS: Of the 1000 neonates screened, ROP affected 24 of ELBW infants babies.. Univariate analysis showedthat gestational age (GA), BW, use of indomethacin and erythropoietin, blood transfusions, and intraventricular haemorrhage were associated with ROP. **CONCLUSION** This study showed reduced survival rates, high incidence of ROP, and a greater need of treatment among ELBW infants admitted in this institution.

PU-068

儿童盲和低视力的病因、屈光状态及远视力 康复调查研究

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昆明市儿童医院

目的：调查及分析儿童盲和低视力的病因、屈光状态、评价屈光矫正及远用助视器效果。

方法：选自 2013 年 5 月 ~ 2015 年 6 月昆明市儿童医院眼科接诊的 4 ~ 14 岁低视力儿童及盲童共 140 例。进行病史问卷调查，眼科临床检查、睫状肌麻痹检影验光及低视力助视器验配，明确病因诊断并记录分析其视觉康复情况。

结果：视力残疾儿童总数 140 例（低视力门诊 70 例，盲校 70 例）年龄 4 岁 ~ 14 岁，平均年龄 11.03 ± 3.86 岁。男 88 例，女 52 例。病因前三位分别是先天性白内障 33 例，先天性眼底病变 33 例，（包括了原发性视神经萎缩，原发性视网膜色素变性，Stargardt's，视锥细胞发育不良，视乳头发育不良等），先天性小眼球小角膜共 23 例。屈光检查 155 眼，轻，中度近视 46 眼，轻中度远视 54 眼，各类型高度屈光不正共 33 眼。104 例视力 ≥0.01 的盲童 24 例，经屈光矫正联合远用助视器降低 87%。而低视力患儿，单纯屈光矫正减少 13%，联合远用助视器验配减少 74%

结论：儿童低视力发病仍以先天性疾病为主，其中以先天性白内障及眼底病变多见。低视力儿童应常规进行屈光矫正联合助视器，可有效提高残余视力，降低致残率。

The Pathogenesis, Refraction Status and Distant Vision Rehabilitation of Blindness and Low Vision in a sample of Chinese children

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OBJECTS: To investigate the pathogenesis, refractive status, refractive correction and rehabilitation condition after using prescribed vision devices in children suffering low vision and blindness. To statistically analyze low vision conditions including onset, surgical history, refraction correction and effectiveness of distant vision devices.

METHODS: We screened 140 4-14 year-old children with low vision and blindness examined from May 2013 to June 2015 by the Kunming Children's Hospital Ophthalmology Department. Procedures included medical history questionnaires, ophthalmologic examinations, cycloplegic retinoscopy and prescription of low vision telescopes. We recorded diagnoses and analyses of vision rehabilitation procedures.

RESULTS: Our visually disabled children had a mean age of 11 ± 3.9 years; 88 males, 55 females. Main diseases were congenital cataracts, retinopathy including optic nerve hypoplasia, RP, Stargardts and congenital microphthalmos with microcornea.

Refraction Status Analysis: Of 155 eyes we found mild and moderate myopia in 46, hyperopia in 54 and high ametropia in 33 eyes. The remaining 24 blind and 80 low vision children with VA of ≤6/60 were prescribed refraction correction and distance vision devices. Blindness (VA ≤6/60) was reduced by 87% with refraction and low vision devices, 13% of low vision (VA 6/18-6/60) was eliminated with refraction alone and 74% eliminated with refraction and devices.

CONCLUSIONS: We recommend children with low vision receive routine refraction examinations and be prescribed glasses and vision devices to improve their remaining vision and decrease their disability. Refractive correction alone for postoperative congenital cataracts showed far from ideal results. Effective visual rehabilitation must include refraction correction along with prescribed vision devices.

PU-069

玻璃体腔注射雷珠单抗 / 康柏西普联合常规疗法治疗 coats 病临床分析

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目的：评价玻璃体腔注射雷珠单抗 / 康柏西普联合常规疗法治疗 coats 病的效果。

方法：回顾性分析我院及邢台眼科医院 2012 年 7 月到 2017 年 1 月之间行玻璃体腔雷珠单抗或康柏西普注射并联合常规疗法治疗的 coats 病人共 17 例，将病人分为四个亚组，雷珠单抗和康柏西普治疗亚组，儿童组和成人组，分别比较他们的临床资料的差异，进而分析疗效的差异。随访至少 6 个月以上。

结果：在 17 名 coats 患者中，玻璃体腔注射次数为 2.53 ± 1.23 次 , 1 名患者行视网膜下放液治疗，2 名患者行玻璃体切割治疗，所有病人均行眼内激光治疗，平均激光治疗次数为 1.94 ± 0. 83，平均随访时间为 20.59 ± 10.60 月。比较雷珠单抗和康柏西普治疗亚组，雷珠单抗治疗前后视力差异没有统计意义，而康柏西普组视力差异有统计意义 (p=0.03)，而注射次数和激光次数均无统计学意义。在小儿和成人亚组治疗前后视力均无统计学意义，而注射次数和激光次数均有统计学意义 (p=0.033,p=0.034)。

结论：玻璃体腔注射雷珠单抗 / 康柏西普联合常规疗法治疗 coats 病是一种有效的治疗方式。雷珠单抗和康柏西普是相对安全和有效的 coats 病治疗药物。

Intravitreal ranibizumab/conpercept injections combined with conventional therapy for Coats' disease

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PURPOSE: To observe the efficacy of intravitreal ranibizumab/conpercept combined with conventional therapy for Coats'disease. Moreover, comparing the efficacy of two anti-VEGF agents preliminary

METHODS: We performed a retrospective case series review, who were diagnosed with Coats' disease between July 2012 and January 2017. All patients were treated with intravitreal anti- VEGF agents(ranibizumab or conbercept) and combination treatments, including laser photocoagulation and drainage of the subretinal fluid, at Tianjin Medical University Eye Hospital and Xintai Eye Hospital. The patients were divided into four subgroups, intravitreal ranibizumab and conpercept subgroup, pediatric and adult subgroup. Assess the difference between subgroups within recorded data including birth history, age, gender,family history, medical history, and systemic and other ocular anomalies. The follow-up were continued monthly at least 6 months.

RESULTS: seventeen patients were involved in this study. The mean time of the injections was 2.53 ± 1.23 (range:1.5); one patients (6%) underwent SRF drainage. Two patients(12%) performed vitrectomy. Laser photocoagulation was delivered on all patients; the mean times were 1.94 ± 0. 83 (range:1.3); the mean follow-up time was 20.59 ± 10.60 months. At the end of the follow-up time, 16 patients (94%) were stable. one patients (6%) had recurred macular edema and increased SRF. Compared with the efficacy of two drugs, Our data showed that the initial and final BCVA after intravetreal injection of ranibizumab did not show significant difference(p=0.13), while BCVA indeed increased after using conbercept(p=0.03). The injection times and laser times between conbercept and ranibizumab groups did not show significant difference (p=0.19,p=0.11,respectively). Compared with pediatric and adult Coats' disease, Our data demonstrated that the initial and final BCVA did not show significant difference(P=0.09.p=0.07). The injection times and laser times showed significant difference (p=0.033,p=0.034,respectively).

CONCLUSION: intravitreal injection of ranibizumab and conbercept combined with conventionally therapy is an effective therapeutic option in Coats' disease. Conbercept and ranibizumab are relatively safe and effective for the treatment of Coats' disease.

PU-070

小儿眼弓蛔虫病治疗体会

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目的：评价小儿眼弓蛔虫病治疗的效果。

方法：回顾性分析因眼弓蛔虫病行玻璃体视网膜手术病例 3 例，3 例均为混合型，均行常规治疗和玻璃体切除手术治疗。

结果：三例患者在行血清学和玻璃体液检查确诊后，先行激素治疗和驱虫药治疗，强的松和阿苯达唑治疗半年抑制玻璃体和葡萄膜炎症，半年后病灶吸收稳定，但视网膜表面均有机化物形成并引起视网膜牵拉，遂行玻璃体切除手术，切除机化膜，松解视网膜牵拉。二例患者术后硅油填充，一例患者未用填充物。术后患者均给予小剂量 (5mg) 强的松维持治疗，术后长期随访视网膜复位良好。

结论：眼弓蛔虫病肉芽肿病灶常出现在周边部，常规激素和驱虫药治疗后，病灶炎症反应消退但视网膜易形成机化物，因而玻璃体手术成为治疗必要手段。

The evaluation of pediatric ocular toxocariasis treatments

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PURPOSE: to assess the efficacy of pediatric ocular toxocariasis treatments.

METHOD: we performed a retrospective case series review study of our cohort of pediatric ocular toxocariasis patients.3 cases were involved in the study.3 cases were mixed type. Vitrectomy surgery was delivered in all patients.

RESULT: three patients, who were diagnosed ocular toxocariasis by serological examination,were treated with corticosteroids and albendazole. After treated 6 months, the lesion in the peripheral retinal was stable and vitritis and uvitis were cured. However, tractional retinal detachment was formed due to the the retinal fibrosis after medicine treatment. Therefore, vitrectomy was deliverd in all patients , two cases had silicon oil injection, one cases had air injection. Small dose of corticosteroids was performed for at least 6 months after surgery.

CONCLUSION: the granuloma in ocular toxocariasis prefers to peripheral retina, the conventional therapies, such as corticosteroids and albendazole, can relieve the inflammatory symptom, however, vitectomy was a necessary therapy after the retinal fibrosis formation.

PU-071

旁中心注视致代偿头位 1 例

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目的：探讨旁中心注视致代偿头位的临床表现及治疗方法。

方法：回顾分析我科近期收治旁中心注视致代偿头位 1 例的临床资料。

结果：本例5岁，因发现眼位向内偏斜并视力差5个月就诊，视力右0.25-2.25DC × 170→0.2，左0.05-4.00DC × 180→0.05。HT：戴镜及裸眼均正位。△+交替遮盖偶有+15PD。左眼不能固视。眼球运动自如，无震颤。头向右肩倾，遮盖左眼头位改善，遮盖右眼头位加重。Bielschowsky 双眼（ -)。双眼下睑内翻倒睫。左眼底检查旁中心注视。入院行双眼下睑内翻倒睫矫正术，术后予配足镜，红光、光栅、后像等弱视治疗，患者头位得到有效改善。

结论：代偿头位除见于垂直斜视及眼球震颤等疾病外，亦可发生于旁中心注视患者。眼底检查注视性质对于鉴别代偿头位病因具有重要的作用。

A Case with Compensatory Head Posture Caused by Amblyopia with Eccentric Fixation

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OBJECTIVE: To discuss the clinical manifestations of compensatory head posture caused by amblyopia with eccentric fixation.

METHOD: The clinical data of one patient with compensatory head posture caused by amblyopia with eccentric fixation who was admitted into our department recently.

RESULTS: This patient, 5 years old, sought medical advice because of pronated ocular position and poor eyesight (right: 0.25-2.25DC × 170 → 0.2; left: 0.05-4.00DC × 180 → 0.05) for five months. HT: both eyes with spectacles and naked eyes were in normal position. △ + was occasionally +15PD with alternative cover. The left eye could not realize fixation. Two eye balls could move freely with no tremble. The head tilt towards the right shoulder. The head posture was improved when the left eye was covered, while it was aggravated when the right eye was covered. Bilateral Bielschowsky sign (-). Both eyes had lower eyelid entropion and trichiasis. Left fundus examination revealed eccentric fixation. After being admitted into our hospital, lower eyelid entropion and trichiasis correction was performed for both eyes, and a full formula for eyeglasses, red light, optical grating, after-image and other amblyopia therapy were given after operation. The patient's head posture was effectively improved.

CONCLUSION: In addition to vertical strabismus, nystagmus and other diseases, compensatory head posture may also occur in patients with eccentric fixation. The nature of fixation in fundus examination plays an important role in identifying the causes of compensatory head posture.

PU-072

MRI 联合 RetcamII 在儿童晚期视网膜母细胞瘤分期价值

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目的：分析和探讨 MRI 联合 RetcamII 在儿童晚期视网膜母细胞瘤分期价值。

方法：回顾性研究。选择昆明市儿童医院 2014 年 3 月至 2016 年 12 月收治的 44 名（44 只眼）晚期儿童视网膜母细胞瘤患儿病历资料和眼球摘除术前眼眶及头颅 MRI 检查结果、RetcamII 眼底照相分期结果、术后病理结果。采用 Kappa 一致性检验对术前 MRI 检查结果联合 RetcamII 分期结果与术后病理报告的分期结果进行一致性比较。

结果：44 名视网膜母细胞瘤患儿中仅有 3 名术前 MRI 检查联合 RetcamII 分期与病理分期不相符。Kappa 值为 0.792（Kappa>0 说明有意义，Kappa≥0.75 说明已经取得相当满意的一致程度）

结论：MRI 联合 RetcamII 检查是晚期儿童视网膜母细胞瘤病情分期准确的检查手段。

Efficacy of Magnetic Resonance Imaging(MRI) and RetcamII for advanced retinoblastoma in children

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OBJECTIVE: To evaluate the efficacy of MRI and RetcamII for advanced retinoblastoma.

METHODS: Retrospective case series study. The MRI result before operation and pathologic data post operation of 44 cases (44 eyes) of advanced retinoblastoma were collected from the Ophthalmology Department of Kunming Children's Hospital from Mar.2014 to Dec.2016. Use Kappa consistency test to compare the retinoblastoma stage between MRI and RetcamII result before operation and pathologic data post operation.

RESULTS: In this study, 3 of all 44 cases data are different. Kappa consistency test show high consistency.

CONCLUSIONS: MRI and RetcamII are exact ways to evaluate advanced retinoblastoma stage in children.

PU-073

杭州市少年儿童近视的发生率和影响因素

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目的：评估杭州市少年儿童近视的发生率以及相关的影响因素。

方法：共有 890 名来自杭州市四个区四个小学的小学生参与了此次调查。学生们分别予以睫状肌麻痹眼光以及眼轴、角膜曲率等生物学测量。标准化问卷一对一的调查了学生们的户外活动、近距离活动、阅读习惯以及父母亲的屈光状态。

结果：890 名学生的近视发生率是 30%。男生和女生右眼的等效球镜屈光力有显著差异，但两者的近视发生率无明显差异。通过多元回归分析发现，学生们的等效球镜度数与年龄、户外活动时间，父母亲屈光状态显著相关，但与近距离活动时间、睡眠时间、视近距离、字体大小无显著相关。

结论：更少的户外活动时间，年龄增加以及父母屈光状态将更容易导致近视。增加户外活动时间是有效预防近视的方法。

Prevalence and associated environmental factors of myopia among primary students in Hangzhou, China

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OBJECTIVE: This study aimed to assess the prevalence of myopia in primary students in Hangzhou, China, and explore the impact of environmental factors on the prevalence of myopia.

METHODS: A total of 890 grades 1–6 primary students from 4 primary schools of Hangzhou, China, participated in the study. The students were examined using cycloplegic refraction and biometry. Detailed questions on age, outdoor activities, near-work activity, reading and writing habits, and parental refractive error were asked in a face-to-face interview using a standard questionnaire.

RESULTS: The prevalence of myopia was 30% in 890 schoolchildren aged 7–12 years from4 primary schools in Hangzhou (grades 1–6). Significant differences were found between the right eye's spherical equivalent(SE) of the refractive error in boys and girls, but the prevalence of myopia between the heterosexual schoolchildren showed no significant difference. In a multivariate regression analysis, SE

was correlated with older age, paternal and maternal SE, and less outdoor time per week, but near-work time per week, sleep duration per night, distance between the child's eyes and the desk, and font size of handwritten words were not significantly correlated with SE. The ratio of axial length and anterior corneal curvature(AL/CR) as a surrogate for myopia was correlated with older age, maternal SE, and less outdoor time spent per week.

CONCLUSIONS: Less outdoor activity, older age, parental myopia were correlated with greater myopia. More outdoor activity may be helpful to reduce the high prevalence of myopia in Hangzhou.

PU-074

儿童调节异常所致视力下降的临床分析

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目的：观察儿童调节异常所致远或近视力下降的临床特点及临床疗效。

方法：回顾性研究。收集 2013 年 2 月到 2015 年 2 月因视力下降在我院就诊，经眼科门诊检查排除器质性疾病和弱视原因后转入视光门诊，经验光和视功能检查确诊的因调节异常导致视力下降 28 例儿童患者的临床资料。

结果：28 例患者中男 10 例女 18 例，初诊时年龄 6~14 岁；初始平均远视力为(4.19 ± 0.34)、平均等效球镜为(-7.95 ± 3.10)D、平均最佳矫正视力为 (4.28 ± 0.32); 托吡卡胺用药后平均等效球镜为 (-0.06 ± 0.86)D、平均最佳矫正视力为 (4.43 ± 0.15); 阿托品凝胶后平均等效球镜为 (1.24 ± 0.84)、平均最佳矫正视力为 (4.93 ± 0.14)。给予视功能训练后，正负相对调均有增加；调节灵敏度 (Flipper 拍) 训练前后分别是 0cpm(负片通过困难) 和 10.6cpm($p<0.01$,$t=-4.012$)

结论：调节异常所致者致视力下降者，在传统治疗的基础上，加用视功能检查和视功能训练，可使视力恢复并稳定。

Acquired Visual Lose Attributed to Accommodative Dysfunction

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OBJECTIVE: To observe the binocular vision characteristics on the diagnosis and treatment of functional vision loss patients.

METHODS: A retrospective study. 28 participants with accommodative dysfunctional vision loss were enrolled at the ophthalmic center from February 2013 to February 2015. The age was from 6 to 24 years.

RESULTS: All patients had routine examinations that excluded eye disease, amblyopia risk factors and systemic disease. Based on the binocular vision characteristics, all patients participated in visual functional examination and training. The patients' average naked visual acuity was (4.19 ± 0.34)、the average spherical equivalent diopter was (-7.95 ± 3.10)D、the average best corrected visual acuity was (4.19 ± 0.34) . After getting some compound tropicamide eye drop, the average spherical equivalent diopter was (-0.06 ± 0.86)D 、the average best corrected visual acuity was (4.43 ± 0.15) . After using atropine eye ointment, the average spherical equivalent diopter was (1.24 ± 0.84)D、the average best corrected visual acuity was (4.93 ± 0.14). Vision training improved visual function indexes. Negative relative accommodation, positive relative accommodation and accommodative facility had significantly improved ($P<0.01$).

CONCLUSION: Caused by accommodative abnormity in patients with functional vision lost, on the basic treatments combined with visual function examination and training, visual acuity can be improved and remained stable.

PU-075

间歇性外斜视患者眼表健康状况评估的意义

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目的：利用 Oculus 眼前节分析仪研究间歇性外斜视患者眼表泪液情况及眼红指数。

方法：用 Oculus 眼前节分析仪研究我院眼科门诊诊断为间歇性外斜视 43 例（23 名男性及 20 名女性）的眼表情况：包括泪河高度、刺激性泪河高度、眼红指数、非侵袭性 BUT、平均 BUT 等。

结果：间歇性外斜视患者（n=43）泪河高度为 0.18 ± 0.04mm，第一次 BUT 为 4.74 ± 2.49s，男性和女性相比差异无统计学意义。双眼鼻侧结膜眼红指数及睫状眼红指数均高于颞侧。主导眼的结膜眼红指数及睫状眼红指数与非主导眼的差异无统计学意义。泪河高度、刺激后泪河高度与年龄呈明显正相关，其余指标与年龄及斜视度均无相关性。

结论：间歇性外斜视患者均具不同程度的泪膜不稳定及炎症。鼻侧炎症重于颞侧，眼表综合分析仪可辅助判断干眼及炎症情况，防止发生围手术期并发症。

The significance of ocular surface health assessment in patients with intermittent exotropia

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OBJECTIVE: To investigate the e tear firm and redness index in patients with intermittent exotropia by Oculus anterior segment analyzer.

METHODS: Oculus ocular anterior segment analyzer was used to study the ocular surface manifestations of 43 patients (23 males and 20 females) diagnosed with intermittent exotropia, including tear meniscus height, tear meniscus height after irritation, redness index, non-invasive BUT, average BUT.

RESULTS: Tear meniscus height in 43 intermittent exotropia was 0.18 ± 0.04mm and the first BUT was 4.74 ± 2.49s. There was no significant difference between male and female. Nasal conjunctival and ciliary red eye index were higher than that in temporal side. There were no significant differences in conjunctival redness index and ciliary redness index between dominant eye and non-dominant eye. Tear meniscus height and tear meniscus height after irritation were positively correlated with age. The other indexes had no correlations with age and strabismus angle.

CONCLUSIONS: Patients were combined with dry eye and inflammation beside strabismus.Nasal inflammation was heavier than temporal .Ocular surface analyzer can help to estimate dry eye and inflammation.Ocular surface examination should be paid attention to before operation in order to prevent complications around operation.

PU-076

调节训练用于儿童近视防治的临床观察

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郑州儿童医院

目的：评价调节训练用于低度近视的治疗效果，分析调节训练在近视的发展中的作用，进一步了解调节训练对于近视防治的临床效果。

方法：选取 2015 年 6 月 ~2016 年 6 月郑州儿童医院眼科门诊 6~12 岁经阿托品眼药膏散瞳验光，确定屈光度为近视的患者（散光＜ -0.50DC），选取近视程度 < -1.00DS, 平均屈光度 -0.63 ± 0.37 DS 的患者 80 例（160 眼）。随机进行分组，调节训练治疗的 40 例（80 眼）近视患者为治疗组，每周进行调节训练 3 次。采用常规治疗近视的 40 例（80 眼）患者为对照组 , 采用一般防近视、去除疲劳眼药水及口头交代注意用眼卫生、加强做眼保健操等。1 年后，对 2 组复诊及时，对医嘱遵从性强的剩余病例进行统计分析，调节训练组 26 例，一般治疗组 30 例。观察其屈光状态、年近视增长幅度及眼轴的变化。

结果：调节训练组近视年增长幅度均值为 0.25 ± 0.12DS，低于一般治疗组的 0.50 ± 0.06DS；眼轴增长 0.13 ± 0.08mm 低于一般治疗组的眼轴增长 0.50 ± 0.12mm。两组比较差异有显著性（P<0.05）。

结论：调节训练能有效延缓近视儿童屈光度的发展，尤其对调节滞后的低度近视患儿的效果更为明显。

Clinical observation on the effect of accommodative training in the prevention and treatment of myopia in children

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OBJECTIVE: To evaluate the therapeutic effect of accommodative training in low myopia, and to analyze the effects of accommodative training on the development of myopia.

METHODS: From June 2015 to June 2016 ,we choose children which in 6~12 years old who treat in Zhengzhou children's Hospital ophthalmology ,the children use the atropine eye ointment mydriasis,then we select 80 cases who has the low myopia(< -1.00DS) (and astigmatism< -0.50DC), the average diopter was -0.63 ± 0.37 DS (160 eyes). The 40 patients were randomly divided into therapic groups (treatment group). The treatment group was treated with adjusting training three times a week .The control group give the general anti-myopia methods, which contains removing fatigue eye drops and oral confession attention with eye health, strengthen eye exercises. 1 years later, select the patients who follow doctor's advice, those two groups were statistical analysis of the remaining cases, adjusting training group of 26 cases, the general treatment group of 30 cases. The refractive state, the growth rate of myopia and the change of axial length were observed.

RESULTS: The average annual growth rate of myopia in the training group was 0.25 ± 0.12DS, which was lower than that of the control group 0.50 ± 0.06DS, with an increase of of the eye axis of 0.13 ± 0.08mm, which was lower than that of the control group, with an increase of 0.50 ± 0.12mm. There was significant difference between the two groups (P<0.05).

CONCLUSION: Accommodative training can effectively delay the development of myopia in children with low myopia, especially

for children with low myopia.

PU-077

“治未病”思想在新生儿眼病筛查的应用

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目的：探讨“治未病”思想在临床新生儿眼病筛防的应用。
方法：从未病先防、已病早治、即病防变三个方面等思想指导下，开展在新生儿眼病筛防。
结果：开展早期眼保健的有利于掌握儿童眼发育信息，提前发现眼病，给予干预措施，促进视觉正常发育。
结论：运用中医“治未病”思想，重视新生儿眼保健与眼病筛查工作，有利于提高人口素质。

The Application of “Preventive Treatment Theory” in the Neonatal Eye Disease screening

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OBJECTIVE: According to the thought of “Preventive treatment theory” , to discus the application of the neonatal eye disease screening.

METHOD: “Preventive treatment theory” is a sort summarization of preventive medicine in Chinese medicine. In the paper ,clarified were the prevention and treatment targets in the neonatal eye disease from various viewpoints including prevention before disease occurrence,treating disease at disease onset, preventing the aggravation once disease occurs.

RESULT: It helps to grasping the information of the children eye development by eye care working, to finding the eye disease in new born, to giving treatment,to promoting the visual development.

CONCLUSION: According to the thought of “Preventive treatment theory” , we should pay attention to the eye care work and the neonatal eye disease screening, it helps to improve population quality.

PU-078

76 例中重度下颌瞬目综合征儿童手术疗效观察

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目的：探讨提上睑肌离断联合 EPTFE 额肌悬吊术治疗中重度儿童下颌瞬目综合征手术疗效。
方法：回顾性系列病例研究。分析 2014-2016 年行提上睑肌腱膜节段去除联合 EPTFE 额肌瓣腱膜悬吊术治疗单眼中、重度下颌瞬目综合征患儿 76 例的临床资料。其中下颌瞬目中度 34 例（44.7%），重度 42 例（55.3%）；上睑下垂中度 29 例（38.2%），重度 47 例（61.8%）。年龄 18 个月 ~ 13 岁。术后随访 10 ~ 12 个月。计量资料之间的比较采用 anova 方差分析，计数资料之间的比较采用卡方检验，以 P<0.05 代表有显著性差异。
结果：76 例中 94% 下颌瞬目治愈，术后未出现下颌联动现象。2 例好转，1 例无效。上睑下垂矫正后功能与美容疗效满意；2% 下颌瞬目联动幅度为 3mm，但功能及美容疗效满意。8% 术后发生暴露性角膜炎，6% 发生结膜撕裂，4% 上睑下垂复发，4% 上睑内翻倒睫，2% 排异，2% 下颌瞬目联动运动矫正失败。
结论：患眼提上睑肌腱膜节段去除联合 EPTFE 额肌瓣腱膜悬吊术治疗单眼中、重度下颌 - 瞬目综合征患儿手术疗效好，术后反应轻，为合并弱视患儿早期治疗提供必要条件。

Surgical management of moderate and severe Marcus-Gunn syndrome

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OBJECTIVE: To evaluate the efficacy of surgery for Marcus-Gunn syndrome with levator excision and frontalis suspension with EPTFE sutures.

METHODS: This was a retrospective cases series study.Senventy-six patients with Marcus-Gunn syndrome who were diagnosed between 2014 and 2016 in Beijing Children’s Hospital were enrolled in this study. The age range was 18 months to 13 years and patients were followed for 10 to 12 months. 34（22.7%）patients had moderate Marcus-Gunn syndrome and 42（55.3%) had the severe syndrome，while 29（38.2%）patients had moderate ptosis and 47（61.8%）had severe ptosis． All patients underwent segmental excision of

the levator aponeurosis combined with frontalis suspension with EPTFE sutures on the affected eye. Data were analyzed using Analysis of Variance and chi-square test.

RESULTS: Surgical success was achieved in 76 cases（94%），but one case still had the jaw winking phenomenon (3 mm). 63% increase ≥6mm, 35% increase 3 ~ 5mm,and 2% recur after 3 months. Complications were found in 13 eyes: 4 eyes had exposure keratitis, 3 eyes had a conjunctival tear, 2 eyes had a recurrence, 2 eyes had trichiasis, 1 eye had repulsion, and 1 eye was faulty.

CONCLUSION: Levator excision combined with frontalis suspension with EPTFE were effective in the treatment of Marcus-Gunn syndrome.

PU-079

青少年近视的药物干预及意义

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目的：随着高科技的发展，更多的电子产品进入家庭及学生的学习负担加重，青少年的发生率每年都在增加。这在极大程度上影响了我国的国民素质及国防安全。寻求一个最好最有效的方法控制青少年近视的发生率已经成为广大眼科医生的责任。

方法：我院对 2013 年 1 月至 2016 年 12 月期间，年龄在 7 至 14 周岁，裸眼视力低于 0.8，视力下降发生在半年内，快速验光屈光度在 -0.50 至 -1.75DS，散光度在 -0.75DC 的患者 5636 例进行 1% 阿托品治疗，1 日 3 次每次一滴。

结果：63.1% 患者裸眼视力达到 1.0 以上，这部分患者为假性近视，21.7% 患者视力有提高，但达不到 1.0，屈光度在 -1.00DS 以下者为混合性近视，15.2% 患者视力不提高，屈光度在 -1.00DS 以上为真性近视，假性近视和混合性近视继续巩固治疗。

结论：少年儿童睫状肌调节能力过强，尤其是 12 岁以下儿童视近物时间过久易发生痉挛形成假性近视，如不及时给予睫状肌松弛药物，眼轴半年内会发生改变从而形成真性近视。用 1% 阿托品治疗假性近视 100% 有效，对混合性近视坚持治疗后 62.1% 的患者有效，同时也为真性近视患者散瞳做准备。

The significance of juvenile myopia with drug intervention

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OBJECTIVE: To find a best effective way to control the incidence of juvenile myopia.

METHODS: Medical records of the 5636 patients who accepted the treatment with 1% atropine for myopia in Zhengzhou Second hospital from 2013 to 2016 were analyzed retrospectively. Of all the patients the uncorrected visual acuity was below 0.8, the age was from 7 to 14，the spherical mirror degree of rapid mydriasis optometry was from -0.50 to -1.75，the astigmatism was -0.75.

RESULT: the uncorrected visual acuity of 63.1% patients was above 1.0, they were pseudomyopia, the uncorrected visual acuity of 21.7% patients improved but still was below 1.0, 15.2% patients did not improve the visual acuity. true myopia is defined as the spherical mirror degree is above -1.00.

CONCLUSIONS: Ciliary muscle of children has strong adjustment ability. Without the ciliary muscle relaxation drug, They can easily lead to the formation of true myopia for a long time by seeing near objects. Pseudomyopia is 100% effective with 1% atropine treatment, 62.1% patients with mixed myopia can relieve the occurrence of myopia effectively with 1% atropine treatment. Not only pseudomyopia but also some mixed myopia can be cured with 1% atropine.

PU-080

一例儿童上睑结膜穹窿异物的漏诊分析

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目的：分析一例上睑结膜穹窿异物患儿的治疗经过，探讨该病漏诊原因。

方法：回顾分析 2017 年 2 月 10 日在我科住院的一例上睑结膜穹窿异物患儿的病历资料。

结果：患儿，男性，8 岁，因“右眼被树枝划伤伴眼红、眼痛、视力下降 6 天”入院。查体：右眼视力 0.3，上睑轻度红肿，鼻上方结膜发白，轻度糜烂伴脓性分泌物附着，余结膜充血（++）；鼻上方角膜可见溃疡 2mm × 2mm，基质层水肿（++），表面有脓性分泌物附着（图 1）；入院后给予患儿右眼局部抗感染治疗 4 天，诉右眼上睑疼痛明显，查体见右眼上睑红肿加重，结膜囊脓性分泌物未见减少，结膜和角膜鼻上方溃疡未见明显好转。因患儿上睑肿胀不能直接翻开，改用拉钩强行翻开其上睑睑板，发现一长 12mm，直径 2mm 树枝横在上睑结膜穹窿部鼻侧（图 2），遂取出异物。次日，患儿上睑疼痛症状消失，结膜囊分泌物明显减少，结膜及角膜溃疡明显好转（图 3）。

结论：由于儿童对外伤史的主诉不清，因此对于局部抗感染治疗无效的角膜溃疡，医生应高度怀疑上睑结膜穹窿部异物存

留。因上睑结膜穹窿部深而宽大，可有巨大异物存留，所以检查时应翻开睑板，必要时用拉钩强行翻开，才能避免漏诊。

A missed diagnosis case of conjunctival fornix foreign body in a child

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PURPOSE: To analyze the course of treatment in a case of conjunctival fornix foreign body, in order to explore the reason of the missed diagnosis.

METHODS: A retrospective analysis was used in a case of conjunctival fornix foreign body on 10th Feb 2017.

RESULTS: Patient Au Yang, male, 8 years old, was admitted because he felt pain and decreased vision in his right eye which was hit by a branch 6 days ago. PE: VOD 0.3, upper eyelid mild red and swollen, a lot of purulence discharge in the conjunctival sac, a patch of erosion in the upper nasal bulbar conjunctiva, an ulcer sized 2*2mm^2 in the upper nasal cornea (Figure 1). VOS 1.0, no abnormality seen. After the admission, we gave him local antibiotic drops and ointment in the right eye for 4 days but his pain in the upper eyelid and the size of the cornea ulcer were not relieved. Due to the swolling of the upper eyelid, we have to invert his tarsal plate using an eyelid retractor and found a foreign body which was a branch with a length of 12mm, diameter of 2mm lying in the conjunctival fornix (Figure 2). Then we took out the branch. The next day his pain in the upper eyelid and the size of the cornea ulcer were relieved obviously (Figure 3). He was totally recovered in two days.

CONCLUSIONS: Due to the unclear chief complaint on a child's traumatic history, we should highly suspect that a foreign body might exist in the upper eyelid conjunctival fornix if the antifection treatment for several days is useless in a cornea ulcer. Because of the deep and wide structure of the upper eyelid conjunctival fornix, a huge foreign body might exist in it. So we must invert the tarsal plate, using an eyelid retractor if necessary, in order to avoid the missed diagnosis.

PU-081

SPOT 视觉筛查仪检测 1 至 2 个月婴儿屈光状态的研究

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目的：应用 SPOT 视觉筛查仪研究低幼婴儿屈光状态，并评估弱视危险因素。

方法：随机抽取北辰区 2 个月龄内健康婴儿 179 人，行小瞳孔检影验光和 SPOT 视觉筛查仪屈光检查。应用美国斜视与小儿眼科协会弱视危险因素评价指南评估弱视风险。应用 SPSS11.0 统计软件对等效球镜（SE）进行 *t* 检验。

结果：婴儿平均年龄为 48.3 ± 4.7 天，女 90 人，男 89 人。小瞳孔验光 SE 为 +1.09 ± 0.06D，SPOT 检查 SE 为 -0.25 ± 2.25D，差异具统计学意义（t=10.965，P<0.01）。小瞳孔验光 >+4.5D 2 眼，+3.0D 至 +4.25D 31 眼，+2.0D 至 +2.75D 55 眼，0 至 +1.75D 253 眼；-0.5D 至 -3.5D 17 眼。柱镜大于 2.0D 1 眼，1.5D 至 2.0D 1 于 +4.5D 9 眼，占 2.6%；散光大于 2D 63 眼，占 18.2%；屈光参差 19 人，占 10.61%。

结论：SPOT 视 4 眼，0.5 至 1.25D 144 眼。屈光参差 2.5D 以上 5 人，1.5D 至 2. 5D15 人，0.5 至 1.38D62 人。SPOT 检测远视大觉筛查仪对低幼婴儿所筛检弱视危险比率高于小瞳孔检影验光结果，其筛检标准有待进一步研究。

Detection of refractive error by Spot Photoscreener in 1 to 2 months old infants

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PURPOSE: To evaluate the characteristics of refraction and to investigate the effectiveness of Spot photoscreener in detecting amblyopia risk factors(ARF) meeting 2013 the American Association of Pediatric Ophthalmology and Strabismus (AAPOS) criteria in Chinese infants under 2 months old.

METHODS: One hundred and seventy-nine healthy infants (358 eyes) were randomly selected at Tianjin Beichen District Women and Children Health Center, aged between 41 to 60 days (48.3 ± 4.7 days). All the infants underwent ophthalmologic examination, photoscreening, and non-cycloplegic retinoscopy refraction. The mean spherical equivalent obtained with the photoscreening and retinoscopy were analyzed by *t*-test under SPSS11.0 software. The detection of ARF were based on the AAPOS 2013 guidelines.

RESULT: There were 90 female and 89 male with the mean (range) age of 48.3 ± 4.7 (41 to 60) days. Slit lamp examination and Bruckner test were normal in all the infants. The mean (SD) spherical equivalent differed between Spot photoscreening and non-cycloplegic refraction (-0.25 ± 2.25 diopter [dpt] vs +1.09 ± 0.06 dpt, t=10.965, P<0.01). Non-cycloplegic retinoscopy showed only 2 eyes with hyperopia over +4.5 dpt, 31 eyes between +3.0 dpt and +4.25 dpt, 55 eyes between +2.0 dpt and +2.75 dpt, 253 eyes between +0.0 dpt and

+1.75 dpt while 17 eyes with myopia from -0.50 dpt to -3.50 dpt. Only one eye manifested astigmatism over 2.0 dpt in any meridian, 14 eyes over 1.5 dpt, and 144 eyes over 0.5 dpt. There were 5 infants with anisometropia (spherical equivalent) over 2.50 dpt, 15 with anisometropia (spherical equivalent) between1.5 dpt and 2.5 dpt while 62 infants had 0.5 dpt to 1.38 dpt binocular difference.

For Spot photoscreening, based on the criteria specified by the AAPOS 2013 guidelines for ARF, 9 eyes(2.6%) were detected with hyperopia over 4.5 dpt in any meridian; 63 eyes(18.2%) with astigmatism over 2.0 dpt in any meridian; and 19 infants(10.61%) with anisometropia (spherical equivalent) over 2.5 dpt).

CONCLUSION: Spot photoscreener shows a relative higher ratio for detecting ARF comparing non-cycloplegic retinoscopy refraction in 1 to 2 months old babies. The further investigation is essential to control the efficiency for photoscreener to detect amblyopia in very early childhood.

PU-082

中国儿童眼眶容积的两向性发育

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目的：建立 15 岁以下儿童眼眶容积正常发育曲线，分析其发育规律。

方法：采用螺旋 CT 技术，对 110 名 1 ~ 15 岁儿童进行检查，测量其眼眶容积并依据年龄绘制散点图。

结果：1 岁时平均眼眶容积男孩为 13.77 ± 1.93 cm^3，女孩为 13.10 ± 0.23 cm^3；当 15 岁时眼眶容积分别增长到男孩 21.51 ± 3.30 cm^3，女孩为 19.45 ± 0.82 cm^3。与 1 岁相比男孩增长 1.6 倍，女孩增长 1.5 倍。两侧眼眶容积差别没有统计学差异（t=0.151，$P > 0.05$）。眼眶容积的改变与年龄呈正相关（r=0.706, $P < 0.05$），随年龄的增长而增加。在整个小儿期，男孩眼眶容积大于女孩，其生长曲线相似，13 岁后两性间眼眶容积的差异有统计学意义（t=4.871，$P < 0.05$）。

结论：儿童眼眶容积发育的生长规律符合神经系统的生长发育模式，3 岁内发育迅速。

Biphasic growth of orbital volume in Chinese children

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OBJECTIVE: The aim of this study was to map out the developmental curve of the orbital volume of Chinese children aged 1-15 years.

METHODS: CT scanning was performed on 109 children and the orbital rim distance（IORD），and extent of exophthalmos were measured on the CT images and plotted against age.

RESULTS: The development of the orbit structure followed a biphasic pattern.The first growth phase was before 3 years and 12 years of age.The growth speed in the first phase was about 3 times that of the second one（first vs second phase：2.28cm^3/year vs 0.67cm^3/year for orbital volume，5.01mm/years vs 1.57mm/year for IORD,1.29mm/year vs 0.42mm/year for the exophthalmos）.During development，there was no significant difference between boys and girls before 12years of age.However，after 12 years of age，boys had significantly large orbital volumes（22.16 ± 2.28 cm^3/year vs 18.57 ± 1.16 cm^3/year，$p < 0.001$）and a greater IORD(96.29 ± 3.18mm/year vs 91.00 ± 4.54mm/year,$p < 0.001$）than girls.

CONCLUSIONS: In Chinese children，the developmentalmentof orbital volume follows a biaphasic pattern and a sex difference becomes significant after the age of 12 years

PU-083

儿童睑缘炎相关角结膜病变的误诊病例分析

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目的：分析儿童睑缘炎相关角结膜病变患儿的各种临床表现、体征以及治疗效果，探讨该病的误诊原因。

方法：回顾自 2012 年 1 月至 2017 年 1 月在我科就诊的 25 例儿童睑缘炎相关角结膜病变患儿的病历资料，分析这些病例的误诊原因。

结果：25 例儿童睑缘炎相关角结膜病变患者，男性 10 例，女性 15 例，年龄 2 岁 -12 岁，其中有 13 例曾被误诊为病毒性角膜炎，7 例曾被误诊为慢性结膜炎，5 例曾被误诊为过敏性性结膜炎。所有患者在外院反复治疗数月至数年后病变没有好转，且经常发作导致角膜云翳或白斑形成。在我院门诊或住院部经正规睑缘炎治疗，包括口服抗生素、局部物理治疗和局部抗感染 / 抗炎治疗，1 周后病情明显好转，至最后一次门诊复查，所有患者病情稳定未复发。

结论：儿童睑缘炎的临床表现多种多样，可分为眼睑皮肤病型、麦粒肿或霰粒肿型、结膜充血型和角膜溃疡型。因此对于双眼睑经常发红或发生麦粒肿或霰粒肿，或者经常出现眼红卡痛的患儿，应仔细检查双眼上下睑睑缘和睫毛根部的形态改变，评估其睑板腺开口和分泌物是否正常，从而避免将其误诊为常规的结膜炎或角膜炎。治疗原则是热敷按摩眼睑，加上局部抗感染、抗炎或全身抗感染治疗。

Analysis of misdiagnosed cases of Blepharokeratoconjunctivitis in children

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PURPOSE: Analyzing the clinical features of misdiagnosed blepharokeratoconjunctivitis (BKC) cases in children, in order to explore the reasons of the misdiagnosis.

METHODS: A retrospective design was used in 25 patients with a diagnosis of BKC between Jan 2012 and Jan 2017. All patients were aged between 2 years old and 12 years old, and there were 10 males and 15 females.

RESULTS: All the patients were treated in the other hospitals for several months or years but the patients' condition did not improved. There were 13 cases with a previous diagnosis of viral keratitis. 7 cases with a previous diagnosis of chronic conjunctivitis, 5 cases with a previous diagnosis of allergic conjunctivitis. All the cases had cornea lesions which would be cloudy or leucoma due to the misdiagnosis and inappropriate treatments. After the appropriate treatment for BKC in our hospital, which included oral antibiotic, local hot compress and massage, and local antibiotic/antiinflammation, symptoms and signs in all the patients were improved in 1 week and the treatment continued for 1-3 months. All the patients are stable till the last follow-up.

CONCLUSIONS: BKC is a common but underrecognized problem in children. The clinical presentation of BKC in children varies, which could be devided into several types, such as eyelids skin type, hordeolum/meibomian cyst type, conjunctival hyperemia type and cornea ulcer type. Therefore, when we see the children with red eyes, photophobia and recurrent chalazia or sties, we should check the margins of the upper and lower eyelids, in order to differentiate BKC with common conjunctivitis and keratitis. The principle of treatment is oral antibiotic, local hot compress and massage, and local antibiotic/antiinflammation.

PU-084

晶状体后圆锥的临床特征和疗效分析

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目的：研究晶状体后圆锥的临床特点及治疗效果。

方法：总结分析 2010.1 至 2017.1 在我院收治的 25 例晶体后圆锥病例。所有患者均行白内障针吸 + 后囊膜切开 + 前段玻璃体切除＋人工晶体植入术。术中所有操作都在前房灌注下进行。术后 2 周、3 月、6 月、12 月，以后每年复查 1 次，行视力、眼压、验光和眼底检查。

结果：晶体后圆锥患儿 25 例 25 眼，均为单眼发病。手术时患儿年龄 5 岁到 11 岁，平均 7.0 ± 1.5 岁；随访时间 6 月到 84 月，平均 48.5 ± 11.2 月。术中未出现并发症；术后早期前房炎症轻，瞳孔活动度好；迄今尚未出现严重并发症。术前患眼平均最佳矫正视力 0.23 ± 0.16，至最后一次随访，术后平均最佳矫正视力：0.64 ± 0.31。

结论：晶状体后圆锥是一种罕见的先天性晶状体形态异常性疾病。临床表现为晶状体后囊膜局限性向玻璃体腔膨出，从而导致近视和不规则散光。并且，晶状体后囊膜圆锥可能发生破裂导致部分或整个晶状体发生混浊。后圆锥可能位于后囊中央或偏中心。对于偏中心型小瞳下可能不容易发现。故对于视力下降，明显散光伴屈光参差的患儿，应在散瞳后详细行裂隙灯检查，以免漏诊。

Analysis of the Clinical features of lenticonus in children

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PURPOSE: To study the clinical features and surgical effect of lenticonus cases in children.

METHODS: A retrospective design was used in 25 patients with a diagnosis of unilateral lenticonus between Jan 2010 and Jan 2017. All patients were underwent needle aspiration, posterior capsulotomy and anterior vitrectomy. All the surgical procedures were using the anterior chamber maintainer. Postoperative follow-ups were arranged in 2 weeks, 3 months, 6 months, 12 months and then once a year. Visual acuity, IOP, refraction and fundus were checked in each follow-up. All patients were given multifocal glasses according to the result of refraction and amblyopia treatment was given if needed.

RESULTS: All patients were aged between 5 years old and 11 years old, and the follow-up range is from 6 months to 84 months. There was no complication during the operations and the reaction early after the operation is mild. There was no late postoperative compli-

cation, such as IOL dislocation, secondary glaucoma, distorted pupil and retinal detachment. The average BCVA before the operation was 0.23 ± 0.16 and the average BCVA after the operation was 0.64 ± 0.31 till the last follow-up.

CONCLUSIONS: Lenticonus is a rare congenital morphology anormaly. The clinical presentation is a local bulge of the posterior capasule which intrudes into the vitreous cavity, and this would lead to myopia and inregular astigmatism. Moreover, the conus might break, which would lead to local or total lens opacity. The conus is located in the center or decentration of the posterior capasule. Decentration type is not easy to be detected in a small pupil. So if we see a patient with decreased vision, distinct astigmatism and anisometropia, we should do a careful slitlamp examination with a dilated pupil, in order to avoid misdiagnosis.

PU-085

角膜塑形镜控制青少年近视效果的影响因素分析

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目的：评估角膜塑形术控制近视眼眼轴增长的效果及分析眼轴增长的影响因素。

方法：对 2013 年 7 月至 2014 年 6 月在我院眼科佩戴角膜塑形镜的近视患者 98 例（192 眼）进行回顾观察，根据其佩戴 OK 镜 1 年后的眼轴增量分组，小于平均数 (0.20 ± 0.22)mm 者纳入慢组，余下纳入快组，比较两组患者相关影响因素差异。将戴镜前与戴镜 3、6、12、18、24 个月的眼轴长度进行对比。以 $P < 0.05$ 为差异有显著统计学意义。

结果：所有观察对象 2 年的眼轴增长平均值为（0.40 ± 0.30）mm，戴镜前后的眼轴的差异在第 3 个月时无显著统计学意义（$P > 0.05$），自第 6 个月开始有显著统计学意义（$P < 0.05$）。两组比较，戴镜前的年龄和等效球镜度差异有显著统计学意义（$P < 0.05$），而角膜曲率值、散光度、眼轴差异无显著统计学意义（$P > 0.05$）。多因素回归分析结果显示，戴镜前的年龄和等效球镜度进入回归模型，为戴镜 2 年眼轴增量的影响因素（$P < 0.05$）。

结论：戴 OK 镜的最初 3 个月眼轴增加不显著，自第 6 个月后眼轴增加速度出现分化，受戴镜前的年龄及近视等效球镜程度的影响，年龄越大，近视等效球镜度越高则角膜塑形镜控制效果越好。

Factor analysis of juvenile myopia control by orthokeratology

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OBJECTIVE: This clinical study attempted to evaluate the effect and the potential influencing factors of myopia control by orthokeratology.

METHODS: Retrospective clinical analysis. 98 cases (192 eyes) who performed orthokeratology from July 2013 to June 2014 in our hospital was carried out, based on their axial length growth in the first year, we divided them into slow group who were less than average (0.20 ± 0.22) mm, and fast group for the rest, the differences of various factors between two groups were analyzed. We compared axial length between baseline and 3^{ed}, 6th, 12th, 18th and 24th month of two groups. $P < 0.05$ for statistical significance.

RESULTS: The average 2 year axial growth for all objects was (0.40 ± 0.30) mm, the difference at 3^{ed} month was not significant ($P > 0.05$), the differences became significant since 6th month ($P < 0.05$). Compare the two groups, baseline age and spherical equivalent were significant different ($P < 0.05$), but baseline corneal curvature, astigmatism and axial length were not significant different ($P > 0.05$). Multiple regression analyses showed, baseline age and spherical equivalent entered regression model, they were two influencing factors for axial length growth after 2 years orthokeratology ($P < 0.05$).

CONCLUSION: The axial length growth for first 3 months after orthokeratology was not significant, axial length growth came to a division since 6th month, it was affected by baseline age and spherical equivalent, the elder the age, the higher the myopia spherical equivalent, the better the orthokeratology control.

PU-086

儿童异常瞬目与泪膜脂质层厚度相关性探讨研究

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目的：通过对异常瞬目的儿童进行眼表相关检查及分析，探讨其与泪膜脂质层厚度之间的相关性。

方法：本研究采用前瞻性对比研究方法，分为 2 组。（1）异常瞬目组：选取 2016 年 11 月至 2017 年 2 月在兰州市第一人民医院眼科就诊的异常瞬目为主诉的儿童患者 32 人，其中男性 18 人，女性 14 人，年龄在 5—16 岁之间，平均年龄 10.5 岁（2）对照组：选取同样时间段内以非异常瞬目为主诉的儿童患者 32 人，其中男性 14 人，女性 18 人，年龄在 3.5—17 岁，平均年龄

10.25 岁。在相同的检查环境下由同一名检查者对两组患儿进行裂隙灯及屈光检查、Lipiview 眼表面干涉仪分析。对比分析两组患儿的各项检查结果。

结果：（1）屈光检查：两组无明显差异。（2）脂质层厚度检查 (LLT): 异常瞬目组 LLT 23-86nm，平均 54.5nm。对照组 LLT 结果 60-100^{+} nm, 平均 >80nm。对比分析提示：异常瞬目组患儿 LLT 厚度明显下降，检查结果均与症状表现出正向相关，与患儿的年龄及性别无相关性。

结论：泪膜脂质层厚度测量对儿童异常瞬目的病因学诊断可能有指导意义，但因样本量小，还需增加样本量后进一步分析。

Research on the correlation of children's abnormal blinking and tear film lipid layer thickness

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OBJECTIVE: To explore the correlation of children's abnormal blinking and tear film lipid layer thickness through inspections and analysis on ocular surface.

METHODS: Case-control study was employed in the research, the subjects were categorized into two groups: 1) Abnormal blinking group: 32 children (18 male, 14 female) with self-reported as abnormal blinking patients visited the ophthalmology department in Lanzhou No.1 People's Hospital from November 2016 to February 2017 were selected. With the age between 5 – 16 years old, average 10.5 years old. 2) Control group: 32 children (14 male, 18 female) with non-self-reported as abnormal blinking patients aged between 3.5 – 17 years old, average 10.25 years old. Slit lamp examination and refractory inspection, LipiView ocular surface interferometer analysis were conducted to all objects by the same examiner in the same environment.

RESULTS: 1) refractory inspection:no significant difference observed form this two groups. 2) Lipid layer thickness (LLT): Abnormal blinking group:23 – 86nm, average 54.5nm.Control group:60-100+nm, average>80nm. Analysis,

patients in abnormal blinking group had significantly low LLT,and,no significant relativity with sex and age. But a positive correlation was noted between the inspection results and the symptoms.

CONCLUSIONS: The measurement of LLT has a guided significance to the etiology of Children's abnormal blinking. More exploratory analysis should be conducted with a larger sample size.

PU-087

白内障术后儿童屈光发育观察

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目的：探讨一岁内发现白内障并承受手术的无晶体眼儿童的屈光发育规律。

方法：回顾性分析了 58 例 109 眼（单眼 7 例）一岁内白内障摘除术后无晶体眼儿童 3 岁前的阶段性屈光检测结果。其中男性 45 例 83 眼，女性 14 例 26 眼。平均手术年龄 5.28 月。验光方法采用手持电脑验光仪联合人工检影技术。屈光检测时段为生后 3 月、6 月、9 月、12 月、18 月、24 月、30 月、36 月。

结果：在以上时段检测的无晶体眼的屈光度（等效球镜度）分别为：19.007D ± 2.777D、17.038D ± 3.558D、17.644D ± 3.362D、16.457D ± 3.007D、15.630D ± 2.840D、14.803D ± 2.89D、14.449D ± 2.735D、13.930D ± 2.668D。3 年里等效球镜度平均降低 5.007D。其中第一年平均降低 2.550D，第二年平均降低 1.654D, 第三年降低 0.873D，患儿第 12 个月，第 24 个月以及第 36 个月屈光度配对 t 检验，p 值均 <0.01。

结论：无晶体眼儿童屈光度在生后第一年降低最大，前三年降低幅度呈平稳降低趋势。较正常儿童明显增大。

The Refractive Changes In Children After Cataract Surgery

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PURPOSE: To evaluate the refractive status in infants who underwent cataract surgery before one year old.

METHODS: Refraction examination was preformed in 58 aphakia children (109 eyes, unilateral aphakia 7 eyes), who underwent binocular or unilateral cataract surgery before one year old, in their age of 3 months, 6 months, 9 months, 12 months 18 months, 24 months, 30 months and 36 months. 45 male (83 eyes) and 14 female (26 eyes) were included. The mean age at the time of cataract surgery was 5.28 months. Refraction was evaluated by computer optometry combined with retinoscopy optometry.

RESULTS: The mean refractive status in 3 months is 19.007D ± 2.777D,6 months is 17.038D ± 3.558D, 9 months is 17.644D ± 3.362D, 12 months is 16.457D ± 3.007D, 18 months is 15.630D ± 2.840D, 24 months is 14.803D ± 2.89D, 30 months is

14.449D ± 2.735 and 36 months is 13.930D ± 2.668D, statistical significance (P<0.01, paired t-test). The average reduction of refraction in first 3 years is 5.007D. The mean reduction in the first year is 2.550D, in the second year is 1.654D, and in the third year is 0.873D.

CONCLUSION: The refraction of aphakia children was reduced the most in the first year. The annual reductions are more than normal children in the first three years.

PU-088

玻璃体手术器械在先天性白内障术后并发症中的应用

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目的：评价玻璃体手术器械在治疗先天性白内障手术并发症中的临床疗效。

方法：回顾性分析 6 例先天性白内障术后出现后囊口膜闭的患儿，采用 23G 玻切头和眼内剪等器械进行后囊膜再切开和前段玻璃体再处理。

结果：所有患儿手术时间在 30 分钟以内，手术后眼内反应轻，随访 12 个月以上视轴区保持透明。

结论：玻璃体手术器械在处理先天性白内障术后后囊膜膜闭等并发症中微创、手术时间短、术后反应轻。

Surgical Instruments of Vitrectomy Applied in the Complications of Congenital Cataract

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OBJECTIVE: To evaluate the clinical efficacy of vitrectomy instruments in the treatment of complications of congenital cataract surgery.

METHODS: To analyze retrospectively 6 cases of congenital cataract with the capsule and the membrane closed . Treated the posterior capsule and anterior vitreous with 23 G vitrectomy and intraocular shear device.

RESULTS: All the surgeries completed within 30 minutes.After sugery intraocular reaction was mild and the visual transparency kept for 12 months.

CONCLUSION: The surgical instruments in the treatment of posterior capsular membrane closure complications after congenital catarat sugery were minimal incision, short operation time, light postoperative reaction .

PU-089

双泪小管置入式人工泪管治疗小儿泪小管断裂的临床疗效观察

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目的：研究双泪小管置入式人工泪管在小儿泪小管吻合术中应用的可行性及临床效果。

方法：2015 年 6 月 -2016 年 7 月来我院就诊的 1-10 岁泪小管断裂患者共 13 例 (13 眼)，上泪小管断裂 4 例、下泪小管断裂 8 例、上下泪小管断裂 1 例。全麻后常规显微镜下寻找泪小管鼻侧断端；置入双泪小管置入式人工泪管后调整硅胶管位置；牵拉鼻腔硅胶管游离端使泪小管及眼睑解剖复位；吻合泪小管断端、缝合眼睑裂伤。术后 9-10 天拆线；术后冲洗泪道 1 个月一次，6 个月拔管；拔管后随访 6 个月。

结果：术中 13 例泪小管断裂全部吻合成功。拔管后，13 例患儿伤口愈合良好，均无眼睑或泪点外翻；共 12（ 92.3%) 例患儿治愈无溢泪，泪道冲洗通畅，1 例 (0.77%) 患儿因泪点撕裂提前拔管，存在轻度溢泪症状，泪道通而不畅。

结论：双泪小管置入式人工泪管治疗小儿泪小管断裂治疗有效率高，且可以同时吻合上、下泪小管，能有效预防瘢痕性泪小管狭窄及术后瘢痕性睑外翻，利于美容修复。

The treatment effect of children lacrimal canalicular laceration using Double lacrimal ductule insert artificial lacrimal duct

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OBJECTIVE: To study The treatment effect of children lacrimal canalicular laceration using Double lacrimal ductule insert artificial lacrimal duct

METHOD: 13 children with lacrimal canalicular laceration aged from 1 to 10.8 with lower lacrimal canaliculi laceration, 4 with upper canaliculi laceration and 1 with double lacrimal canaliculi laceration. After general anesthesia, Looking for the broken ends of fractured

lacrimal canaliculi, implant the Double lacrimal ductule insert artificial lacrimal duct, suture the lacrimal ductule and lacerationofeyelid. Take out stitches on the 9th day after operation, irrigation of lacrimal passage monthly.After 6 month Pull out the artificial lacrimal duct, Follow-up continued for 6 months.

RESULT: After extubation, 13 cases of children with good wound healing and without ectropion, 12 cases without epiphora and have Flush unobstructed lacrimal duct. 1 child Pull out the artificial lacrimal at the 4th month,because of the complications of lacrimal point tears.

CONCLUSION: Double lacrimal ductule insert artificial lacrimal duct used on lacrimal canaliculi laceration anastomosis have a a higher efficiency. With this Artificial lacrimal duct, we can repair the patient who with upper and lower lacrimal ductule, And we can do effective prevention to stenosis of lacrimal canaliculus caused by cicatricial contraction good for cosmetic repair.

PU-090

中高度远视早期筛查足矫对调节性内斜视的影响

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目的：研究早期筛查发现中高度远视并且足矫对屈光性调节性内斜视患者的影响

方法：选取本院 2015 年 1 月 ~ 2015 年 12 月门诊筛查的 12 例中高度远视患者为研究对象 , 平均年龄 2 岁，阿托品散瞳验光均为中高度远视，足矫配镜时均未发现内斜视，给予患者早期常规足矫戴镜原则进行治疗 , 并定期（三个月）检查戴镜和不戴镜眼位。

结果：12 例患者中有 5 例在其后的一年随诊中发现不戴镜有内斜视，戴镜眼位正位。

结论：屈光性调节性内斜视在儿童中为较为常见的内斜视类型 , 患者年龄越小、异常视网膜对应者以及配戴完全矫正眼镜时间越晚其眼位回退率就越高 , 故早期筛查发现有中高度远视患者及时给与足矫配镜；同时对于合并弱视的患者及时给予治疗 , 并及时给予双眼单视功能训练 , 能有效提高屈光性调节性内斜视的治愈率。特别是对于年龄较小而且有中高度远视患儿早期足矫配镜更加有利于调节性内斜视的治愈。

因此，早期筛查发现中高度远视患者给与足矫配镜，对于内斜视和弱视均有早期提前干预的作用。

The-early-screening and completely-correcting of high and moderate hyperopia plays an important role in accommodative esotropia

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PURPOSE: To find the effect of early screening and completely refractive correcting of moderate and high hyperopia to accommodative esotropia patients

METHODS: in our hospital from January 2015 to December 2015, 12 cases of clinic screening high hyperopia patients as the research object, the average age is 2 years old, After atropine mydriatic optometry in the diagnosis of high hyperopia atropine mydriatic optometry, who has not been found esotropia glasses for the correction, given early in patients with normal foot wearing lens correction principle of treatment, and check regularly (3 months) eye wear and don't wear glasses.

RESULTS: 5 patients with 12cases found no esotropia with lens and esotropia without lens in the subsequent year.

CONCLUSION: refractive accommodative esotropia in children is the most common type of esotropia. Smaller ,the children with the esotropia ,later he or she wears the glasses , the higher the recurrence esotropia. So the early screening and finding in patients with high and moderate hyperopia ,timely giving them enough glasses, giving the amblyopia patients timely treatment at the same time, and in a timely manner to give eyes visual function training, can effectively improve the cure rate of sex refractive eaccommodative esotropia. Especially for younger and who has a highly hypermetropia children early completely corrected glasses for more dresses to cure of accommodative esotropia.

Therefore, early screening and giving proper glasses to people with the esotropia found highly farsighted .It has the effect of early intervention in advance.

PU-091

循证系统评价青少年近视患者配戴角膜塑形镜安全性的医学文献

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目的：针对青少年近视患者配戴角膜塑形镜的安全性，系统评价现已发表的临床研究，筛选出符合质量的文献，严格评价文献，进行定性合成，得出可靠的综合结论。

方法：收集到 2010/01/01~ 2015/12/31 PubMed 上中英文相关文献共 34 篇，根据拟定的纳入和排除标准，阅读标题、摘要和全文，检出能回答研究问题文献资料 8 篇。

结果：隐形眼镜的使用被确定为微生物角膜炎的主要危险因素，其中以铜绿假单胞菌最常见，其次是革兰氏阴性葡萄球菌和棘阿米巴。不良事件高峰期发生于戴镜的第 6 个月到 12 个月之间。长期配戴角膜塑形镜后角膜的生物力学、厚度和内皮细胞均相对稳定。

结论：在做好科学的镜片护理和良好的临床配适的情况下，角膜塑形镜有利于儿童矫正近视，长期配戴是相对安全的。角膜塑型镜的不良事件和停戴的发生率相对较低。

The Safety of Orthokeratology in Young Myopic Patients: A Literature Review

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PURPOSE: To review relevant published literature both in English and Chinese to evaluate the safety of orthokeratology for the temporary treatment of myopia in young patients.

METHODS: We searched primary relevant clinical studies published in English and Chinese from PubMed from 2010/01/01 to 2015/12/31. The literature search identified 34 references. Their titles and abstracts were assessed by two review authors independently, and full texts were reviewed if necessary. 8 papers which met the inclusion criteria, including 6 English and 2 Chinese papers, were included in the final review.

RESULTS: Contact lens use was identified as the dominant risk factor for microbial keratitis. P Aeruginosa has been the most commonly reported organism associated with contact lens wear, followed by coagulase-negative Staphylococcus and Acanthamoeba. Most adverse events were found between 6 and 12 months of lens wear. A higher incidence of adverse events was found with orthokeratology compared with spectacles. Corneal biomechanical, corneal topography, corneal thickness and corneal endothelial cell were found to be relatively stable during long-term wearing.

CONCLUSIONS: It is relatively safe for youth to wear high DK material orthokeratology contact lens with long term under the circumstances of good clinical practice in fitting these lenses scientifically. The relatively low incidence of adverse events and discontinuations with orthokeratology is conducive for the correction of myopia in children with orthokeratology contact lenses.

PU-092

儿童眼弓蛔虫病的精确诊疗

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目的：观察儿童葡萄膜炎中眼弓蛔虫的精确诊断和个性化治疗。

方法：儿童葡萄膜炎 13 例，通过酶联免疫吸附试验检测血清和或眼内液体（房水、玻璃体）中犬弓蛔虫抗体，从而确诊眼弓蛔虫病，给予常规抗炎治疗或玻切术。

结果：诊断眼弓蛔虫病 6 例，行玻切术 2 例，抗炎保守治疗 4 例。以单眼肉芽肿病灶和眼内炎症型为主。5 例视力提高显著。

结论：作为省内唯一一家可以检测犬弓蛔虫抗体的医疗机构呼吁：对于儿童葡萄膜炎一定要警惕眼弓蛔虫病的可能，早期诊断，积极治疗，可显著改善儿童眼弓蛔虫病的预后。

Accurate diagnosis and treatment of children ocular toxocariasis

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OBJECTIVE: To observe the accurate diagnosis and individualized treatment of pediatric uveitis in toxocaral eye.

METHODS: 13 cases of pediatric uveitis, adsorption and serum were detected by ELISA or intraocular fluid (aqueous, vitreous body) of Toxocara canis antibodies, which were ocular toxocariasis, given conventional anti-inflammatory therapy or vitrectomy.

RESULTS: the diagnosis of ocular toxocariasis in 6 cases, 2 cases underwent vitrectomy, anti-inflammatory and conservative treatment in 4 cases. Monocular lesions and intraocular inflammation type granuloma. 5 cases showed significant improvement in visual acuity.

CONCLUSION: as a medical institution in the province only can detect Toxocara canis antibodies called: for pediatric uveitis must guard against ocular toxocariasis may, early diagnosis, active treatment, can significantly improve the prognosis of children with ocular toxocariasis.

PU-093

儿童散光快速筛检策略及准确性研究

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目的：采用向量分析法比较快速筛选仪 Spot 不同筛选标准与睫状肌麻痹验光散光值的相关性。

方法：对 2015 年于我院门诊就诊的 273 人（546 只眼）、年龄 3~14 岁的患者分别进行 Spot 摄影验光仪和散瞳验光检查，并对测量所得散光值采用向量分析法（J0，J45）进行线性回归分析。

结果：共检查 273 人（546 只眼），男 155 人（56.78%），女 118 人（43.22%），年龄 3~14 岁，平均年龄 6.92 ± 1.969 岁。全部进行散瞳验光（RJ_0，RJ_{45}）和 Spot 验光（SJ_0，SJ_{45}），并进行回归分析，RJ_0=0.231+0.554 J_0，RJ_{45}=-0.043+0.356XS J_{45}，

结论：Spot 的检查结果与“金标准”高度相关，适用于儿童特别是低龄儿童的检查，同时适用于大规模人群筛查。

Strategy and Accuracy of Rapid Screening of Children’s Astigmatism

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PURPOSE: To evaluate the pertinence of different screening criteria of the Spot and cycloplegic refraction in detecting astigmatism by vector analysis method.

METHODS: 273 patients (546 eyes) in the clinic in Tianjin Medical University eye hospital in 2015 were examined, ranging in age from 3 to 14. Screening of astigmatism was attempted with both the Spot and cycloplegic refraction, results were assessed using linear regression analysis by vector analysis method(J_0，J_{45}).

RESULTS: A total of 273 patients (546 eyes)were included，ranging in age from 3 to 14. The average age of the patients was 6.92 ± 1.969. Of the total, 155(56.78 %)were male, 118(43.22 %)were female. Screening was attempted with both cycloplegic refraction(RJ_0，RJ_{45}) and the Spot(SJ_0，SJ_{45}), results were assessed using regression analysis. RJ_0=0.231+0.554 J_0，RJ_{45}=-0.043+0.356XS J_{45}

CONCLUSIONS: The test result of the Spot are highly relevant to the “gold standard”. So the Spot is suitable for children, especially for young children, and it is suitable for screening of the large-scale population .

PU-094

睡眠质量与儿童近视进展的相关性研究

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目的：分析睡眠质量与儿童近视进展的相关性，初步探讨睡眠在儿童近视发生发展中的潜在影响。

方法：2014.1-2016.10 在广州市儿童医院就诊并确诊的近视患儿 291 名，年龄 10~18 岁，根据近 1 年来近视进展程度，全部患儿分两组，近视进展度数 <1.0D 为稳定组，近视进展度数 ≥1.0D 以上为进展组。所有患儿均由专业眼科医生进行检查及病史追溯，检查项目包括视力测定，常规眼科检查，及散瞳后屈光度检查。睡眠质量采用匹兹堡睡眠质量指数量表（PSQI）进行评估。

结果：与稳定组相比，近视进展组儿表现为睡眠障碍患病率高 (28.21% vs.14.16%；χ^2=5.713，P =0.017）、睡眠质量差（PSQI 总指数：3.26 vs.2.41；Z=-2.695，P=0.007）。其中主观睡眠质量，睡眠持续性，日间功能紊乱这三个因子稳定组显著优于进展组。在考虑了因素之间的相互作用后，多元 Logistic 回归提示主观睡眠质量和睡眠持续性为近视进展的独立影响因素。

结论：睡眠与儿童近视的进程进展有密切关联，在儿童近视的预防和干预中，家长学校应关注儿童的睡眠质量。

The relationship between sleep quality and progression of myopia in Children

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OBJECTIVE: To investigate the relationship between sleep quality and the progression of myopia in Children.

METHODS: A total of 291 outpatients aged 10-18years were recruited from Guangzzhou Women and Children Medical Center during Jan,2014 to Oct,2016. They were examined by professionaldoctors,including visual aculty, routine eye examination, and cycloplegic autorefraction. Sleep quality was evaluated by Pittsburgh Sleep Quality Index (PSQI).

RESULTS: The prevalence of sleep disorder was 28.21% in the progress group,and 14.16% in the Stable group (χ^2=5.713，P =0.017）. Children in the progress group exhibited poorer PSQI scores3.26 ± 1.81, and 2.41 ± 1.46 in the Stable group. (Kruskal-Wallis test, Z=-2.695,P=0.007).Progress of myopia in children significantly correlated with sleep subjective sleep, sleep duration and daytime dysfunction. Subjective sleep quality and sleep duration were independent factors of myopia progression(Logistic regression).

CONCLUSION: Sleep quality in children was significantly correlated with myopic progress. Sleep quality should be paid close attention in the prevention and treatment of childhood myopia.

PU-095

儿童眼部肿物 138 例临床病理分析

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目的：探讨儿童眼部肿物的病理学特点。

方法 回顾性分析 2012 年 7 月至 2016 年 8 月河北省儿童医院眼科收治的 138 例儿童眼部肿物的临床资料和手术切除的病理标本。

结果 138 例儿童眼部肿瘤中，男性 76 例，女性 62 例；右眼 52 例，左眼 84 例，双眼 2 例。患儿年龄 2 个月至 12 岁，平均 3.8 岁。眼眶肿物 112 例（81.16%），常见为皮样囊肿（109 例）和钙化上皮瘤（3 例）。眼睑肿物 12 例（8.70%），为钙化上皮瘤 9 例，错构瘤 2 例，毛细血管瘤 1 例。角膜结膜肿物 14 例（10.14%），包括角膜皮样瘤 5 例，其中一列为Goldenhar综合症；皮脂瘤 5 例，结膜表皮样囊肿 1 例为双眼，结膜骨瘤 1 例，结膜黑色素痣 2 例。

结论 儿童眼部肿物种类繁多，以胚胎性和先天性良性肿瘤为主，其中最多见是皮样囊肿，其次是钙化上皮瘤。

Clinical and pathology analyze of 138 cases of children’s ocular tumors

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OBJECTIVE: To analyze the pathological classification of ocular tumor in children.

METHODS: A retrospective study of 138 cases of ocular tumor in children from department of ophthalmology of Children’s hospital of Hebei province between July 2012 and August 2016 were performed to investigate the clinical features and histopathological classification of these tumors.

RESULTS: Of 138 cases there were 76 boy and 62 girl patients.The mean age was 3.8 years at diagnosis.Of 112 cases（81.16%）of orbital tumors,dermoid and calcified epithelioma were the most common ones.Of 12 cases（8.70%）of eyelid tumors,calcified epithelioma,hamartoma and capillaryhemangioma were found.14 cases (10.14%）of ocular surface tumors included corneal limbal dermoid,dermolipoma, conjunctiva epidermoid cyst,subconjunctival osteoma,pigmented nevus.

CONCLUSIONS: Most children’s ocular tumors are congenital and benign.Dermoid and calcified epithelioma are the common ones.

PU-096

眼科门诊学龄前儿童干眼症的发病情况调查分析

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目的：调查分析眼科门诊学龄前儿童干眼症的发病情况并对结果进行分析。了解干眼症与学龄前儿童其他眼病的伴发关系。

方法：对我院眼科门诊就诊的 660 例（1320 只眼）学龄前儿童询问病史及症状，依据裂隙灯检查、屈光检查、角膜染色、泪膜破裂时间、泪河高度、睑板腺功能检查等进行诊断及分析。

结果：208 例患儿为干眼症，患病率为 31.52%。男童 121 人，患病率为 32.69%，女童 87 人，患病率为 28.01%，男童多于女童（P ＜ 0.05）。诊断为屈光不正患儿 325 例，患干眼症 73 例，患病率为 28.01%；诊断为结膜炎患儿 151 例，患干眼症 89 例，

患病率为 28.01%，其他患儿 184 例，患干眼症 46 例，患病率为 35.87%。干眼症状中，除眼干涩、异物感、烧灼感、眼部分泌物、眼痒、视物模糊症状外，瞬目异常 62 例，占干眼患儿总数的 29.81%。

结论：学龄前儿童干眼发病率较高，因此门诊应详细检查，重视来就诊的学龄前儿童的干眼问题。学龄前儿童瞬目异常与干眼症有着一定联系，门诊有此主诉的患儿应建议做干眼症相关检查，以寻找病因，明确诊断。在诊断和治疗学龄前儿童眼部疾病的同时，不要忽视干眼症的治疗。

Investigation on the incidence of dry eye in preschool children in the ophthalmic outpatient

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OBJECTIVE: Investigation of the ophthalmic outpatient preschoolers dry eyes infection situation and analyze the results.To know Dry eyes and preschool children's relationship with other eye diseases.

METHODS: The medical histories and symptoms of 660 children(1320eyes)with xeroma were asked carefully,then Silt-lamp examination,Refractive check,The cornea dyeing,Breakup time of tear film,Height of the river of tears,Meibomian gland function were conducted to diagnose and analyze.

RESULTS: 208 individuals,including 121 men and 87 women ,were diagnosed as dry eye,and the prevalence rate was 31.52%. The prevalence of dry eye in the male(32.69%)was higher than that of female(28.01%)($P < 0.05$).325 individuals were diagnosed ametropia,including 73 were dry eye(28.01%);151 were diagnosed conjunctivitis,including 89 were dry eye(28.01%);Other eye diseases is 184,including 46 were dry eye(35.87%).In Dry eye symptoms,In addition to Eye dryness、foreign body sensation、burning sensation、eye secretions、Itchy eyes、blurred vision outside,62 individuals were diagnosed Abnormal blink,the prevalence rate was 29.81% in total of the dry eyes.

CONCLUSION: There is a dry eyes similar to that of the adult with preschool children, and its incidence is higher,so the doctor in out-patient department should pay attention to the preschool children's dry eyes who comes to see a doctor.Preschoolers abnormal blink has a connection with dry eyes, in order to find the cause and clarify a diagnosis,the preschoolers have this self-reported symptom in out-patient department should be suggested to make relevant inspection with dry eyes.When diagnose and cure eye diseases of preschool children,Dont't ignore the treatment of dry eyes .

PU-097

血管瘤栓塞治疗引起婴儿视网膜中央动脉阻塞一例报告

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患儿，女，1 岁，某日晨起，奶奶发现患儿双眼看不见玩具，4 小时后到达我院门诊就诊。追问病史患儿 2 周前曾在外院行双面颊部血管瘤栓塞治疗，具体不详。眼科检查双眼可追光，光定向不确，Retcam3 眼底广域成像系统进行眼底照相发现后极部视网膜动脉变细，可见栓子，黄斑中心凹呈现樱桃红斑，诊断双眼视网膜中央动脉阻塞。立即给予吸氧、血管扩张剂、眼球按摩等抢救治疗。

视网膜中央动脉阻塞多发生于 60 岁以上，多伴有高血压、糖尿病、心脏病、颈动脉粥样硬化的老年人。儿童和青年人少见，且发病原因多与凝血功能异常、心脏病、避孕药物和外伤有关。此病一般是单眼发病，极少双眼同时发病。本病对视功能的损害极为严重，是否能挽救部分视功能，取决于就诊及抢救是否及时，也取决于阻塞的程度、部位、原因等。

本例为婴幼儿，因行双面颊部血管瘤栓塞治疗，导致视网膜中央动脉阻塞，极为罕见。推测可能为血管瘤栓塞药剂经血液途径进入面部动脉和眼动脉，进而引起视网膜中央动脉药物栓子栓塞。近年来已发生多起因美容，额、面部注视药物引起视网膜动脉阻塞的案例，应引起大家的高度警惕。

Case report:The central retinal artery occlusion is caused by facial angioma treatment.

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A 1-year-old infant was admitted with rapid visual loss in both eyes. The central retinal artery occlusion was diagnosed based upon the symptoms of emboli in retinal artery and a cherry-red spot in the foveola by the Retcam3 image system. Light reflexes were absent and vision was suddenly dropped to light perception in both eyes in two weeks with injecting drugs into congenital facial hemangiomas in both sides. It is possible that drug emboli enter into facial artery and ophthalmic artery and induce the central retinal artery occlusion.

PU-098

酒精取小儿电极片的效果分析

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目的：减轻眼科全麻术后的小儿取电极片时疼痛与不适，增加患儿舒适度。

方法：取 2016 年 9 月至 2016 年 12 月 100 例眼科小儿临床资料，其中男 45 人，女 55 人，年龄 1-3 岁，无酒精过敏史，无皮肤病。患儿手术方式为全麻，术后予心电监护监测 2h，患儿无异常，停心电监护监测。将 100 名患儿随机分为 A、B 两组，各 50 名患儿，A 组为实验组，B 组为对照组。取电极片方法如下：（1）A 组患儿由责任护士将 75% 酒精沿电极片边缘均匀涂抹 2 分钟后，取下电极片；（2）B组患儿由护士到床旁直接取下电极片。护士取电极片时，动作轻柔，比较两组患儿皮肤受损程度。皮肤评价方法：（1）皮肤表皮完整，颜色正常为皮肤完好；（2）1 度损伤：皮肤发红；（3）2 度损伤：表皮完整，可见明显水泡；（4）3 度损伤：皮肤可见明显破损，表皮剥脱。

结果：（1）A 组：49 名患儿皮肤完整，1 名患儿皮肤 1 度受损。B 组：39 名患儿皮肤完整，10 名患儿皮肤 1 度受损，1 名患儿皮肤 2 度受损。（2）A 组：护士取电极片时 3 人哭闹，B 组：护士取电极片时 11 人哭闹。

结论：用酒精取小儿电极片，方便护理操作，增加小儿舒适度，降低小儿哭闹声，降低护理不良事件发生率。

The effect of the wine is exquisite in pediatric electrode slices analysis

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GOAL: Reduce the ophthalmic anesthesia postoperative children pick up electrode were pain and discomfort.

METHOD: 1、ecg monitoring to detect the blood pressure,heart rate,respiration,blood oxygen saturation for 2 hours.Children with the same body geomagnetic can take the ecg mon In September 2016 toDecember 2016,100case of ophthalmic clinical data.male55people,female45people,they aged 1 to 3,they don't have alcohol allergy and skin diseases .Childrend with operation method for general anesthesia,Postoperative itoring.

2、100children wererandomly divided into group A and group B, group A is experimental group group B is matched group ,two groups have 50 patients.Pick up electroude slice method:Group A: with 75% alcohol evenly along the edge of electroudes 2minutes, after that remove the electroudes.Group B:the nurse directly remove the electroudes.the nurse take electroudes.Films should be gentle,then compare two groups of patients with skin damage.Skin evaluation method:(1)complete for skin epidermis ,color is normal ,is the skin in good condition;(2)skin redness for damage for a time;(3)skin visibleblisters to complete a second damage;(3)obviously damaged skin ,skin strippedfor three degrees of damage.

RESULT: Group A:there are 49 patients with skin is complete,once a child skin damage.there are 3 patients with crying when the nurse take electrode .

Group B: there are 39 patients with skin is complete,there are 10 children with skin damaged for a time,1 children second skin damage.there are 11 patients with crying when the nurse take electrode .

CONCLUSION: In pediatric electrode slices with alcohol,convenient nursingprocedures,Increase children's comfort ,reduce children crying,reduce nursing adverse events.

PU-099

儿童 Marcus Gunn 综合征治疗临床观察

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目的：观察儿童 Marcus Gunn 综合征手术治疗效果

方法：回顾 2013—2016 年在我院就诊明确诊断为 Marcus Gunn 综合征合并中重度下垂或无轻度上睑下垂但有重度的联动者 129 例采用提上睑肌腱膜节段部分切除联合 e-PTFE 材料额肌悬吊术。术前术后分别观察上睑缘位置、上睑弧度、上睑异常联动程度。术后随访时间 10 ~ 12 个月。

结果：129 例中术后 121 例 (93.80%) 下颌瞬目联动治愈；8 例好转；术后联动出现时间：术后 3 — 6 个月之间，术后 6 个月无联动现象者多趋于稳定。126 例（97.67%）上睑位置、功能及美容疗效满意，3 例(2.32%)在术后 3 个月上睑高度回落，遮盖瞳孔超过 1 / 2，经二次手术矫正达满意效果；1例(0.78%)下颌瞬目联动幅度为 3-5 mm，但功能及美容疗效满意。4 例(3.1%)术后发生暴露性角膜炎；2 例 (1.55%) 上睑内翻倒睫；1 例 (0.78%) 术后一周发生材料排异，将材料取出后半年再次手术。

结论：提上睑肌腱膜节段去除联合 e-PTFE 材料额肌瓣腱膜悬吊术治疗儿童 Marcus Gunn 综合征手术效果满意。术中细致充分的分离提上睑肌是手术成功的关健

Clinical observation of Marcus Gunn syndrome in children

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OBJECTIVE: To observe the effect of surgical treatment of children Marcus Gunn syndrome

METHOD: A total of 129 patients who underwent partial resection of the maxillofacial pterygops were divided into two groups: Material frontal muscle suspension. The degree of upper eyelid position, upper eyelid curvature and upper eyelid abnormalities were observed before and after operation. The follow-up time was 10 to 12 months.

RESULTS: Of the 129 cases, 121 cases (93.80%) were treated with mandibular blink, and 8 cases improved. The time of postoperative collaboration was between 3-6 months and 6 months after operation. In stability. 126 cases (97.67%) on the upper eyelid position, functional and cosmetic efficacy satisfaction, 3 cases (2.32%) at 3 months after the upper eyelid height drop, cover the pupil more than 1/2, by the second operation to achieve satisfactory results ; L cases (0.78%) mandibular flash head linkage range of 3-5 mm, but functional and cosmetic efficacy. 4 cases (3.1%) occurred after exposure to keratitis; 2 cases (1.55%) inverted eyelid inverted eyelashes; l cases (0.78%) occurred after 1 week of material exclusion, the material removed again half a year after surgery.

CONCLUSION: The treatment of children with Marcus Gunn syndrome was satisfied with the levator aponeurosis and the e - PTFE material. Intraoperative and detailed separation of the levator muscle is a successful operation of the key. Early surgery for the treatment of patients with amblyopia in the early treatment to provide the necessary conditions for the physical and mental development of children to provide protection

PU-100

e-PTFE 悬吊术与额肌腱膜悬吊术治疗先天性上睑下垂术后眼表观察

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目的：观察膨体聚四氟乙烯（e-PTFE）额肌悬吊术与额肌瓣悬吊术治疗先天性上睑下垂术后对儿童眼表影响。

方法：回顾性分析比较了 2013 年 9 月至 2014 年 9 月就诊于我院 58 例先天性上睑下垂患儿，分别接受两种不同术式，在术后比较观察眼表状态，眼睑闭合情况，术后美容效果及并发症。

结果：e-PTFE 额肌悬吊术组与额肌瓣悬吊术组相比，前者眼睑闭合时间明显短于后者，泪膜破裂时间长于后者，角膜点染评分前者明显低于后者。前者暴露性角膜炎，上睑内翻倒睫等并发症较少，其余美容及功能效果比较无统计学差异。

结论：e-PTFE 额肌悬吊术与额肌瓣悬吊手术相比，手术功能与美容效果满意基本一致，但具有术后恢复时间短，眼表状态好，并发症少的反应的特点

Observation of ocular surface observation after e-PTFE suspension and frontalis aponeurosis suspension in congenital ptosis

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OBJECTIVE: To observe the effect of expanded polytetrafluoroethylene (e-PTFE) frontalis suspension and frontalis muscle suspension on children's ocular surface after congenital ptosis.

METHODS: A retrospective analysis was conducted in 58 patients with congenital ptosis from September 2013 to September 2014. Two different surgical procedures were performed. , Postoperative cosmetic effect and complications.

RESULTS: Compared with the frontalis muscle suspension group, the occlusion time of the e-PTFE frontalis muscle suspension group was shorter than that of the latter. The tear film rupture time was longer than that of the latter. The corneal staining was significantly lower than the latter. The former exposed keratitis, upper eyelid inverted eyelashes and other complications less, the rest of the cosmetic and functional effects were no significant difference.

CONCLUSION: Compared with the frontalis muscle suspension, the e-PTFE frontalis suspension is basically the same as the cosmetic effect, but it has the characteristics of short reaction time, short ocular surface state and less complication

PU-101

黏多糖储积症（Scheie 型）青光眼 2 例

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病例 1：患者李 **，女，3 岁，因“双眼流泪半年，加重伴视力显著下降 2 周”，于 2012 年 12 月入院。患者自幼双眼视力低于同龄儿童，曾经于 2011 年 3 月就诊当地医院，诊断为“角膜发育不良，双眼”；药物治疗无效。既往史：因“生长发育迟缓及双手畸形”儿科诊断“黏多糖贮积症 1 型（Scheie 综合征）”1 年。

入院查体：（略）

入院诊断：继发性青光眼，双眼；黏多糖储积综合症。

治疗策略：（略）

病例 2：患者牛 **，女，11 岁，因“双眼视力差 5 年余”，于 2015 年 6 月入院。患者自幼双眼视力低于同龄儿童，曾经于 2005 年就诊当地医院，诊断为“角膜发育不良，双眼”；药物治疗无效。既往史：1 年前因“发育滞后”儿科诊断为“黏多糖贮积症 1 型（Hurler-Sheie 综合征）”

入院查体：（略）

讨论：（略）。参考文献（略）

Secondary glaucoma due to Mucopolysaccharide storage disease(scheie type) , report of 2 cases

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To investigate the possible Mechanism between Mucopolysaccharide storage disease(MSD) and secondary glaucoma. We present 2 cases of MSD that complicated with secondary glaucoma. There are no previously published paper about these conditions.

PU-102

顺行泪道插管术治疗儿童泪道阻塞疗效分析

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目的：观察顺行泪道插管术治疗儿童复发性泪道阻塞的疗效。

方法：2015 年 3 月至 2016 年 3 月在保定市儿童医院眼科进行顺行泪道插管术治疗复发性泪道阻塞患儿 52 例（68 只眼），平均年龄 24 个月，随访 3~18 个月。分析患儿年龄、术前治疗方式对治愈率的影响。使用 Pearson 相关系数计算及独立样本 *t* 检验进行统计学分析。

结果：52 例（68 只眼）中 63 只眼治愈，总治愈率为 92.65%（65/68），总有效率 100%（68/68）。年龄因素：在 6 ~ ≤12 个月、12 ~ ≤24 个月、24 ~ ≤36 个月、＞ 36 个月年龄组中，治愈率依次为 100.00%（24/24）、95.00%（19/20）、88.24%（15/17）、71.43%（5/7），R=-0.904，P=0.0038）；术前治疗方式：泪道探通术后复发、泪道激光术后复发组中，治愈率分别为：96.15%（50/52）、81.25%（13/16），P=0.0012）。

结论：顺行泪道插管术对治疗儿童复发性泪道阻塞疗效显著，手术操作简单，具有较高的安全性，儿童泪道阻塞泪道探通术仍可作为首选治疗方式，复发病例可行顺行泪道插管术治疗，效果理想，治愈率随年龄增长呈下降趋势。

Clinical analysis of lacrimal duct obstruction treated by antegrade lacrimal intubation

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OBJECTIVE: To observe the effect of immediate lacrimal passage intubation in the treatment of recurrent lacrimal duct obstruction in children.

METHODS: From March 2015 to March 2016, 52 patients (n = 68) with recurrent lacrimal duct obstruction were performed in the Department of Ophthalmology, Baoding children's Hospital, with an average age of 24 months. The patients were followed up for 3~18 months. The effect of age and preoperative treatment on the cure rate was analyzed. Statistical analysis was performed using Pearson correlation coefficient and independent sample t-test.

RESULTS: In 52 cases (68 eyes), the total cure rate was 92.65% (65/68), and the total effective rate was 100% (68/68). Age: from 6

to less than 12 months, 12 to less than 24 months, 24 to less than 36 months, more than 36 months of age group, the cure rate was 100% (24/24), 95% (19/20), 88.24% (15/17), 71.43% (5/7) (R=-0.904, P=0.0038) before operation; treatment methods: lacrimal surgery recurrence and postoperative recurrence of lacrimal duct laser group, the cure rate was 96.15% (50/52), 81.25% (13/16) (P=0.0012).

CONCLUSIONS: Unretrograde intubation of lacrimal passage in the treatment of children with recurrent lacrimal duct obstruction has obvious curative effect, simple operation, high security, children of lacrimal duct obstruction of lacrimal passage can be used as the preferred treatment, recurrence feasible unretrograde intubation of lacrimal passage treatment, ideal effect, the cure rate decreased with the increase of age.

PU-103

经上下泪小点分别行鼻泪管探通术的手术效果及远期疗效分析

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目的：探讨经上下泪小点分别行鼻泪管探通术的手术效果及远期疗效分析。

方法：对照研究经上下泪小点分别行鼻泪管探通术的患者 100 例（其中最大年龄者 1.5 岁，最小年龄者 50 天），对比观察在常规奥布卡因表面麻醉下经上下泪小点分别行鼻泪管探通术的手术效果及远期疗效分析。

结果：50 例奥布卡因表面麻醉下经上泪小点行鼻泪管探通术患者术程顺利，术中冲洗通畅，吞咽动作明显，术后无流泪及含泪患者 45 例，术后少量含泪患者 5 例。50 例奥布卡因表面麻醉下经下泪小点行鼻泪管探通术患者术程顺利，术中冲洗通畅，吞咽动作明显，术后无流泪及含泪患者 48 例，术后少量含泪患者 2 例。

结论：经上下泪小点分别行鼻泪管探通术的手术效果及远期疗效都很肯定，但由于下泪小管吸附结膜囊内约 65%~70% 的泪液，所以经下泪小点行鼻泪管探通术治疗新生儿先天性泪囊炎泪道阻塞效果稍好于经上泪小点行鼻泪管探通术。

The effect and long - term curative effect analysis of nasolacrimal duct exploration by upper and lower tears

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OBJECT: To explore the operation and long-term curative effect analysis of nasolacrimal duct exploration by upper and lower tear points

METHODS: A total of 100 patients who underwent nasolacrimal duct exploration with upper and lower tear points (including 1.5 years of age for the oldest and 50 days for the youngest) were enrolled in the study.The operation of nasolacrimal duct exploration and long-term efficacy analysis of comparative observation of conventional anopheptal topical anesthesia by the upper and lower tear points respectively.

RESULTS: 50 cases of otic cardinal anesthesia by the small tears on the nasolacrimal duct exploration surgery in patients smoothly. Intraoperative flushing patency were used, swallowing action was obvious, no tears and 45 cases tears after surgery, a small amount of patients with tears after surgery in 5 cases.50 patients with anesthesia under the surface of anesthesia under the tears of small nodules nasolacrimal catheter surgery in patients smoothly. Intraoperative flushing patency were used, swallowing action was obvious, no tears and 45 cases tears after surgery, a small amount of patients with tears after surgery in 5 cases.

CONCLUSION: The upper and lower tear points were the operation of the nasolacrimal duct surgery and long-term efficacy are very positive, but because of the lower lacrimal duct adsorption conjunctival sac about 65% to 70% of the tears, so the tears under the small nose Lacrimal duct exploration of neonatal congenital dacryocystitis lacrimal duct obstruction effect is slightly better than the tears on the point of nasolacrimal duct exploration.

PU-104

甘肃省 133 例儿童眼外伤住院患者流行病学特征及趋势分析

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目的：通过对甘肃省 133 例儿童眼外伤的特征及各相关因素的分析 , 探讨儿童眼外伤防治的方法。

方法：收集 2012 年 1 月至 2016 年 12 月兰州市兰州大学第一医院住院治疗的 133 例（136 眼）儿童眼外伤病例，回顾性分析儿童眼外伤患者的性别、年龄、致伤月份、致伤原因、入院方式、伤眼、眼外伤类型、并发症、治疗方法和结果等。

结果：在 133 例儿童眼外伤患者中，男女比为 2.24：1；平均年龄为 6.01 ± 3.26 岁，学龄儿童（7-14 岁）好发（49.62%）；各

季节发病率大致相同；致伤原因以植物伤（21.80%）最多，致伤物主要有木棍和树枝，其次为金属锐器伤（21.05%），主要包括剪刀和铁丝；眼外伤类型主要有穿通伤（35.00%），眼附属器挫裂伤（22.86%），钝挫伤（22.14%）；最常见并发症为外伤性白内障（15.10%）、前房积血（11.41%）、角膜裂伤（10.07%）及眼内炎（6.71%）；大多数患儿难以配合检查出院视力，在完成检查的患儿中，致盲率为 29.69%，占同期眼科住院儿童致盲性眼病的 57.58%。

结论：眼外伤是儿童主要致盲性眼病之一，其并发症及相关危险因素较多，但大多数可以预防。

Epidemiological characteristics and trend analysis on 133 cases of children with ocular trauma in Gansu province

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OBJECTIVE: Based on the analysis of the characteristics of ocular trauma and the related factors in 133 children in Gansu province, the method of prevention and treatment of ocular trauma in children was discussed.

METHODS: Collected from January 2012 to December 2016 Lanzhou City, The First Hospital Of Lanzhou University hospitalized of 133 cases(136 eyes) children with ocular trauma, retrospective analysis of children with ocular trauma in patients with gender, age, wounded months, the cause of injury, injury eye, eye trauma type, complications, treatment method and results, etc.

RESULTS: In the 133 cases of children with ocular trauma, male to female ratio of 2.24: 1; the average age of 6.01 ± 3.26 years old, most are school-age children (7-14 years old) (49.62%); seasonal incidence of roughly the same ; Cause a variety of injuries, including plant injuries (21.80%) the most, mainly sticks and branches, followed by metal sharps damage (21.05%), mainly including scissors and wire; the type of ocular trauma was mainly penetrating injury (35.00%), eye attachment contusion(22.86%), blunt trauma (22.14%); the most common complications of ocular trauma were traumatic cataract (15.10%) , anterior chamber of blood (11.41%), corneal laceration (10.07%) and endophthalmitis (6.71%); Most children were unable to cope with the discharge of visual acuity. In the children who had completed the measurement, the blind rate was 29.69%, accounting for 57.58% of the blinded diseases in the same period.

CONCLUSION: Ocular trauma is one of the major blinded eye diseases in children, and its complications and related risk factors are diverse, but most can be prevented.

PU-105

Optomed 手持眼底照相机在早产儿视网膜病变筛查中的临床应用观察

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目的：比较和探讨 OPTOMED 手持式数码相机（Optomed Smartscope, OS）与 RetCam 数字视网膜成像系统 (RetCam Ⅲ, RC) 在筛查早产儿视网膜病变 (ROP) 的应用情况。

方法：研究收集 2015-2016 年在上海市儿童医院诊治的 807 例（1614 眼）平均胎龄 31.72W（24~36W）、平均出生体重 1691.72g（620~2490g）的早产儿进行 ROP 筛查。所有新生儿均分别行手持相机（OS 组）和 RetCam（RC 组）检查，采用间接检眼镜检测为标准对照。通过评估 ROP 阳性筛查率及眼底观察范围，比较两种方法的筛查结果。

结果：807 例早产儿 ROP 筛查（双目间接眼底镜检查）阳性例数为 32 例（49 眼，3.04%），确诊 ROP 并于定期复查（2 周 ~8 周）后病变消退者 22 例（33 眼，31.25%）。RC 组筛查结果与间接眼底镜检查一致；OS 组筛查 ROP 阳性 30 例（47 眼），灵敏度为 93.75%，假阴性 2 例（2 眼），均为Ⅲ区 1 期患儿，病变在随访过程中消退。

结论：使用 OPTOMED 手持式数码相机进行新生儿 ROP 眼底检查是安全有效的筛查手段，为临床早产儿 ROP 筛查工作提供更多选择。

Clinical observation of Optomed handheld fundus camera in premature retinopathy screening

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OBJECTIVE: to compare and discuss the application result of OPTOMED handheld digital camera (OPTOMED Smartscope, OS) with RetCam digital retinal imaging system (RetCam Ⅲ, RC) in premature of retinopathy (ROP) screening.

METHODS: 807 cases in preterm neonates with the average gestational age 31.72 W (24 ~ 36 W), average birth weight of 1691.72 g (620 ~ 2490 g) were collected for ROP screening from Shanghai children's hospital in 2015-2016. All newborns were separately examined with OPTOMED hand-held camera group (OS) and RetCam group (RC). By a positive assessment of ROP screening rate range and fundus observation, compare two methods of screening results.

RESULTS: 32 patients (49 eyes, 3.04%) of 807 (1614 eyes) premature infants screening were diagnosed ROP (binocular indirect ophthalmoscope examination as the golden standard) and lesions subsided in 22 patients (33 eyes, 31.25%) with a 2 ~ 8 weeks' review. In ROP screening, 5 cases were diagnosed zone Ⅰ, stage 3 combined with plus disease, 9 cases (11 eyes) zone Ⅱ, stage 3, 18 cases (28 eyes) with zone Ⅲ. Positive ROP screening result in RC group (32 cases, 49 eyes) is coincident with binocular indirect ophthalmoscope examination. 30 cases (47 eyes) were diagnosed ROP in OS group with the sensitivity of 93.75%; 2 cases (2 eyes, zone Ⅲ) were missed diagnosis in OS group, however, which were subsided during follow-up.

CONCLUSION: OPTOMED handheld digital camera for neonatal ROP fundus screening is safe and effective, which provide more choices for clinical premature ROP screening.

PU-106

眼科儿童 325 例住院患者构成比及动态变化

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目的：统计分析眼科儿童住院患者构成比 , 科学地了解本地区儿童眼科住院疾病谱的变化情况，为甘肃省儿童防盲治盲工作提供理论依据。

方法：收集 2012 年 1 月至 2016 年 12 月在兰州市兰州大学第一医院眼科住院治疗的 325 例儿童患者的临床资料 , 将患者按性别、年龄、常住地点、病种、平均治疗费用及结果进行统计。

结果：325 例患者中，30 例（9.23%）来自市内，285 例（87.69%）来自省内市外，10 例（3.08%）来自省外。男女比为 1.73：1，患者的平均年龄为 6.17 ± 3.41 岁，平均住院 5.66 天，次平均治疗费用为 7088.62 元。儿童眼科住院病人前五位的疾病是：眼外伤（31.08%）、斜视（14.54%）、白内障（12.28%）、先天性上睑下垂（9.02%），晶状体病（5.51%）。治疗结果为：216 例（80.31%）治愈，39 例（12.00%）好转，22 例（6.77%）无变化，另有 3 例未知。325 例患者致盲率为 17.10%，其中眼外伤致盲率为 29.69%。

结论：眼外伤、斜视、白内障、先天性上睑下垂、晶状体病是甘肃地区儿童眼科住院的主要的病种，应加强儿童眼病的预防，减少眼外伤等的发生。

Composition and dynamic changes of 325 inpatients with ophthalmology

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OBJECTIVE: Statistics and analysis of the composition ratio of hospitalized children in ophthalmology, and the scientifically understand the region in children with ophthalmic hospital disease spectrum changes, in order to provide the theoretical basis for the prevention and treatment of children blindness in Gansu province.

METHODS: The clinical data of 325 pediatric patients who were hospitalized from January 2012 to December 2016 in The First Hospital of Lanzhou University in Lanzhou city were collected. Statistics of patients by gender, age, place of residence, disease type, average treatment cost and result, in which the disease statistics according to the first diagnosis of discharge and major complications.

RESULTS: Of the 325 patients, 30 (9.23%) were from the Lanzhou city, 285 (87.69%) were from the province except for Lanzhou and 10 (3.08%) were outside the province. Male and female ratio of 1.73: 1, the average age of patients 6.17 ± 3.41 years, the average hospital 5.66 days, the average treatment cost of 7088.62 yuan. There are the top five children's ophthalmology inpatient diseases: ocular trauma(31.08%), strabismus(14.54%), cataract (12.28%),congenital ptosis (9.02%),lens disease(5.51%). The results were as follows: 216 cases (80.31%) were cured, 39 cases (12.00%) improved, 22 cases (6.77%) did not change, and 3 cases were unknown. 325 cases of blindness rate was 17.10%, of which 29.69% of eye trauma.

CONCLUSION: ocular trauma, strabismus, cataract, congenital ptosis and lens disease are the main diseases of ophthalmic hospitalization in children in Gansu province. We should strengthen the prevention of children's eye disease and reduce ocular trauma occur.

PU-107

儿童快速增大的结膜黑色素肿块 22 例临床分析

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目的：总结儿童快速增大的结膜黑色素肿块临床特点，以利于早期正确诊断和合理的治疗。

方法：回顾性系列病例研究。对浙江大学医学院附属儿童医院从 2005 年 7 月至 2016 年 12 月间诊治的 22 例结膜黑色素肿

块患儿进行回顾性分析。

结果：22 例患者年龄 4~9 岁，平均 5.5 岁；均为单眼发病。5 例肿块位于睑结膜和睑缘、6 例肿块位于下方球结膜、2 例肿块位于上方球结膜、9 例肿块位于睑裂部球结膜及角膜缘。睑裂部的 9 例均手术，病理报告为黑色素痣。随访时间为半年 ~3 年。其中 9 例肿块切除术后均未复发，其他的随访未见明显扩大。

结论：儿童结膜黑色素肿块良性为主，手术只要将肿块切除干净，不用扩大切除范围。术后少有复发。

Rapidly enlarging conjunctival nevi clinical analysis in 22 Children patients

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Rapidly enlarging conjunctival nevi clinical analysis in 22 Children patients

PU-108

首选眼内注射雷珠单抗治疗高危 ROP 的疗效及治疗特点

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目的：观察首选眼内注射雷珠单抗治疗高危 ROP 的疗效并阐述治疗注意事项。

方法：回顾分析 2014 年 6 月至 2016 年 5 月在我院接受眼内注射雷珠单抗治疗的 ROP 患儿。观察治疗效果并阐述治疗特点。

结果：20 例 38 眼阈值ROP/ROPI型或激进型后部ROP（APROP）接受了治疗。出生孕周平均是 28+4 ± 2+3 周（24 周-33 周），出生体重平均 1136.7g ± 295.7g（610g-1850g）。I 区病变 4 例 8 眼，APROP 3 例 6 眼，其余均为 II 区后界病变。首次注射治疗的矫正胎龄 (PMA) 平均是 37.8 ± 2.9 周（32 周 -42 周）。5 例 6 眼（15.8%）首次注射后病变未能控制行二次注射，其中 2 例 2 眼为 I 区 ROP3+，2 例 3 眼为 APROP，另 1 例为单眼牵牛花综合症合并 ROP。接受一次注射治疗眼，术后 1 周 plus 均消退，病变完全消退在 PMA50 周以上。接受二次注射治疗眼 plus 及病变均逐渐消退。随访观察半年无复发病例。无并发症发生。

结论：首选雷珠单抗治疗 APROP 及 I 型 ROP/ 阈值 ROP 安全有效。II 区病变注射一次有效，少部分 I 区病变和 APROP 需要二次注射。

Intravitreal ranibizumab as primary treatment for retinopathy of prematurity: efficacy and treatment notes

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OBJECTIVE: To observe the efficacy of using antivascular endothelial growth factor (ranibizumab) as first-line therapy in high risk retinopathy of prematurity (ROP) , and to report on treatment notes.

METHODS: Retrospectively analysis of ROP patients treated at Peking University Third Hospital during June 2014 and May 2016. Outcome measures were the clinical response to intravitreal ranibizumab (IVR) as well as treatment characteristics.

RESULTS: 20 patients were treated for high risk ROP, including threshold ROP, type I ROP and aggressive posterior ROP (APROP), in 38 eyes under topical anesthesia. 12 (60%) patients were female. Two patients required treatment in one eye only. The average gestional age of these patients was $28^{+4} \pm 2^{+3}$week（24 week-33 week）. The mean birth weight was 1136.7g ± 295.7g（610g-1850g）. Eight eyes of 4 patients had Zone I disease, six eyes of 3 patient was APROP. All others were posterior zone II disease. The mean postmenstrual age (PMA) in receiving the first IVR was 37.8 ± 2.9 week（32 week-42 week）.Six eyes of five patients (15.8%) received second injection because of continued progression of disease, in which two eyes in two patients was zone I ROP 3+, three eyes of two patients was APROP. Another eye was complicated with morning glory. The plus disease was faded in one week and ROP lesion regressed after 50 week of PMA in eyes had one injection , ROP also regressed gradually in eyes with second IVR. There were no short-term adverse events.

CONCLUSIONS: IVR is effective and safe as first-line treatment for the high risk ROP. One injection is effective in Zone II lesion, a few zone I and APROP lesions need second injection.

PU-109

角膜塑形镜对青少年复合性近视散光影响的分析

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目的：探究角膜塑形镜对不同近视度数下的复合近视散光眼角膜散光的影响。

方法：收集 2013 年 1 月到 2014 年 1 月我院视光部配戴角膜塑形镜的青少年 70 例，140 只眼，平均年龄 12.45 ± 0.36 岁，均为复合近视散光，散光度数 ≤-1.75D，矫正视力均在 1.0 及以上。根据原始近视度数分为三组，轻度近视组（≤-3.00D），中度近视组（-3.25D~-6.00D），高度近视组（≥-6.25D）。坚持配戴 2 年并按时复查，记录复查时验光的结果，对比其在戴镜满一年与两年时散光度数的变化，改变量 <-0.50D 记做不变，计算出每年散光的有效控制率，并进行统计分析。

结果：戴镜第一年间散光度数变化为 0.35 ± 0.029D，第二年间散光度数变化为 0.39 ± 0.033D，两组间比较 P=0.012。低度近视组两年间散光变化量为 0.38 ± 0.052D，中度近视组两年间散光变化量为 0.39 ± 0.044D，高度近视组两年间散光变化量为 0.49 ± 0.176D，各组之间差异 P ＞ 0.05。

结论：角膜塑形镜对青少年散光度数有一定的控制作用，且第二年控制效果略大于第一年 , 两年内散光度数变化量的大小与原始球镜度无关。

The influence of ortho-K to high compound astigmatism of adolescent

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OBJECTIVE: To investigate the relationship between the change of astigmatism and myopia in those adolescent with high compound astigmatism who wore ortho-K for two years, and to learn the influence of ortho-K to high compound astigmatism of different degree of myopia.

METHOD: We recruit 70 patients who wore ortho-K for the first time in our department of optometry, including 140 eyes, 36 females and 34 males, aged between 8 to 14 years old, for an average of 12.45 ± 0.36. All the patients were high compound astigmatism with astigmatism ≤-1.75D,

and the best corrected visual acuity were 1.0 or above. We divided them into three groups by degree of myopia, mild myopia group (≤-3.00D), moderate myopia group (-3.25D~-6.00D) and high myopia group (≥-6.25D). The follow-up period were 2 years. To compare the difference of astigmatism 1 and 2 years after wearing ortho-K, We recorded the results of optometry of each follow-up visit. If the change of astigmatism<0,5D, we treated it as invariable.

RESULT: The change of astigmatism was 0.35 ± 0.029D after 1 year of wearing ortho-K, and the change was 0.39 ± 0.033D after 2 years, p<0.05. The change of astigmatism was 0.38 ± 0.052D in mild myopia group, The change of astigmatism was 0.39 ± 0.044D in moderate myopia group, The change of astigmatism was 0.49 ± 0.176D in high myopia group, and p>0.05 between groups.

CONCLUSION: Ortho-K had a limited effected in controlling astigmatism, and the effect was greater in the second year than in the first year. However, the change of astigmatism had no relationship with degree of myopia.

PU-110

斜视矫正手术前后眼屈光状态变化的临床研究

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目的：观察涉及不同眼外肌数的斜视矫正术前后术眼屈光状态的短期变化。

方法：选取接受斜视矫正术的患者 41 例 64 眼，按手术涉及的眼外肌数目分三组：一条水平直肌后徙组（I 组，25 眼），一条水平直肌后徙联合其拮抗肌缩短组（II 组，32 眼），一条水平直肌后徙联合其拮抗肌缩短组及斜肌切断组（III 组，7 眼）。观察术前 1d, 术后 1wk,1mo 各项屈光参数，并进行统计学分析。

结果：术后 1wk 患者的等效球镜屈光度较术前有所增高（P ＜ 0.05），球镜、柱镜、角膜曲率，散光轴位及角膜中央 3mm 半径光学区内曲率较术前均无显著差异（P ＞ 0.05）。而在术后 1mo, 所有观测值均较术前无统计学差异。比较斜视矫正术所涉不同眼外肌数目对术眼屈光参数的影响，术后 1wk，I 组患者各项屈光参数值均无统计学差异，II 组患者散光值变化有统计学差异（P ＜ 0.05），III 组患者柱镜屈光度、等效球镜屈光度及散光值较术前均具有统计学差异（P ＜ 0.05）。而术后 1mo，三组患者各项屈光参数较术前均无统计学差异。

结论：斜视矫正术后 1wk 可引起术眼屈光状态变化，术后 1mo 恢复至术前屈光状态；实施斜视矫正术的眼外肌数目不同，对屈光状态的影响亦不同。

A clinical research about the change of refractive error before and after strabismus surgery

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OBJECTIVE: To observer the change of refractive error before and after strabismus surgery involving different extraocular muscles.

METHOD: We recruited 41 patients who received strabismus surgery on 64 eyes in our hospital. They were divided into 3 groups by extraocular muscles involved. 25 eyes in Group 1 which received single horizontal rectus recession, 32 eyes in Group 2 which received single horizontal rectus recession and antagonist muscle resection, and 7 eyes in Group 3 which received single horizontal rectus recession and antagonist muscle resection combined with oblique muscle tenectomy. We recorded and analyzed the refractive error one day before sugery,1 week and 1 month after operation.

RESULT: The spherical equivalent were increased slightly 1 week after operation than before($p<0.05$). the changes on diopter of spherical and cylinder, the horizontal and vertical corneal curvature, axis of astigmatism, corneal curvature of central 3mm on corneal were no significant difference compared with pre-operation ($p>0.05$).All the parameters of 1 month post-operation were no significant difference compared with pre-operation ($p>0.05$). In group 1, All the parameters of 1 week post-operation were no significant difference compared with pre-operation ($p>0.05$).The change of astigmatism was significant difference compared with pre-operation ($p<0.05$) in group 2. When it comes to group 3, the change of cylinder ,spherical equivalent and astigmatism was significant difference compared with pre-operation ($p<0.05$).However, All the parameters of 1 month post-operation were no significant difference compared with pre-operation ($p>0.05$).

CONCLUSION: Refractive error changed slightly 1 week after strabismus surgery. However, it recovered 1 month after surgery. The influence was different by extraocular muscles involved.

PU-111

乒乓球运动疗法联合调节训练控制儿童近视疗效观察

张隽

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目的：探讨乒乓球运动疗法联合调节训练能否有效控制 6~8 岁儿童低度近视屈光度及眼轴的增长。

方法：将 2015 年 7 月至 2016 年 7 月间在本科室确诊为低度近视的 6~8 岁儿童 56 例（这类患儿基于各方面原因暂时无法配戴夜间角膜塑形镜）共 112 只眼，双眼视功能检查 PRA 值及调节灵敏度较低，随机分为实验组和对照组，每组各 56 只眼，实验组儿童每周至少进行 3 次，每次 1~2 小时的乒乓球训，并进行一次十五分钟调节功能训练；对照组为未进行任何训练的戴镜儿童，比较两组患者治疗一年后的近视屈光度及眼轴增长情况。

结果：一年后等效球镜度的变化：实验组增加（ — 0.53 ± 0.26 ）D，对照组增加（ — 0.96 ± 0.58 ）D，两组对比差异有统计学意义（ $P < 0.05$ ）；一年后眼轴长度的变化：实验组增长（ 0.36 ± 0.15 ）mm，对照组增长（ 0.58 ± 0.22 ）mm，两组对比差异有统计学意义（ $P < 0.05$ ），实验组优于对照组。

结论：乒乓球运动疗法联合调节功能训练能有效控制低度近视度数及眼轴增长，疗效安全可靠。儿童患者易于接受，有效降低治疗成本，有着良好的社会效益。

The effectiveness of Table Tennis Motortherapy & Adjusting Training in Children with myopia

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OBJECTIVE: To investigate the effectiveness of Table Tennis Motortherapy & Adjusting Training in treating children with low grade myopic diopter and axis oculi extension in 6 to 8 years old.

METHOD: Fifty-six children in 6 to 8 years old were diagnosed with low grade myopic in my department from July 2015 to July 2016. Those children are unable to wear the Night Orthokeratology for some reason. As a result, there are 112 eyeballs with low PRA value and adjusting sensitivity, and those children are randomly divided into experimental and control group, and 28 children each group. Children in experimental group are assigned to play Table Tennis 1~2 hours per session, three times a week, besides 15 minutes adjusting training is assigned for one year. Children in control group are assigned to wear spectacles without table tennis and adjusting training for one year. The one-year intervention is used to evaluate the myopic diopter and axis oculi extension.

RESULTS: One year later the change in Spherical equivalent: In experimental group (— 0.53 ± 0.26)D is increased, while in control group (— 0.96 ± 0.58)D is increased, there were significant difference in both two groups ($P < 0.05$).

One year later the change in axis oculi extension: In experimental group (0.36 ± 0.15) mm is increased, while in control group (0.58 ± 0.22) mm is increased, there were significant difference in both two groups ($P < 0.05$), experimental group is better than control group.

CONCLUSION: The Table Tennis Motortherapy & Adjusting Training is an effective therapy option in children's low grade myopic diopter and axis oculi extension. The Table Tennis Motortherapy & Adjusting Training is easily accepted by children and the treatment cost is reduced greatly besides there is a good social efficiency.

PU-112

家族性先天性眼球震颤患者眼底病变的临床观察

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研究家族性先天性眼球震颤患者眼底病变的临床特点。

对我院就诊的家族性先天性眼球震颤 3 个家系共 20 例患者（40 只眼）进行眼位、屈光状态、眼前节和眼底检查（包括眼底彩照、OCT、ERG 和 VEP）。

家系 A 共 8 名患者，均为水平型眼球震颤，其中斜视患者 6 例，其中 2 例伴代偿头位；2 例核性白内障,2 例后极性白内障，1 例早产儿视网膜病变,2 例高度屈光不正。家系 B 共 6 名患者，均为水平型眼球震颤,2 例眼型白化病患者,2 例伴黄斑发育不良，2 例高度屈光不正,1 例全色盲,1 例核性白内障。家系 C 共 6 名患者,5 名水平型眼球震颤,1 例旋转型眼球震颤，Leber's 黑朦 2 例，2 例后极性白内障，1 例虹膜萎缩，2 例斜视。

家族性先天性眼球震颤患者要进行全面的眼部检查，尽可能找出病因，尽量提高患者视功能。

Clinical observation of familial congenital nystagmus and fundus diseases

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OBJECTIVE: To investigate the clinical features of fundus diseases of familial congenital nystagmus.

METHOD: 40 eyes of 20 nystagmus patients from 3 congenital nystagmus families were enrolled in our study. The eye position, refractive error, anterior segment and fundus, including fundus photograph, OCT, ERG and VEP were examined.

RESULT: There are 8 patients in Family A, all of which were horizontal nystagmus. 6 cases of strabismus , 2 of which combined with compensatory head posture, 2 cases of nuclear cataract, 2 cases of posterior polar cataract, 1 case of retinopathy of prematurity, 2 cases of high myopia. There are 6 patients in Family B, all of which were horizontal nystagmus. 2 cases of albinism, 2 of which combined with macular hypoplasia, 2 cases of high myopia, 1 case of achromatopsia, 1 case of nuclear cataract. There are 6 patients in Family C, 5 of which were horizontal nystagmus and 1rotatory nystagmus. 2 cases of Leber's amaurosis, 2 cases of posterior polar cataract, 1 case of iris atrophy, 2 cases of strabismus.

CONCLUSION: We have to do detailed examinations on patients suffered from familial congenital nystagmus to understand its causes and to improve their visual functions as well as possible.

PU-113

近视和非近视儿童 retcam 眼底检查的对比观察

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目的：对比近视和非近视儿童眼底检查及患病。

方法：连续选择 2015 年 4 月至 2017 年 4 月期间我院因屈光不正就诊患儿 146 例，292 眼，男 80 例，女 66 例，按屈光不正程度分为两组：近视组（-0.25DS 以及以下）198 眼 非近视组（-0.25DS 以上）194 眼，年龄 10 个月至 7 岁，平均 2.85 ± 0.56 岁，两组年龄无差异，散瞳后应用 Retcam 检查眼底。

结果：近视组（-14.00~-0.25）平均 -3.62DS ± 1.98DS，眼底异常 75 眼，其中家族性渗出性玻璃体视网膜病变 22 眼，早产儿视网膜病变 7 眼，牵牛花综合症 15 眼，视神经发育不良 11 眼，视网膜色素变性 8 眼，脉络膜缺损 4 眼，stickler 综合症 4 眼，周边视网膜变性 4 眼。眼底异常患者中，中高度近视患者比例显著高于低度近视患者。非近视组（0~+16DS）眼底异常 6 眼，其中黄斑皱襞 2 眼，家族性渗出性玻璃体视网膜病变 2 眼，卵黄样黄斑病变 2 眼，近视组眼底病患病率显著高于非近视组，差异有统计学意义。$p<0.01$。

结论：近视儿童尤其是中高度近视儿童，其眼底患病率显著高于非近视者，临床中应重视对近视患儿眼底的详查。

Comparative study of RetCam examination in children with myopia and non- myopia

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OBJECTIVE: To observe the results in children with myopia and non -myopia.

METHODS: from April 2015 to April 2017 in Beijing Children's Hospital during continuous treatment due to treatment of 146 cases of children with ametropia, 292 eyes, male 80 cases, female 66 cases, excluding nystagmus and opacity of refractive media in children, ac-

cording to the degree of refraction for divided into two groups: myopia group (-0.25DS and below) non myopia group (198 eyes more than -0.25DS) in 194 eyes, aged 10 months to 7 years, average 2.85 + 0.56 years, there is no difference between the two groups in age, application of Retcam examination after mydriasis fundus fluorescein angiography, when necessary, imaging examination further confirmed.

RESULTS: the average myopia group (-14.00~-0.25) -3.62DS + 1.98 eyes, abnormal fundus in 75 eyes, including familial exudative retinopathy in 22 eyes, 7 eyes of retinopathy of prematurity, morning glory syndrome in 15 eyes, 11 eyes with optic nerve hypoplasia, retinal pigmentosa in 8 eyes, 4 eyes choroidal coloboma, stickler syndrome 4 eyes of peripheral retinal degeneration in 4 eyes with abnormal fundus in patients with myopia were significantly higher than the proportion of low myopia patients. Non myopia group (0~+16DS) abnormal fundus in 6 eyes, including 2 eyes of macular folds, familial exudative retinopathy in 2 eyes vitreous body, vitelliform macular lesions in 2 eyes, myopia fundus disease prevalence was significantly higher than non myopia group, the difference was statistically significant. P<0.01.

CONCLUSION: children with myopia especially middle-high myopia in children, the prevalence rate was significantly higher than that of non fundus myopia, myopic children should pay attention to the fundus of the clinical investigation.

PU-114

青岛市 4-6 岁儿童中远立体视觉调查结果的分析

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目的：整群随机抽样青岛市 4-6 岁儿童进行中远立体视觉的检测，探讨是否可以用中远立体视图对学龄前儿童进行异常视功能的辅助筛查，以早期发现视功能的异常。

方法：采用Lea numbers、Distance Randont Stereotest图、遮盖去遮盖及交替遮盖的方法分别检查视力、中远立体视及斜视。

结果：1. 中远立体视觉 60 秒弧 583 人（76.51%），100 秒弧 29 人（3.81%），400 秒弧 10 人（1.31%），无立体视觉 140 人（18.37%）。2.4 岁组、5 岁组、6 岁组间的 60 秒弧和非 60 秒弧受检人数频数的差异在统计学上有意义；随着年龄的增加，能辨认出 60 秒弧的人数在增加；经过两两比较，4 岁组、5 岁组和 6 岁组间的差异在统计学上有显著性。3. 正常组和斜视组、屈光异常组间的差异在统计学上有显著性，而斜视组和屈光异常组间的差异在统计学上无显著性。

结论：对 4-6 岁儿童，尽管 60 秒弧的辨认比例都达到 65% 以上，但是立体视觉随着年龄的增长有逐步发育的倾向；对指认视力困难或对学龄前儿童，中远立体视图可以做为筛查视觉功能异常的一种辅助手段。

The analysis of the middle-far stereoacity among the children aged from 4 years old to 6 years old in Qingdao

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AIM: To examine the middle-far stereoacity、strabismus and visual acuity among the children aged from 4 years old to 6 years old in Qingdao by a random sample and to analysis the children's stereoacuity and to find if the stereotest could be used to screen the anomality of the visual function.

METHODS: The visual acuity was tested by the Lea numbers（GOOD-LITE）and the stereoacuity was examined by the Distance Randont Stereotest Picture.The strabismus was excluded by the cover-uncover test.

RESULTS: The children who had 60 arc stereoacity were 583（76.51%）, 100 arc were 29（3.81%）,400 arc were 10（1.31%）and nil were 140（18.37%）.The frequency of the 60 arc and the non-60 arc among the 4-year-old team,5-year old team and 6-year -old team had the significant difference.There was distinguished difference between the 4-year-old team and the 6-year-old team ,the 5-year-old team and the 6-year-old team,however,there was no significant difference between the 4-year-old team and the 5-year-old team. Similar,compared with the strabismus team or the ametropia team,the normal team had significant difference .The difference between the strabismus team and the ametropia team was no significant.

CONCLUSIONS: The stereoacuity was developed by the ages.To the children who couldn't understand the visual chart or to the preschool children ,it may be a assistant way to screen the anomality of the visual function using the Distance Randont Stereotest Picture.

PU-115

定期应急演练对提高眼科医护人员急救能力的探讨

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目的：探讨定期应急演练对眼科医护人员急救能力的影响。

方法：筛选眼科可能发生的应急情况，如：火灾、药物过敏、化学烧伤、伤医事件等，制定详细的应急预案，组织全科进行理论学习和分组实操练习。每月月底开展一次应急演练，内容和项目按计划表实施，对比演练前后医护人员的应急能力提升情况。并对每次演练的情况进行总结、分析、考评。

结果：医护人员能够自觉、有效地掌握各类应急预案，提高了风险防范意识和应急事件的处理能力。

结论：眼科收治的患者相对平稳，发生应急事件的几率小，多数员工几乎未遇到过应急事件，故医护人员的应急实操能力较低。定期进行应急演练可以有效提高眼科医护人员的急救能力，实施应急预案演练能够有效地加强医护人员的风险管理能力和处理能力，从而更好地确保患者的安全。该方法值得在临床推广。

PU-116

先天性视网膜劈裂症患者屈光状态的临床观察

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目的：探究先天性视网膜劈裂（congenital hereditary retinoschisis ，CHRS）患者屈光状态的临床变化，以及观察其黄斑中心凹劈裂厚度与屈光状态的相关性。

方法：对 32 例先天性视网膜劈裂患者行裸眼视力、戴镜矫正视力、眼底彩色照相、光学相干断层成像（optical coherence tomography，OCT）、眼轴、角膜曲率、扩瞳检影验光、B 超等相关检查，并运用 spss20.0 统计软件分析该 32 例患者屈光状态变化的情况，并分析 OCT 测量的黄斑中心凹劈裂厚度与屈光状态的相关性。

结果：裸眼视力与戴镜矫正视力之间无显著差异（T=0.351，P>0.05）。CHRS 患者屈光度以中高度远视为主（占 93.75%），该屈光度与眼轴长度及眼轴和黄斑中心凹劈裂厚度的差值有显著负相关性（r=-0.704、-0.748,P<0.01）。激光治疗前后的屈光度及黄斑中心凹劈裂厚度变化无明显差异（T=0.485，P>0.05）。

结论：先天性视网膜劈裂患者常伴高度远视屈光状态多见，并且该远视程度与年龄、眼轴、曲率均无明显相关性，而与眼轴长度及眼轴与黄斑中心凹厚度的差值有负相关性。

Clinical observation of refractive status in patients with congenital retinal detachment

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OBJECTIVE: To explore clinical refraction changes of patients with congenital macular retinoschisis (congenital hereditary retinoschisis, CHRS), and to observe the correlation of macular retinoschesis split thickness with refraction.

METHODS: A retrospective case study. These 32 cases of congenital macular retinoschisis in our hospital were inspected with uncorrected visual acuity, wearing glasses corrected visual acuity, fundus photography, optical coherence tomography (optical coherence tomography, OCT), axial length, corneal curvature, mydriasis retinoscopy optometry, ultrasound examination and other related .And use the spss20.0 statistical software to analyse the 32 patients following changes of refraction(including refractive diopter, axial length, corneal curvature), and the analysis of OCT measurement of foveal splitting thickness and diopter correlation.

RESULTS: 1.CHRS patients with an average age of 7.89 + 2.824 years.2.CHRS uncorrected visual acuity in patients with an average of 0.23 + 0.162 log MAR, wearing glasses correction vision with an average of 0.23 + 0.116 log MAR, there was no significant difference between uncorrected and corrected visual acuity glasses (T=0.351, P>0.05). Corneal curvature in 41~43.5D. The average corneal curvature was 42.31 + 1.18D.3.CHRS patients mainly is in high hyperopia diopter (93.75%), the diopter and axial length and the deviation of axial and foveal splitting thickness had a significant negative correlation (r=-0.704, -0.748, P<0.01), but foveal splitting thickness had no correlation (r=-0.063 P>0.01).4.The diopter and foveal split thickness had no significant difference before and after the laser treatment (T=0.485, P>0.05).

CONCLUSION: Congenital hereditary retinoschisis are common in patients with high hyperopia state, and the degree of hyperopia had no significant correlation with age, axial length, curvature, but with the axial length and axial and foveal thickness have negative correlation. The fundus examination is an important examination to patients with high myopia in clinical,and the OCT examination is the best method of the identification of congenital retinal and refractive amblyopia, is also an important examination to observe the progress of the congenital hereditary retinoschisis, but the fundus pathological mechanism of congenital hereditary retinoschisis needs further study.

PU-117

电子产品的使用时间及近距离用眼等环境因素对学龄初期儿童近视分布的分析

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目的：分析我院 586 例学龄初期儿童电子产品的使用时间、写作业时间、是否弹钢琴及户外活动时间与近视的分布规律。

方法：回顾性分析门诊就诊的 6~12 岁学龄初期儿童 586 例，均建立个性化档案，统计分析各年龄组的近视情况、不同年龄组电子产品累计使用时间、写作业时间、是否弹钢琴及户外活动时间其与近视发生的分布规律。

结果：1. 随着年龄的增长学龄初期儿童裸眼视力正常者的分布逐渐减少；2. 学龄初期儿童以轻度近视为主，轻度近视、中度近视的学龄初期儿童在 9 岁、10 岁组近视的分布占比例高 , 学龄初期儿童电子产品的累计用眼量统计；3. 玩电子产品的占 76.79%，不玩电子产品的占 23.21%；4. 写作业时间分布为学龄初期儿童写作业≦ 1h 的占 37.20%，写作业 >1h 为 62.80%. 9 岁、10 累计写作业时间高于其他年龄组；5. 弹钢琴分布情况为学龄初期儿童，不弹钢琴的为 89.08%，弹钢琴的为 10.92%；6. 学龄初期儿童户外活动时间 ≦ 1h 的占 91.81%，户外活动时间 >1h 为 8.91%。

结论：近视的发生年龄提前，近视程度加大 , 提倡医务工作者对每个就诊孩子均建立视觉健康档案。

Analysis on the distribution of myopia in children at the beginning of school age by the use of electronic products and the use of eye and other environmental factors

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Statistical analysis of the age group of myopia, the cumulative use of electronic age in different age groups, writing time, whether playing piano and outdoor activities and the distribution of myopia occurred in the law.Myopia proportion of mild myopia was significantly higher than that of moderate and high myopia, There was a significant difference in myopia distribution between the 9th and 10th year old children with mild myopia and moderate myopia. Therefore, Advocate medical workers to establish a visual health record for each child.

PU-118

屈光参差与利手关系的调查分析

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目的：探讨屈光参差患者的用眼特点，分析其发病与先天倾向的利手是否有关。

方法：对我院门诊就诊的屈光参差患者进行检查，包括屈光度、矫正视力、远距与近距主眼及其他合并症等，再确定其利手的情况，并与单纯屈光不正患者相对比，对以上资料进行分析。

结果：屈光参差患者视近以偏近视或近视度数较高的眼别为主，视远以偏远视或近视度数较低的眼别为主，屈光参差与利手之间无相关性。

结论：屈光参差患者的主眼确定与屈光度特点有关，与利手倾向无关。

The study of correlation analysis of handedness in anisometropic eyes.

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OBJECTIVE: To analyze the relations between anisometropia and handedness, so that to find the rules of occurrence of anisometropia.

METHODS: Two groups of anisometropic patients were examed with their refractive diopter, dominate eye of close distance and far distance, and handedness, which were analyzed with correlation analysis.

RESULTS: Some relative factors were found in anisometropic eyes, including refractive diopter and vision. The significant influence of handedness in anisometropic patients didn't be found.

CONCLUSION: The dominate eye of anisometropic patient depends more on their refractive characters than the handedness.

PU-119

使用眼震电图连续性分析婴儿眼球震颤综合征术后患儿中间带的变化

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目的：探讨使用眼震电图客观连续性分析婴儿眼球震颤综合征术后患儿中间带的变化

方法：回顾性系列病例研究。对 8 例诊断为婴儿眼球震颤综合征的行中间带移位术患儿的临床资料进行分析。术后随访时间中位数为 14.5 个月，对患儿术前及术后进行双眼视力，代偿头位，眼震电图等参数进行测量。使用 SPSS13.0 统计软件对各项参数进行统计分析。

结果：术前患者代偿头位双眼视力为 0.52 ± 0.19，头正位双眼视力为 0.40 ± 0.19。术后代偿头位双眼视力为 0.58 ± 0.21，头正位双眼视力为 0.44 ± 0.21。术前术后代偿头位及头正位双眼视力无统计学差异。术前代偿头位为 25 ± 5.35 度，术后代偿头位为 14.83 ± 10.49 度。术前术后代偿头位角度无统计学差异。眼震电图观察患者中间带回退时间为 7.25 ± 2.05 月，视近抑制患者中间带回退时间为 6.80 ± 2.49 月，视近无抑制患者中间带回退时间为 8 ± 1.0 月，两类型患者之间有统计学差异。

结论：患者进行中间带移位术后，术后早期手术矫正效果较好，随着时间的延长会出现中间带回退。视近眼球震颤抑制患者中间带回退时间长于视近无眼球震颤抑制患者。

using electronystagmography to continuous assessment the change of null zone in infantile nystagmus syndrome after surgery

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OBJECTIVE: using electronystagmography to continuous assessment the change of null zone in infantile nystagmus syndrome after surgery

METHODS: Retrospective and comparative case series.Eight patients diagnosed as infantile nystagmus syndrome were enrolled in this study.The follow-up was 14.5months. pre- and postoperative binocular visual acuity,abnormal head position, parameter of nystagmus were analyzed after surgery.SPSS 13.0 was used to analyze the difference of them.

RESULTS: The mean preoperative binocular acuity with AHP was 0.52 ± 0.19.The mean preoperative binocular acuity with head straight was 0.41 ± 0.19. The mean postoperative binocular acuity with AHP was 0.58 ± 0.21 ,and binocular acuity with head straight was 0.44 ± 0.21.There was no statistically significant difference between both preoperative and postoperative binocular acuity with AHP and head straight.The mean preoperative AHP was 25 ± 5.35degree, and the mean postoperative AHP was 14.83 ± 10.49 degree.There was no statistical difference between pre- and postoperative AHP.The mean time of changing in null zone in electronystagmography was 7.25 ± 2.05 months.The mean period of Patients with congvergence damping was 6.80 ± 2.490months, and non-convergence damping patients was 8 ± 1.0 months.There was statistical difference between this two type of patients.

CONCLUSION: The effect of null zone shift surgery is excellent in early time after surgery, but can reduced in long times.The null zone will withdraw with time passes. Patients with convergence damping have longer time to preserve null zone in ideal degree of gaze then those without convergence damping.

PU-120

一例“大眼宝宝”的诊断之路

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病例：女，2015 年 2 月出生，足月，顺产，出生体重 3650g，曾经当地医院诊断：“青光眼”上台准备行：“抗青光眼手术”，后经全麻下检查否认“青光眼”诊断。诊断：“先天性大角膜”，眼部检查：眼压：右眼 19mmHg，左眼 20mmHg，角膜直径：14mm，角膜透明，瞳孔虹膜少许残膜，视乳头 C/D=0.2-0.3。retcam 房角检查显示：房角宽角，可见中胚叶组织。眼轴：右眼 25.66mm 左眼 26.29mm，角膜厚度：右眼：515um 左眼：525um。阿托品散瞳验光：右眼：-7.00DS 左眼：-7.500DS，玻璃体浑浊，视网膜平复，荧光眼底血管造影：视网膜周边可见无血管区，无渗漏。全身情况：TOTCH:HSV IgM(+)IgG(+), 风疹病毒 IgM(+)IgG(+),腭裂，小下颌，扁平面。临床诊断：Stickler综合症。基因检查：COLII AI 基因上的杂合突变，Stickler综合症 II 型。

A case of " big eye" diagnosis

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Case: female, born in February 2015, full-term birth, birth weight, 3650g, once the local hospital diagnosis: "glaucoma" preparing for the stage: "anti glaucoma surgery" , after examination under general anesthesia denied glaucoma diagnosis. Diagnosis: congenital cornea, eye examination: intraocular pressure: right eye 19mmHg, left eye 20mmHg, corneal diameter: 14mm, corneal transparency, pupil iris a little residual membrane, C/D=0.2-0.3. RetCam examination showed that the angle angle of wide angle, visible mesodermal tissue. Eye axis: right eye 25.66mm left eye 26.29mm, corneal thickness: right eye: 515um left eye: 525um. Atropine mydriasis optometry: right eye: -7.00DS left: -7.500DS, vitreous body, retina reattached, fluorescein angiography: no visible peripheral retinal vascular area, no leakage. General condition: TOTCH:HSV IgM (+) IgG (+), rubella virus IgM (+) IgG (+), cleft palate, small jaw, flat surface. Clinical diagnosis: Stickler syndrome. Genetic testing: heterozygous mutations in the COLII AI gene, Stickler syndrome type II.

PU-121

儿童频繁眨眼患者眼表综合分析仪检查结果分析

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目的：用眼表综合分析仪检查频繁眨眼的儿童分析其眼表情况

方法：对因频繁眨眼来我院就诊的 29 例 58 眼儿童进行眼表综合分析仪检查

结果：泪膜破裂时间 0 级（正常）者 8 眼 占 13.7%，1 级（临界）21 眼占 36.2%，2 级（干眼）29 眼占 50%；泪河高度≥0.20mm 者 8 眼占 13.8%，＜ 0.20mm 者 50 眼占 86.2%；脂质层分析 正常者 43 眼占 74.1%，异常者 15 眼占 25.9%；睑板腺照相 正常者 26 眼占 44.8%，缺失＜ 1/3 者 27 眼占 46.6%，1/3 ＜缺失＜ 2/3 者 5 眼占 8.6%；眼红分析均为正常，眼表荧光染色 0 级者 32 眼占 55.2%，1 级者 14 眼 24.1%，2 级者 10 眼占 20.7% 。仅 5 眼 (10.6%) 眼表检查正常。

结论：89.4% 的频繁眨眼的儿童患者眼表检查异常，临床诊治时应引起重视。

Analyse Excessive Blinking in childhood with Oculus Keraograph

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PURPOSE: To analyse excessive blinking in childhood with Oculus Keraograph

METHOD: Using Oculus Keraograph to exam 29 children (58 eyes) with excessive blinking in Shanxi Eye Hospital

RESULT: NIKBUT: Level 0(normal) in 8 eyes (13.7%),Level 1(critical) in 21eyes (36.2%),Level 2(dry eye) in 29eyes (50%);tear meniscus height(TMH)≥0.20mm in 8eyes 13.8%， ＜ 0.20mm in 50eyes(86.2%);Lipid layer: normal in 43eyes (74.1%)，Abnormal in 15eyes(25.9%);Meibo–Scan: normal in 26eyes (44.8%),missing ＜ 1/3 in 27eyes (46.6%),1/3 ＜ missing ＜ 2/3 in 5eys (8.6%);ReRed eye-scan normal in 58eyes (100%);ocular surface fluorescein staining :Level 0 in 32eyes (55.2%),Level 1 in 14eyes (24.1%)，Level 2 in 10eyes (20.7%); ocular surface examination only in 5 eyes(10.6%) was normal.

CONCLUSION: 89.4% of frequent blink in children with ocular surface examination was abnormal, we should pay attention to it in the clinical diagnosis and treatment.

PU-122

应用 plusoptiX 摄影验光仪筛查儿童瞳孔大小不等

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目的：调查中国东部 3-4 岁学龄前儿童的瞳孔大小不等的患病率，以及瞳孔直径的分布情况。

方法：在江苏省南京市雨花台区对 3-4 岁学龄前儿童进行综合性眼科筛查，使用 plusoptiX A12C 摄影验光仪进行瞳孔相关筛查。通过对光反射检查、交互对光反应检查、可卡因试验等检查确诊疑似瞳孔大小不等的儿童。

结果：共计 1818 名儿童接受了 plusoptiX 检测，瞳孔直径测量成功率 99.3%。双眼瞳孔直径高度相关 (5.9 ± 0.7 mm OU, P < 0.0001; r = 0.93)，性别差异存在统计学意义 (男童 6.0 mm; 女童 5.8 mm; P < 0.0001)，年龄差异无统计学意义 (P = 0.22)。7.8%(141 人) 的儿童存在 0.5-0.9mm 的瞳孔大小不等，0.4%(7 人) 的儿童存在 1.0mm 或以上的瞳孔大小不等，没有儿童被诊断为病理性瞳孔大小不等。

结论：plusoptiX 摄影验光仪是儿童瞳孔大小不等筛查及瞳孔直径测量的有效工具。中国东部 3-4 岁儿童的平均瞳孔直径为

5.9mm，男童大于女童。8.2% 的儿童存在 0.5mm 或以上的瞳孔大小不等。

Pupillary measurements and anisocoria in Chinese preschool children aged 3 to 4 years using the plusoptiX photoscreener

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PURPOSE: To evaluate the distribution of the pupil diameter and distance and the incidence of anisocoria in a screening setting for Chinese preschool children aged 3 to 4 years.

METHODS: The Yuhuatai Pediatric Eye Disease Study, a cross-sectional, population-based cohort study, was conducted in children aged 3 to 4 years in Yuhuatai District, Nanjing, China in 2015. PlusoptiX photoscreening was conducted among 1,818 subjects without cycloplegia. Additional assessments would be conducted, including light reaction test, reevaluation for anisocoria (in dim and bright light), swinging-flashlight test, and cocaine test, if necessary.

RESULTS: Pupillary measurements were conducted successfully in nearly all children (99.3% for the pupil diameter; 98.4% for the interpupillary distance). The pupil diameters of the two eyes were highly correlated (5.9 ± 0.7 mm OU, $P < 0.0001$; $r = 0.93$). The mean interpupillary distance was 50.1 ± 3.1 mm. The pupil diameters and interpupillary distance were correlated with gender (6.0 and 50.6 mm of boys; 5.8 and 49.5 mm of girls; all $P < 0.0001$) but not age ($P = 0.22$; $P = 0.68$). General anisocoria was found from 0.5 to 0.9 mm in 7.8% of the children and from 1.0 to 1.2 mm in 0.4%. No child was diagnosed with pathological anisocoria, craniofacial trauma or congenital malformation syndrome.

CONCLUSIONS: PlusoptiX is a useful tool for pupillary measurements and anisocoria detection in screening setting. For Chinese preschool children aged 3 to 4 years, the mean pupil diameter and distance were 5.9 and 50.1 mm, respectively, with gender-related difference; 8.2% of children are with anisocoria at least 0.5 mm. The referral criteria of anisocoria (≥ 1.0 mm) should be applied carefully.

PU-123

睑缘炎引起角膜溃疡治疗认识

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目的：探讨睑缘炎引起的角膜溃疡治疗方法及妥布霉素地塞米松眼膏治疗的安全性

方法：收集 2013 年 12 月至 2016 年 9 月收集的睑缘炎引起角膜溃疡病人共 7 例。给予眼睑的热敷、按摩后睑缘妥布霉素地塞米松眼膏治疗，局部抗生素眼液、人工泪液及口服抗生素治疗。

结果：7 例患者中，6 例患者经过正规的睑缘炎治疗后溃疡愈合，睑缘炎好转，1 例患者因角膜溃疡重，面积大，最终通过角膜瓣遮盖后溃疡愈合。

结论：睑缘炎引起的角膜溃疡治疗按照睑缘炎治疗方法有效，妥布霉素地塞米松眼膏在伴有溃疡灶时是安全有效的。对于较重的角膜溃疡，可采用结膜瓣遮盖等手术方法治疗。

understanding of corneal ulcer caused by Blepharitis

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OBJECTIVE: To investigate the treatment of corneal ulcer caused by blepharitis and safety of Tobramycin and Dexamethasone Ophthalmic Ointment in these cases.

METHODS: A total of 7 patients of corneal ulcer caused by blepharitis were collected from December 2013 to September 2016. They all given the compress 、massage and Tobramycin and Dexamethasone Ophthalmic Ointmentof of the eyelid. They also given the topical antibiotic eye drops and artificial tear and oral antibiotics.

RESULTS: after regular treatment of blepharitis corneal ulcer healing in 6 patients, blepharitis improved, 1 patients with serious corneal ulcer, finally healing after conjunctival flap covering.

CONCLUSION: The treatment of blepharitis is effective in the patients of orneal ulcer caused by blepharitis. Tobramycin and Dexamethasone Ophthalmic Ointment is safe and effective . For more severe corneal ulcer, conjunctival flap microsurgery can be useful.

PU-124

学龄高度近视眼儿童屈光力与眼轴等生物学因素的研究

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目的：探讨学龄高度近视眼儿童屈光力与眼部生物学参数的相关性。

方法：将 105 例 210 眼 6~15 岁高度近视的学龄儿童按照屈光力不同分成两组：A 组（-6.00D~-9.00D）75 例 150 眼和 B 组（-9.00D~-12.00D）30 例 60 眼，对其进行屈光力、眼轴长度、前房深度、前房角、中央角膜厚度、眼内压等参数的测量和分析。

结果：学龄高度近视儿童等效球镜值与眼轴长度、角膜最大屈光力、年龄之间呈负相关（P<0.05），与前房深度及前房角呈正相关（P<0.05）。眼轴长度与 IOPg、IOPcc 和年龄呈正相关关系 (P<0.01)，而与角膜屈光力 K1、K2 呈显著负相关关系（P<0.001）。眼内压 IOPcc 与 K1、K2 呈显著负相关关系（P<0.001），IOPg 与 CCT 呈显著正相关关系（P<0.001），而与 K1、K2 呈负相关关系（P<0.05）。影响高度近视眼屈光力的主要因素为 SE，AL，k2 及 ACD，而影响眼轴长度的主要因素为 K1，K2，IOPg 及年龄。

结论：眼轴延长是高度近视眼发展的重要影响因素，眼轴越长近视越严重，而眼内压可以通过影响眼轴长度而影响高度近视眼的屈光力，加快高度近视的发展。

Analysis of the refractive power and axial length and ocular biometric parameters of high myopia in children of school

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OBJECTIVE: To study the factors affecting refractive power and axial length of high myopia in children of school age.

METHODS: 105 cases(210eyes) were divided into group A（-6.00D~-9.00D, 150 eyes）and group B（-9.00D~-12.00D, 60 eyes）. We measured the refractive power, axial length(AL) , anterior chamber depth(ACD), anterior chamber angle(ACA), central corneal thickness(CCT), intraocular pressure(IOP) and so on. We analyzed the linear correlation among these factors.

RESULTS: The spherical equivalent(SE) of high myopia is negatively relative to AL, minimum of corneal refractive power (K1), Maximum of corneal refractive power (K2) and age（P<0.05）, while the SE is positively relative to ACD and ACA（P<0.05）. AL appeared positive correlation to IOP and age（P<0.01）, while AL appeared negative relation to K1 and K2 (P<0.001). IOPcc is negatively relative to corneal refractive power（P<0.001）. IOPg is positively relative to CCT（P<0.001）, while IOPg is positively relative to K1 and K2(P<0.05）. ACD appeared positive correlation to ACA and IOPg (P<0.05). ACA is positively relative to IOPg and IOPcc（P<0.05）. The significant factors affecting refractive power of high myopia were SE, AL, K2 and ACD . The significant factors affecting axial length of high myopia were K1, K2, IOPg and age.

CONCLUTION: The growth of AL is the most important factor for development of high myopia. The more long the AL, the more severe the myopia. IOP affect refractive power of high myopia by affecting AL and speed up the development of high myopia.

PU-125

角膜塑形术控制 73 例小学生近视发展疗效的观察

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目的：观察角膜塑形术控制小学生近视发展的疗效以及对其角膜曲率、角膜内皮计数的影响。

方法：对 73 例小学生近视眼患者根据等效球镜度分为轻度近视组和中度近视组，每晚佩戴 8-10 小时。戴角膜塑形镜后进行定期复查，观察裸眼视力、屈光度数、眼压、角膜曲率、角膜内皮计数的变化。

结果：1、佩戴 1 年后屈光度增幅：轻度近视者，佩戴前等效球镜度平均为（1.82 ± 0.43）D，中度近视者，佩戴前等效球镜度平均为（3.93 ± 1.21）D，佩戴满 1 年，停戴 3 周，门诊快速散瞳验光，等效球镜度分别为（2.01 ± 0.52）D 和（4.29 ± 0.71）D，增幅分别为（0.19 ± 0.09）D 和（0.36 ± 0.19）D，与戴镜前比较，差异无统计学意义（p>0.05）。2、角膜曲率比较：佩戴后平均角膜曲率较佩戴前扁平，两者差异有统计学意义（p < 0.05），但停戴 3 周后两者差异无统计学意义（p > 0.05）。3、角膜内皮计数比较：佩戴后角膜内皮计数较佩戴前增加，但两者差异无统计学意义（p > 0.05）。4、眼压：停戴 3 周后两者差异无统计学意义（p > 0.05）。

结论：角膜塑形术可安全有效遏制小学生近视度数的快速发展。

The effect of orthokeratalogy correcting the myopia in 73 cases of primary school pupils

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AIM: To study the effect of orthokeratalogy on controling the development of myopia in primary school pupils.

METHODS: 73 primary school pupils (140 eyes in all)with myopia were included in this study.The average age was (11.03 ± 1.2) years.All patients were divided into two groups according to refraction and corneal curvature, low myopia group and moderate myopia group.All patients were fitted with overnight orthokeratalogy for 8 ~10 hours at night. The corrected visual acuity, refraction,intraocular pressure,corneal curvature and cornea endothelium counter were measured afrer wearing orthokeratalogy lenses.All results were analysed by SPSS19.0.

RESULTS: 1.spherical equivalent :In low myopia group, the average of spherical equivalent before wearing was(1.82 ± 0.43) D,and(2.01 ± 0.52)D after one year. There was no statistically significant difference between the two(p>0.05).In moderate myopia group, the average of spherical equivalent before wearing was(3.93 ± 1.21)D,and(4.29 ± 0.71)D after one year.There was no statistically significant difference between the two(p>0.05). 2.Corneal curvature :it was flatter when wearing and there was statistically significant difference(p < 0.05),but there was not statistically significant difference after without wearing for 3 weeks(p>0.05). 3. Cornea endothelium counter:it was increased when wearing and there was not statistically significant difference(p>0.05).4.Intraocular pressure: there was not statistically significant difference between before and after wearing(p>0.05).

CONCLUSIONS: Orthokeratalogy can correct and moderate myopia in primary school pupils effectively and safely.

PU-126

中国东部地区 36-48 月龄学龄前儿童视力损伤的患病率及原因分析

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目的：调查中国东部地区学龄前儿童视力损伤患病率及原因。

方法：在南京市雨花台区共有 2300 人纳入调查，其中对 1810(响应率 78.70%) 名 36-48 月龄的儿童进行了综合性眼科检查，包括：视力、眼位、屈光度、眼前节检查等。视力损伤定义为：任意一只眼日常视力 < 0.40 logMAR (Snellen 20/50)。

结果：在 1695 名有双眼日常视力结果的儿童中，视力损伤患病率为 6.08% (95%CI, 4.94%-7.22%)，单眼视力损伤患病率 3.66% (95% CI, 2.77%-4.55%)，双眼视力损伤患病率 2.42% (95%CI, 1.69%-3.15%)，较 2011 年(NPVP)的 1.51%和 0.76%明显升高，性别差异无统计学意义 (p =0.8114, p= 0.3062)。单眼视力损伤的原因包括：屈光不正（ 67.9% ）、弱视（ 14.3% ）、其他（ 17.9% ）；双眼视力损伤的原因包括：屈光不正 (53.8%)、弱视 (30.8%)、其他 (15.4%)。

结论：中国东部地区学龄前儿童视力损伤的患病率为 6.08%，较 2011 年显著升高，最常见的原因为屈光不正与弱视。

Prevalence and causes of decreased visual acuity among pre-schoolers aged 36-48 months in eastern China

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PURPOSE: To explore the prevalence and causes of decreased visual acuity (VA) in preschool children in eastern China.

METHODS: One cross-sectional population-based paediatric eye survey was carried out in all kindergartens in Yuhuatai District, Nanjing, China. 1810 children aged 36 to 48 months participated in this study. Clinical eye examinations were performed, including visual acuity, ocular alignment, ocular motility, prism cover test, autorefraction, photorefraction, cycloplegic refraction, stereopsis screening. Decreased VA was de?ned as presenting VA of worse than 0.40 logMAR (Snellen 20/50), for both better and worse eyes. Cycloplegic refraction was performed in children with suspicious eye problems.

RESULTS: Among 1695 participants with complete VA data, 62 (3.66%, 95% CI, 2.77%-4.55%) have decreased VA in the worse eye, and 41 (2.42%, 95% CI, 1.69%-3.15%) have decreased VA in the better eye, both with no signi?cant difference between boys and girls (p =0.8114, p= 0.3062). Causes for decreased presenting VA in the worse eye include refractive error (67.9%), amblyopia (14.3%), and "no explanation" (17.9%); and 53.8%, 30.8%, 15.4% in the better eye. Reanalysis of data from NPVP found that the prevalence of decreased VA was 1.51% and 0.76%, respectively in the worse and better eye, with uncorrected refractive erro and amblyopia being the most common causes (66.7%).

CONCLUSION: The prevalence of decreased VA in at least one eye is 6.08% in pre-schoolers aged 36-48 in eastern China, which is significantly higher than NPVP, both with uncorrected refractive erro and amblyopia being the most significant causes

PU-127

儿童间歇性外斜视的手术时机及定量探讨

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目的：探讨儿童期间歇性外斜视的临床特征、手术时机选择、手术量的设计及术后效果的判断。

方法：10 年间共接诊间歇性外斜视手术患儿 128 例，年龄平均 4.5 岁；术前检查分开过强型 73 例 , 辐辏不足型 55 例 ; 测量辐辏近点和远点距离，其中近点 ≤10cm 者 76 例，辐辏远点 ≥3m 者 69 例；辐辏近点和远点持续时间：近点 ≥3min 者 69 例，远点 ≤3min 者 59 例；手术量平均分配在双眼，分开过强型以减弱双眼外直肌为主，辐辏不足型以加强双眼内直肌为主，减弱外直肌为辅；

结果：术后随访平均 4.7 年。术后 1 周正位者 26 例，过矫 10^0 者 102 例；1 月后正位者 108 例，20 例出现 ≤10^0；1 年后随访 67 例中正位 49 例 ,18 例外斜视 ≥15^0；

结论：儿童期间歇性外斜视有如下特征：发病年龄早；间歇频率随年龄增长而增加；在疲劳、哭闹情绪不稳定、发热及视远处时间歇频率增加；辐辏功能中等，辐辏近点持续时间 ≥3min，远点 ≤5min；手术时机应选在辐辏远点持续时间 ≤3min，外斜视出现频率较高时；手术量以每减弱 1 条外直肌 1mm 矫正 5 △，每加强 1 条内直肌 1mm 矫正 5^0 为宜；术后观察眼位过矫 5^0 ~ 10^0 为佳 .

Timing and quantitative study of intermittent exotropia in children

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OBJECTIVE: to investigate the clinical features, timing of surgery, surgical design and postoperative outcome in children with intermittent exotropia.

METHODS: a total of 10 years in admissions of intermittent exotropia surgery in 128 cases, the average age of 4.5 years; preoperative examination from strong convergence insufficiency type in 73 cases, 55 cases of type; near point and far distance measurement convergence point, among which 76 cases were closer than 10cm, 69 cases of convergence point was larger than 3m; near point of convergence the far point and duration: 69 cases in 59 cases was larger than 3min, far less than 3min; the average distribution of surgical volume in the eyes, apart too strong to weaken the bilateral external rectus type, in order to strengthen the convergence insufficiency type of binocular medial rectus, lateral rectus muscle weaken as a supplement; results the patients were followed up for an average of 4.7 years. 26 of 1 cases after a week, 102 cases overcorrection 100; 108 cases after January is one of 20 cases appeared less than 100; after 1 years of follow-up, 67 cases in 49 cases, 18 cases of strabismus is not less than 15^0; conclusion children intermittent exotropia has the following characteristics: early onset age; intermittent the frequency increases along with increase of age; in fatigue, emotional instability, fever and crying as the distant time intermittent frequency increase; convergence function of medium, near point of convergence time is larger than 3min, far less than 5min; timing of operation should be selected in the convergence time is far less than 3min, high frequency exotropia; surgery with every 1 decrease lateral rectus 1mm correction 5 △ , every 1 to strengthen the medial rectus 1mm correction should be 5^0; postoperative eye overcorrection 5^0 ~ 10^0 is preferred.

PU-128

儿童 IgG4 相关性硬脑膜炎伴视神经病变一例

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目的：对我院一例儿童 IgG4 相关性硬脑膜炎伴发视神经病变的病例进行报道。

方法：回顾性分析 2016 年我院一例以视神经水肿为首发症状病例的临床诊疗过程。

结果：患者，男，15 岁，无诱因下听力下降半年，反复黑朦 3 月，右眼视物模糊 1 周余。BCVA：右眼 0.6，左眼 0.8，双眼眼底视神经水肿。双眼视野明显缺损。眼眶 MRI 平扫 + 增强：双侧视神经眶内段变细，视神经鞘增厚强化。头颅 MRI 未见明显异常。纯音电测听示双耳高频感音性耳聋。外周血：IgG 21.9g/L,IgG4 12.7g/L, IgA 6.82g/L。脑脊液：IgA 24.6mg/L, IgG 349mg/L。予大剂量糖皮质激素静滴治疗。后强的松口服减量，加用硫唑嘌呤，现病情稳定。

总结：IgG4 相关性疾病是一种以多器官或组织肿胀硬化为特点的自身免疫系统疾病。受累组织表现为淋巴细胞和 IgG4 阳性的浆细胞浸润以及纤维化，引起压迫阻塞性功能障碍。患者血清 IgG4 常显著升高。诊断该疾病主要靠临床症状结合影像学、实验室检查及病理诊断。IgG4 相关性硬脑膜炎累及视神经极为罕见。本病例因视神经鞘膜硬化增生压迫视神经引起视功能损害，早期大剂量糖皮质激素治疗能缓解病情。

IgG4-related pachymeningitis with optic neuropathy in a child: a case report

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OBJECTIVE: To report a teenager case of IgG4-related pachymeningitis with optic neuropathy resulting in visual loss.

METHODS: The clinical diagnosis and treatment of a patient with optic nerve edema as initial symptom in 2016 were retrospectively analyzed.

RESULTS: A 15-year-old boy was referred to our institution with an 1-week history of blurry vision in the right eye, connected with paroxysmal amaurosis for 3 months and hearing loss for half a year. Best corrected visual acuity(BCVA) was 0.6 in the right eye, while that of left eye was 0.8. Fundus examination showed optic disc edema of both eyes. Obvious defect of visual field were seen in both eyes. Orbital MRI showed attenuated intraorbital segment of optic nerve with thickening and enhancement involving optic nerve sheath in both eyes. No obvious abnormality was found in cranial MRI. Pure tone audiometry showed high frequency sensory deafness in both ears. Blood test showed IgG 21.9g/L ↑ , IgG4 12.7g/L ↑ , IgA 6.82g/L ↑ . Examination of cerebrospinal fluid(CSF) revealed IgA 24.6mg/L ↑ , IgG 349mg/L ↑ . High dose intravenous glucocorticoid daily was used for 17 days, followed by a course of oral prednisone with azathioprine daily tapered slowly over 6 months. The patient is in a stable condition now.

CONCLUSION: IgG4-related disease is a recently recognized systemic autoimmune disease, characterized by mass-forming lesions and fibrosis of the involved organs that consist of lymphocytes and IgG4-positive plasma cells infiltration. Hypertrophy of tissues leads to dysfunction related to compression and occlusion. Serum IgG4 level often elevates significantly. The diagnosis of IgG4-related disease depends on clinical symptoms, imaging examinations, laboratory tests and histopathologic examination. IgG4-related pachymeningitis involving optic nerve could rarely be seen in ophthalmology clinic. In this case, IgG4-related inflammation causes the incrassation of optic nerve sheath, leading to diminution of vision by oppressing optic nerve. Early treatment with high-dose glucocorticoid could relieve the disease effectively.

PU-129

高度近视儿童眼前节参数改变情况

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目的：近年来，我国近视患病率显著增加，且发病年龄向低龄化发展。本研究通过对比高度近视儿童与正常儿童眼前节各参数差异，旨在分析高度近视对儿童眼前节的影响情况

方法：本研究为横断面研究，选取 2015.10 至 2016.7 于我院就诊的 6 ~ 18 岁符合纳入标准的 102 例高度近视患儿，124 例对照组患儿。记录患者基本信息（年龄、性别、身高、体重、父母屈光度等）。随后进行眼压、眼轴、角膜厚度、角膜曲率、前房深度、可见虹膜直径、角膜内皮六角形细胞比例、角膜内皮细胞变异系数、角膜内皮细胞平均面积、角膜内皮细胞平均密度等检查，记录。

结果：研究发现两组患儿眼轴长度、角膜散光、平均角膜曲率、前房深度、角膜内皮细胞平均面积均有统计学差异，高度近视组相应值更高。矫正年龄的影响之后，发现只有身高、角膜散光及眼轴长度与患者等效屈光度相关，得到回归方程：等效屈光度 = 84.92-2.24 × 眼轴长度（mm）-0.87 平均角膜曲率（D）+1.2 前房深度（mm）

结论：本研究发现高度近视儿童前节参数会发生一定程度改变，等效屈光度受眼轴长、角膜曲率以及前房深度的影响

Changes in anterior segment biological parameters among high myopia children in China

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PURPOSE: We analyzed the differences in anterior segment biological parameters between high myopia children and control group children, aimed to find out the effects of various factors on the high myopia.

METHOD: A total of 226 patients aged 6-18 years were recruited from our outpatient department. We gathered general information: age, gender, height, weight, birth height and weight, onset age of myopia/high myopia, parental refractive error. Then, we examined their intraocular pressure, cornea thickness, axial length, anterior cornea curve, anterior chamber depth, corneal diameter, refractive error and corneal endothelial hexagonal cell, the coefficient of variation, the average cell area, the average cell density.

RESULTS:

The results of axial length, corneal astigmatism, mean corneal curvature, anterior chamber depth, corneal endothelia average cell area are significantly different between two groups. After adjusting for age, we found that only height, corneal astigmatism and axial length were related to spherical equivalent ($P<0.05$). We gained an equation of SE=84.92-2.24AL-0.87corneal curvature+1.2ACD.

CONCLUSION: High myopia patients have some differences in anterior segment biological parameters. Refractive error of myopia

was affected by axial length, corneal curvature and anterior chamber depth together.

PU-130

儿童先天性白内障临床特点分析

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目的：分析儿童先天性白内障患儿手术方式、术后并发症和人工晶状体植入情况，以期为儿童先天性白内障的防治提供参考。

方法：回顾分析 2008 年 1 月至 2016 年 1 月，13 岁以下在我院行先天性白内障摘除的儿童。

结果：共 476 例 (740 只眼) 纳入本研究，其中男性 289 例 (453 眼)，女性 187 例 (287 眼)，平均年龄 33.59 ± 37.14 月，其中 0-6 月 166 例，6 月 -1 岁 49 例，1-2 岁 48 例，2-4 岁 83 例，4-6 岁 68 例，6-8 岁 29 例，8-13 岁 33 例。一期植入 IOL 260 眼，年龄 67.13 ± 29.19 月；二期植入 IOL 480 眼，年龄 48.67 ± 25.38 月，2-3 岁行二期 IOL 植入术 212 眼 (44.17%)。术后并发症 326 眼，44.05%，其中虹膜粘连 115 眼 (15.54%)。末次随访时双眼白内障术后 BCVA 优于单眼 BCVA，两组差异有统计学意义。

结论：儿童先天性白内障约三分之一在 6 个月内进行白内障超声乳化摘除术，多数患儿于 2-3 岁行二期 IOL 植入术。双眼先天性白内障患儿视力预后优于单眼先天性白内障患儿。儿童先天性白内障患儿术后并发症较成人多，需谨慎处理。

Clinical characteristics of congenital cataract in children

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OBJECTIVE: To analyze the operative methods, postoperative complications and intraocular lens implantation in children with congenital cataract, in order to give the references for preventing and treating of congenital cataract.

METHODS: From January 2008 to January 2016, children under the age of 13 with congenital cataract were enrolled. Preoperative and posterior slit lamp microscope, fundus, intraocular pressure, the best corrected visual acuity are converted to LogMAR. Visual assessment were evaluated after surgery, according to the evaluation of children give the corresponding amblyopia treatment.

RESULTS: A total of 476 patients (740 eyes) were enrolled in the study, including 289 males (453 eyes) and 187 females (287 eyes), the average age were 33. 59 ± 37 .14 months, of which 0-6 months were 166 cases (282 eyes, 38.18%), 6 months to 1 year old were 49 cases (81 eyes, 10.95%), 1-2 years old were 48 cases (72 eyes，9.73%), 2-4 years old 83 cases(123 eyes, 16.62%), 4-6 years old in 68 cases (93 eyes, 12.57%), 6-8 years old 29 cases (42 eyes, 5.68%), 8-13 years old in 33 cases (47 eyes, 6.35%). 260 eyes were implanted with IOL, aged 67.13 ± 29.19months, 480 eyes IOL implanted in the second surgery, aged 48.67 ± 25.38 months，of which 212 eyes IOL implanted aged from 2 to 3 years old. Refaction diopter after IOL implantation (equivalent spherical): 2-4 years 3.53 ± 0.56D, 4-6 years old 2.36 ± 0.32D, 6-8 years old 1.65 ± 0.52D, 8-13 years old -0.25 ± 0.32D. The Postoperative complications were 326 eyes (44.05%), of which 115 eyes (15.54%) were iridotic adhesions, 97 eyes (13.11%) with posterior cataract on the visual axis, and 54 eyes with glaucoma (7.30%). At the last follow-up, the best corrected visual acuity LogMAR were 0.56 ± 0.41 for monocular cataract surgery and LogMAR 0.42 ± 0.27 after binocular cataract surgery, the difference between the two groups were statistically significant (P = 0.04).

CONCLUSION: One-third of children with congenital cataract treated with surgical treatment under 6 months old，about half of the children underwent IOL implantation at 2-3 years of age. The complications are more complicated than adults. Wear appropriate glasses, implanted intraocular lens and normative amblyopia training take an important role for the development of visual function and Reconstruction.

PU-131

儿童眶蜂窝织炎的临床分析

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目的：总结和分析儿童眶蜂窝织炎的临床特点和治疗。

方法：收集 2012 年 7 月至 2016 年 1 月南京医科大学附属儿童医院收治的 79 例儿童眶蜂窝织炎的临床资料。回顾性分析其年龄、性别、发病时期、病因、临床表现、辅助检查、病程、治疗方案、疗效、并发症及后期随访情况。

结果：79 例患儿，年龄 19 天 -12.1 岁，中位年龄 3.7 岁，男女比例 2.3:1。单眼发病 73 例 (92.4%)，右眼 44 例 (55.7%)，左眼 29 例 (36.7%)。发病高峰期为 11 月 (13.9%) 和 5 月 (11.4%)。诱因多样，其中鼻窦炎史 18 例 (22.8%)；上呼吸道感染 14 例 (17.7%)。经全身及局部抗感染治疗，61 例 (77.9%) 痊愈出院，7 例 (8.9%) 伴眶内脓肿予手术引流，6 例 (7.6%) 并发颅内感染、败血症等转 ICU 治疗。随访病例 73 例，1 例 (1.3%) 复发。

结论：儿童眶蜂窝织炎多集中在幼童，男性多见，单眼多发。鼻窦炎和上呼吸道感染是最常见的诱因。经早期诊断，及时广谱抗生素治疗，必要时手术引流，绝大多数患儿可取得满意疗效。

Clinical analysis of paediatric orbital cellulitis

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OBJECTIVE: Observation clinical characteristics and treatments of orbital cellulitis in children

METHODS: Collected the clinical data of 79 cases of paediatric orbital cellulitis admitted by Children's Hospital of Nanjing Medical University from July 2012 to January 2016. Retrospectively analysis the data of age, sex, period, etiology, clinical manifestation, auxiliary examination, clinical course and treatments, efficacy, complications and late follow-up.

RESULTS: 79 children, aged 19 days to 12.1, the median age of 3.7 years old, male and female ratio is 2.3:1. 73 unilateral cases (92.4%), occurs in the right eye in 44 cases (55.7%), left eye 29 cases (36.7%). Seasonal distribution appeared to peak in November (13.9%) and May (11.4%). Incentive was diversiform, including 18 cases(22.8%) with sinusitis history,14 cases (17.7%)with upper respiratory infection history.By the systemic and local anti-infection treatment, 61 cases (77.9%) were cured,7 cases（8.9%）with orbital abscess underwent surgical drainage, 6 cases（7.6%）complicated by intracranial infection or sepsis were transferred to in the ICU. Follow-up cases 73 cases , 1 case（1.3%）of recurrence.

CONCLUSION: Sinusitis and upper respiratory infection are the most important predisposing factors of paediatric orbital cellulitis. male is more likely to suffer, more common in children under 5 years old,unilateral prone.The early diagnosis, timely and broad-spectrum antibiotic therapy, surgical drainage when necessary, most children could achieve a satisfactory curative effect.

PU-132

眼睑清洁布抗螨疗效观察

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目的：探讨眼睑清洁布对蠕形螨的杀灭作用。

方法：选择 2016 年 6 月至 12 月就诊的门诊患者。拔取受检者眼部睫毛，进行蠕形螨检查。睫毛蠕形螨镜检阳性患者使用眼睑清洁布擦拭双眼睑缘，每天 2 次，每周随访 1 次，治疗 4 周后进行疗效评价。评价指标包括蠕形螨计数、OSDI、BUT、SⅠT。

结果：共收集患者 43 例，其中 28 例（65.1%）查到蠕形螨。10 例睫毛蠕形螨镜检阳性患者使用眼睑清洁布治疗。治疗前蠕形螨镜检计数为（9.7 ± 8.0）只 / 8 根睫毛，治疗四周后后降至（1.4 ± 0.5）只 /8 根睫毛（$P < 0.05$）。治疗前 OSDI（28.9 ± 16.2）分，治疗后（21.8 ± 16.1）分，（$P=0.284 > 0.05$），治疗后 OSDI 评分降低，但差别无统计学意义；治疗前干眼指标 BUT、SⅠT 分别为 (1.7 ± 1.0)s，(8.5 ± 4.6)mm/5min，治疗后分别为 (2.5 ± 1.2)s，（8.6 ± 5.6）mm/5min,($P1 < 0.05$，$P2 > 0.05$), 治疗后患者 BUT 明显降低而 SⅠT 无明显统计学差异。

结论：眼睑清洁布擦拭睑缘能有效降低眼部蠕形螨寄生数量，从而缓解蠕形螨性眼病的临床症状。

Clinical treatment of ocular demodex by the use of tea tree oil eye care patch.

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AIM: To discuss the clinical efficacy of tea tree oil eye care patch in treating scaly blepharitis，which is associated with demodex.

METHODS: A total of 48 outpatients between June 2016 and December 2016 were included in the study. Eyelash samples were collected from each

patient and examined under the light electron microscope. The method of treatment：Lid scrub with tea tree oil eye care patch bilaterally twice every day. Patients returned for evaluations every one week。The success of the treatment was evaluated at the end of four weeks. The assessment included an evaluation of changes in，demodex count，the ocular discomfort score, BUT and SⅠT.

RESULTS: 43 patients were collected in our study, and demodex was found in 28(65.1%) patients. We chose 10 patients treated with tea tree oil eye care patch. The demodex count was 9.7 ± 8.0 for every 8eyelashes before treatment and declined to 1.4 ± 0.5 for every 8eyelashes after treatment ($P < 0.05$). The mean ocular discomfort score before and after treatment were 28.9 ± 16.2, 21.8 ± 16.1, respectively, and there was no significant improvement. The BUT was (1.7 ± 1.0) s before treatment, which elevated to (2.5 ± 1.2)s after treatment ($P=0.0349 < 0.05$) while no significant changes occurred in SⅠT ($P=0.8827 > 0.05$).

CONCLUSION: Tea tree oil eye care patch can greatly diminish the number of demodex mites and effectively relieve the ocular svmptoms caused by demodex.

PU-133

早产儿视网膜病变玻璃体腔雷珠单抗注射与新生儿支气管肺发育不全相关性的研究

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目的：观察早产儿玻璃体腔雷珠单抗注射对早产儿术后血氧的影响。

方法：回顾性观察我院 2015/01/01 ~ 2017/3/30 接受玻璃体腔注药的患儿，观察术后患儿血氧变化的情况。

结果：1、共观察接受治疗的患儿 141 例，平均出生胎龄：29.85 ± 2.96 周；平均出生体重：1.41 ± 0.499kg。 2、46/141 人术后出现了明显的血氧波动。出现血氧波动的时间从 1 天到术后 14 天不等，平均：4.09 ± 3.12 天。术前血氧饱和度均处于稳定状态。术后需要吸氧才能维持血氧稳定者：机械通气 13 人，高流量吸氧 4 人，低流量吸氧 15 人，外界触摸刺激恢复血氧者 14 人。所有患儿胸部 X 片均显示：肺部出现纹理紊乱，两肺野磨玻璃样模糊阴影。新生儿科医生给出补充诊断：新生儿支气管发育不全（BPD）。3、我们对玻璃体腔注药术后共 41 例患儿进行了血清 VEGF 水平进行了检测：术后三天血清中 VEGF 水平最低，术后 1 个月基本恢复到术前水平。

结论：早产儿肺部的发育受 VEGF 水平影响，早产儿视网膜病变患儿接受玻璃体腔雷珠单抗注射会引起外周血中 VEGF 水平降低，会增加早产儿发生新生儿肺支气管发育不全的机率。

Correlation between intravitreal ranibizumab injection and neonatal bronchopulmonary dysplasia in ROP patients

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OBJECTIVE: To observe the effect of intravitreal ranibizumab injection on blood oxygen of ROP infants.

METHODS: a retrospective study was carried out in our hospital from 2015/01/01 to 2017/3/30 with intravitreal ranibizumab injection. The changes of blood oxygen in children after operation were observed.

RESULTS: 1. All the patients were observed in the treatment of 141 cases, the average gestational age of birth: 29.85 ± 2.96 weeks; the average birth weight: 1.41 ± 0.499kg. 2.46/141 after the operation have significant fluctuations in blood oxygen. The time of onset of blood oxygen fluctuation ranged from 1 days to 14 days after surgery, with an average of about 4.09 ± 3.12 days. Preoperative blood oxygen saturation were in a stable state: 22 patients with spontaneous breathing before operation, low flow oxygen inhalation of 9 people, high flow oxygen inhalation of 2 people, the need for mechanical ventilation of the 13. After the operation the need for oxygen to maintain stable blood oxygen: mechanical ventilation 13 people, high flow oxygen inhalation of 4 people, low flow oxygen inhalation of 15 people, the outside touch stimulation to restore oxygen to the blood of 14 people. All children with chest X rays showed: the presence of texture disorders in the lungs, two lung grinding glass like fuzzy shadows. Additional diagnosis is neonatal bronchial dysplasia (BPD). 3. We observed the serum VEGF level of the total of 41 cases after intravitreal injection of Lucentia. The level of serum VEGF was lowest in the postoperative day 3. 1 months after operation, the VEGF level recovered to preoperative level.

CONCLUSION: the premature lung development by VEGF level, retinopathy of prematurity patients received intravitreal ranibizumab injection can cause the VEGF level in peripheral blood decreased, which will increase the incidence of neonatal premature infants with BPD.

PU-134

2016 年武汉市学龄前儿童眼健康情况分析

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目的：早期发现并及时治疗儿童屈光不正、斜视、弱视及其它眼病，绘制本地区学龄前儿童眼病图谱，以降低可预防盲及低视力儿童患病率。

方法：对武汉市内 68 家幼儿园内共计 10550 名 3-6 岁儿童进行眼部检查。采用手持式自动验光仪进行屈光检查，由专业小儿眼病医师进行眼位检查及裂隙灯检查。远视 ≥+2.50DS，近视 ≥-0.25DS，散光 ≥1.00DC，两眼屈光度差值 ≥1.50 诊断为屈光不正，遮盖去遮盖发现眼动诊断为斜视，裂隙灯检查有倒睫、结膜炎、睑腺炎等为其他眼病，无明显异常者视为正常。

结果：10550 名 3-6 岁儿童中，正常儿童 8516 人，屈光不正者 1789 人，检出率 16.95%，斜视者 32 人，检出率 0.30%，其他眼病者 309 人，检出率 2.93%。

结论：武汉市学龄前儿童屈光不正检出率明显较斜视及其他眼病高，因此对幼儿园学龄前儿童进行视力筛查，早发现、早治疗很有必要。应加大儿童眼保健的宣传及儿童眼病的健康教育，提高家长、社会对儿童眼病的认识和重视。

Analysis of eye health status of preschool children in Wuha

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OBJECTIVE: To find and treat the children with ametropia, strabismus, amblyopia and other eye diseases timely.To produce eye diseases atlas of preschool children in the district.To reduce the incidence rate of preventable blindness and low vision in children.

METHODS: 10550 children from 68 kindergartens in Wuhan were examined,aged from 3 to 6 years old.A hand-held automatic refractometer was used for refractive examination,and a professional pediatric ophthalmologist did the eye position and slit lamp examination.Hyperopia ≥+2.50DS,myopia≥-0.25DS, astigmatism≥1.00DC, and anisometropia≥1.50 were diagnosed ametropia.Found eye movement with cover-recover test was diagnosed strabismus.Found trichiasis, conjunctivitis and stye with slit lamp examination was diagnosed the other eye diseases.Without the problems above was diagnosed normal.

RESULTS: Among the 10550 children aged 3-6 years old, 8516 were normal , 1789 were ametropia, the detection rate was 16.95%, 32 were strabismus, the detection rate was 0.30%, 309 were other eye diseases, the detection rate was 2.93%.

CONCLUSION: The detection rate of ametropia is obviously higher than strabismus and other eye diseases of preschool children in Wuhan. Therefore, it's necessary to carry out visual screening for preschool children. We should increase the propaganda and educational strength of children's eye care, and improve the awareness of parents and society in children's eye diseases.

PU-135

伴全身感染的早产儿眼底表现

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目的：观察伴有全身感染的早产儿眼底的改变

方法：回顾性观察 2015/01/01 ~ 2017/4/14 合并有全身感染早产儿，接受 Retcam III 眼底检查，观察眼底出现的病变。

结果：1、细菌感染：新生儿肺炎，败血症患儿的早产儿，眼底出现早产儿视网膜病变的同时伴有视网膜的水肿以及在有血管区的独立无灌注区病灶。2、病毒感染：1 例 HSV-2 患儿视网膜出现了大片黄白色坏死病灶，4 例 CMV 患儿出现了视网膜血管白鞘，血管闭塞的改变改变。3、梅毒感染：1 例患儿出现急进性后部型早产儿视网膜病变的同时，血管闭塞，血管白鞘，玻璃体积血。4、弓形虫感染：患儿视网膜可见黄白色团块样浑浊。

结论：合并全身感染的早产儿，常常发生视网膜血管的异常，这类患儿发生视网膜病变的程度重，进展快。

Fundus manifestations of premature infants with systemic infection

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PURPOSE: To observe the changes of fundus in premature infants with systemic infection.

METHODS: a retrospective study of 2015/01/01 ~ 2017/3/30 combined with systemic infection of premature infants, fundus lesions were observed by Retcam III fundus examination.

RESULTS: 1. Bacterial infection::(neonatal pneumonia, premature infants with septicemia) the retinopathy of prematurity is with retinal edema, and the presence of independent non-vascular lesions in the vascular area. 2. the virus infection: 1 cases of children with retinal HSV-2 appeared in a large yellowish white necrotic lesions, 4 cases of CMV have retinal vascular sheathing and the vascular occlusion. 3. syphilis infection: 1 cases of children has aggressive posterior retinopathy of prematurity with vascular occlusion, vascular sheathing, vitreous hemorrhage. 4.Toxoplasma infection: children with retinal yellowish white mass opacification.

CONCLUSION: premature infants with systemic infection often have abnormal retinal blood vessels, which have a serious degree of ROP.

PU-136

243 例儿童频繁眨眼的临床分析

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目的：探讨儿童频繁眨眼的发病原因并进行对症治疗。

方法：对 2012~2017 年前来我院门诊就诊的 243 例 3~12 岁患儿进行了详细的问诊、饮食习惯、电子产品的使用及视力、结膜、角膜、屈光状态、眼底、泪膜破裂时间及角膜荧光染色等检查，分析其发病病因。

结果：眼表疾病 140 例占 57。6%，（结膜炎或过敏性结膜炎或眼结石 51%、干眼 38%、倒睫 9%、角膜炎 2%）. 屈光不正 85 例占 35%，儿童抽动障碍 5 例占 2%，精神紧张及其他 15 例占 6%。

结论：眼表疾病和屈光不正是引起儿童频繁眨眼的主要病因，平时不良的生活习惯及电子产品的过度使用及用眼时间过长是常见的诱因，因此我们在临床上要仔细的询问病史，认真细致的检查，找出发病原因，做出正确的诊断，通过治疗可获得良好的疗效。

Clinical analysis of 243 children with frequent blinking

Shenjianling

Lanzhou Ireland eye medicine

OBJECTIVE: To investigate the causes of frequent blinking in children and to treat them.

METHODS: the 2012~2017 clinic in 243 cases of 3~12 years old children were carried out a detailed inquiry, dietary habits, the use of electronic products and visual acuity, diopter, conjunctiva, cornea, fundus, rupture time of tear film and corneal fluorescein staining examination, analysis of its causes.

RESULTS: 140 cases of ocular surface diseases accounted for 57. 6%, (conjunctivitis or allergic conjunctivitis or eye stones 51%, 38%, 9%, dry eye trichiasis keratitis 2%). 85 cases of ametropia accounted for 35%, accounted for 2% of 5 children with tic disorder, mental stress and other 15 cases accounted for 6%.

CONCLUSION: ocular diseases and refractive errors are the main cause of children frequent blinking, and excessive use of the eye is too long and the usual bad habits of electronic products is a common cause, so we want to ask medical history carefully in clinic, careful inspection, find out the cause of disease, make the correct diagnosis and treatment by can get a good effect.

PU-137

近视儿童的黄斑区视网膜厚度分析

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目的：探讨儿童近视眼变化特点，了解不同程度近视儿童的黄斑区视网膜厚度变化特点。

方法：收集 2016 年 4 月 -7 月在我院眼科门诊就诊的儿童 197 例 306 眼，其中男 78 例，女 119 例，平均年龄（9.5+ 4.2）岁，所有的受检者都排除眼底及眼前节眼病，进行扩瞳检影验光，根据结果分为四组：A 组轻度近视组、B 组中度近视组，C 组高度近视组，D 组正常对照组，运用 Zeiss-OCT primus200 对其进行黄斑区扫描，记录三次得平均值，A 超记录眼轴长度，SPSS18 对各组的黄斑区视网膜分析比较。

结果：A、B、C、D 四组黄斑中心凹的厚度分别为 (244.4 ± 18.9)μm、(244.6 ± 18.2)μm、(249.4 ± 30.8)μm、(240.8 ± 24.1)μm, 高度近视组在内环及外环八个方向视网膜厚度平均值分别为 295μm、287μm、290μm、291μm、262μm、258.0μm、260μm、256μm, 差异有统计学意义（P<0.05）。

结论：儿童时期近视尽管眼底尚未发现明显改变，但黄斑区的视网膜厚度已经开始迁移。高度近视组黄斑中心凹的视网膜厚度变厚，其余各方向均变薄。

Analysis on macular retinal thickness by optical coherencce tomography in children myopia

Chen Xi

Children's hospital of Hunan

OBJECTIVE: To investigate the macular retinal thickness changes in difference myopia in children,so as to discuss the characteristics of children's myopia.

SUBJECTS AND METHOD: Select 197 children in our hospital seventy-eight boys and one hundred-ninty girls,average age of 9.5+ 4.2.All eyes were ruled out the pathological changes of fundus diseases and front section.After a tropine optometry,they were divided into four groups:A is low myopia group ,B is moderate myopia group and C is high myopia group and D is normal control group.Retinal scans were obtained for all eyes by using Zeiss optical coherence tomography(OCT),The results were compared with each other by using SPSS18.0.

RESULTS: Macular retinal thickness: macular central fovea retinal thickness of group A is (244.4 ± 18.9)μm,group B is(244.6 ± 18.2)μm,group C is (249.4 ± 30.8)μm,and group D is (240.8 ± 24.1)μm,The thickness of the macular fovea has significantly in each group（P<0.05）.In high myopia group,the retinal thickness in inner-up is (295.4 ± 17.7)μm,in inner-down is (287.0 ± 17.3)μm,in inner-nasal is (290.6 ± 21.8)μm,and in inner-temporal is (291.2 ± 18.2)μm,in outer-up is (291.2 ± 18.2)μm,in outer-down is (258.0 ± 20.7)μm,in outer-nasal is (260.8 ± 30.1)μm,and in outer-temporal is (256.7 ± 26.0)μm,all the difference has statistically significant（P<0.05）.

CONCLUSION: Although there is no obvious change in the fundus of children with myopia, the thickness of retina has begun to mi-

grate.With the deeping of myopia,except for maculr central fovea thickness,other side are become thinner.

PU-138

硬性透气性角膜接触镜用于先天性白内障术后无晶状体眼视功能重建的疗效观察

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目的：回顾比较不同光学矫正方式后的视功能状况，分析角膜接触镜（RGP）用于先天性白内障术后无晶状体眼视功能重建的可行性、有效性和安全性。

方法：回顾 2009 年 1 月至 2016 年 12 月间行先天性白内障手术患儿的临床资料，进行横断面研究。分析的资料包括患儿的眼部资料、手术方式、手术并发症、术后的光学矫正方式和依从性、最佳矫正视力 (BCVA)、双眼视功能等。根据光学矫正不同分为框架眼镜、RGP 和人工晶体组。

结果：435 例患儿纳入本次研究，男女比例 1.75:1，平均手术年龄为 17.63 月龄。RGP 和人工晶体组的 BCVA 和双眼视功能显著优于框架眼镜组，RGP 与人工晶体组比较BCVA无明显差异。RGP组随访时未见有明显角结膜并发症，但镜片丢失率较高。人工晶体组后发性白内障和瞳孔移位的发生率显著高于另两组。术后 BCVA 与手术年龄，术前眼球震颤及斜视程度，光学矫正方式及依从性密切相关，而与患儿是否进行一期人工晶体植入无关。

结论：RGP 在无晶状体眼光学矫正方面具有独特的优势，对于婴幼儿的超高度远视，其光学成像效果好，可提高视功能和视觉质量，降低盲和低视力的发生率，且可避免早期行人工晶体植入术的术后并发症。

Observation of the effect of rigid gas permeable contact lens in the visual function reconstruction after congenital cataract surgery

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OBJECTIVE: Congenital cataract is the first curable blindness in children, the recovery of visual function after surgery depends not only on the surgical technique, but also on the timely, reasonable and effective optical correction. This study analyzed the visual function with different optical corrections after congenital cataract surgery in the past 6 years, and evaluated the feasibility, effectiveness and safety of rigid gas permeable contact lens in visual function reconstruction.

METHODS: Retrospectively analyzed the clinical data of patients with congenital cataract surgery between January 2009 and December 2016, including anterior segment and fundus examination, intraocular pressure, ocular axial length, surgical procedures, operative complications, optical correction methods, the best corrected visual acuity, optical rectification compliance, binocular visual function etc.

RESULTS: A total of 435 children were included, male to female ratio is 1.75:1, the average age of congenital cataract surgery was 17.63 months. The surgical procedure was cataract surgery with anterior vitrectomy and intraocular lens implantation. According to the optical correction method, the patients were divided into frame glasses group, contact lens group and intraocular lens implantation group. The best corrected visual acuity and binocular visual function of the contact lens group and intraocular lens group were significantly better than those of the frame correction group. There was no obvious complication in the patients with contact lens. The incidence of lens reproliferation into the visual axis, pupillary membranes and corectopia after IOL implantation was significantly higher than that of the contact lens group. The optimal correction visual acuity was closely related to the age of surgery, preoperative nystagmus and strabismus, postoperative optical correction and compliance.

CONCLUSION: Contact lens has the unique advantages in the correction of infantile aphakic eye, greatly improve the visual function and visual quality, reduce the incidence of blindness and low vision, and avoid early intraocular lens implantation and postoperative complications.

PU-139

康柏西普治疗早产儿视网膜病变的远期观察

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目的：评价康柏西普治疗ＲＯＰ１年以上的临床效果

方法：回顾性分析２０１４年４月至２０１５年２月我院治疗的ＲＯＰ患儿的临床资料，以最终视网膜病变消退无复发为成功，并观察注药次数及全身合并症。

结果：患儿共６　人（11 眼）；其中 3 期（2 区）10 眼，AP-ROP 1 眼，治疗后观察期均超过 1 年 93.63 ± 18.86 周，平均出生体重 1446.67 ± 141.66 克，胎龄 30 ± 1.095 周，矫正胎龄 39.83 ± 2.92 周；病变消退时间 2.45 ± 1.75 周；再次治疗 2 眼 (首次治

疗后 8 周)，均无眼科及全身并发症。

结论：康柏西普治疗 ROP 有效、安全。大部分一次治疗成功。

Long-term outcome after intravitreal conbercept injections for the treatment of retinopathy of prematurity

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PURPOSE: To investigate the structural outcomes and recurrence of retinopathy of prematurity (ROP) patients treated with intravitreal conbercept injection (IVC) over a period of 1 years.

METHODS: A retrospective case series of stage 3+ in zone II ROP or AP-ROP patients treated with IVC between April 2014 and Februrary 2015 were studied. The primary outcome was treatment success defined as regression of disease and absence of recurrence. The secondary outcomes were recurrence of disease , injection frequency and the final regression of disease. The ocular and systemic adverse events were also observed.

RESULTS: A total of 11 eyes (6 patients) with ROP were enrolled and received IVC. Among them, 10 eyes had stage 3+ in zone II ROP and 1 eyes had AP-ROP. Mean gestational age, birth weight, postmenstrual age at initial treatment, and follow-up period for the infants receiving IVC were 30 ± 1.095 weeks, 1446.67 ± 141.66 g, 39.83 ± 2.92 weeks and 93.63 ± 18.86 weeks, respectively. 9(81.82%) of 11 eyes received only once injection and the regression of disease occured 2.45 ± 1.75 weeks afterward. Two recurrent eyes received a second IVC.The time from treatment to the recurrence was 8 weeks. No ocular or systemic adverse effects associated with the injection itself or the drug were observed.

CONCLUSIONS: Conbercept is a new effective treatment strategy for ROP therapy. Most of the patients with stage 3+ in zone II ROP or AP-ROP could obtain regression with once injection.

PU-140

综合沟通交流方式在住院期间小儿双眼盲患者的应用

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目的：探讨综合沟通交流方式在小儿双眼盲患者的应用，促进患者与医务人员间的情感交流，促进患儿的身心健康。

方法：应用交谈、触摸、倾听、共情等多种交流方式与患儿建立良好的情感，取得患儿的信任。

结果：患儿通过敏锐的听觉以及患儿对医务人员的情感建立，在住院期间获得了良好的愉悦体验。

结论：关注小儿双眼盲患者，综合沟通交流方式取得良好的应用效果；小儿双眼盲患者体验到良好的社会归属感。

Application of integrated communication mode in children with binocular blindness during hospitalization

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OBJECTIVE: to investigate the comprehensive communication application in pediatric patients with bilateral blindness, promote the emotional communication between patients and medical staff, promote children's physical and mental health.

The application method of conversation, touch, listening, empathy and so on many kinds of communication with the children to establish good emotion, children's trust.

The results children through a sharp hearing and children on the medical staff in the hospital during the establishment of emotion, to get a good and pleasant experience.

CONCLUSION: attention in children patients with bilateral blindness, good application effect to achieve comprehensive communication; pediatric patients with bilateral blindness to experience good social sense of belonging.

PU-141

健康轻到中等程度近视儿童脉络膜厚度研究

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目的：研究健康轻到中度近视儿童黄斑脉络膜厚度、地形分布及相关因素。

方法：来自 120 名健康儿童的 120 只眼被纳入研究。年龄 9.69 ± 1.12 岁。等效球镜 -2.88 ± 1.46D。分为轻、中度近视组。测量眼轴长度 (AL) 和黄斑脉络膜厚度 (CT)。CT 测量位点位于中心凹下 (SF)，中心凹上方、下方、鼻侧、颞侧距中心凹 1mm、2mm、3mm 处。

结果：轻、中度近视组儿童年龄大小无显著差异性。轻度近视组较中度近视组儿童 AL 显著短，(P<0.001)、SFCT 显著厚 (P=0.005)。两组儿童的黄斑脉络膜厚度分布基本相同。中心凹鼻侧测量位点 CT 均较 SFCT 显著薄。其余测量位点除中心凹下方 3mm 处脉络膜较 SFCT 薄外，其余测量位点均较 SFCT 厚，但仅有中心凹颞侧 2mm 处差异有统计学意义。分析 SFCT 与性别、年龄、SE、AL 的相关性，仅轻度近视组 AL 与 SFCT 有显著的负相关关系 (r= — 0.389，P=0.001)，其余者无相关关系。

结论：一定年龄阶段及屈光异常程度的健康儿童的 SFCT 相对稳定，与性别、年龄、SE、AL 无显著相关性。黄斑脉络膜厚度地形学变化在轻度近视和中度近视儿童相似。

Choroidal Thickness in Healthy children with Mild and Moderate Myopia

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PURPOSE: To evaluate macular choroidal thickness(CT), topographical variation and its associations with age, gender, spherical equivalent(SE) and axial length(AL) in healthy mild and moderate myopia children.

METHODS: 120 eyes from 120 healthy children aged from 8 to 11 years were assessed. Children were divided into mild (-0.50≥SE>-3.00D) and moderate (-3.00≥SE>-6.00D) group of myopia by their SE. AL and CT were evaluated. CT was measured at the fovea, 1 mm, 2mm and 3 mm nasal, temporal, superior, and inferior to the fovea.

RESULTS: AL was shorter in mild myopia than in moderate myopia(24.18 ± 0.69mm and 24.97 ± 0.68mm respectively, P<0.001) and subfoveal CT(SFCT) was thicker in mild myopia than in moderate myopia(262.00 ± 40.57μm and 236.00 ± 55.08μm respectively, P=0.005). The topographical variation was similar between refractive groups. CT nasal to the fovea were significantly thinner than SFCT. All other CT except 3mm inferior to the fovea were thicker than SFCT, but only 2mm temporal to the fovea differed significantly. AL correlated negatively with SFCT(r=-0.389，P=0.001) in mile myopia group. Sex, age, SE had no significant association with SFCT in two refractive groups and AL had no significant association with SFCT in moderate myopia group.

CONCLUSIONS: The topographical variation was similar in refractive groups. SFCT was stable in healthy children with little difference between age and refractive error. SFCT had no significant correlation with age, sex, AL and SE.

PU-142

便携式广域眼底成像系统在高危婴幼儿眼底病筛查中的应用

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目的：探讨便携式广域眼底成像系统在高危婴幼儿眼底病筛查中的应用。

方法：在湖南省儿童医院眼科对具有眼病高危因素的 502 例婴幼儿予便携式广域眼底成像系统进行眼底筛查。其中男 286 例，女 216 例，年龄 10 天 ~3 岁。患儿的高危因素包括缺血缺氧性脑病、病理性黄疸、巨细胞病毒 / 风疹病毒感染、脑损伤、发育迟滞、上睑下垂、斜视、眼球震颤、颅内感染、颜面部血管瘤。

结果：筛查的患儿中视网膜出血者 65 例，脉络膜缺损 4 例，牵牛花综合征 1 例，白化病眼底 8 例，白内障 2 例，视神经萎缩 3 例，视网膜有髓神经纤维 2 例，视网膜母细胞瘤 1 例，视盘发育不良 2 例。

结论：对有高危因素的婴幼儿眼底病需早期筛查。便携式广域眼底成像系统可实现移动医疗远程会诊，是婴幼儿眼底筛查的便利工具。

Clinical application of portable wide-angle digital retinal photography for retinopathy screening in high-risk infants

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AIM: To investigate the application of portable wide-angle digital retinal photography in the screening of high-risk infant's retinopathy.

METHODS: Fundus images were taken in 502 patients who were diagnosed with hypoxia ischemia, encephalopathy, pathological jaundice, cytomegalovirus/rubella infection, brain damage, retardation, ptosis, strabismus, nystagmus, intracranial infection and facial hemangioma by portable wide-angle digital retinal photography in Hunan Children's Hospital（male 286,female216,aged from 10days to 3years ）.

RESULTS: In these infants, there were retinal hemorrhage in 65 cases, choroid coloboma in 4 cases, Morning glory syndrome in 1 case, ocular albinism in 8 cases, cataract in 2 cases, optic atrophy in 3 cases, retinal myelinated nerve fibers in 2 cases, retinoblastoma in 1 case ,optic nerve hypoplasia in 2 case.

CONCLUSIONS: Retinopathy screening should be underwent early and portable wide-angle digital retinal photography is a convenient mobile medical equipment for it.

PU-143

新生儿视网膜下渗出 --11272 例新生儿广角眼底数码眼底筛查照片的回顾性研究及随访结果分析

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目的：在新生儿视网膜筛查过程中发现的一种未见报道的，类似视网膜下渗出病变性（SREN）的改变，本研究描述其临床特征和发生率。

方法：2013 年 1 月 -2016 年 12 月份使用接触式广角数码眼底照相机进行眼底检查的全部新生儿 11272 例，回顾性读片，根据分布及形态对进行分析统计，随访的病例做不同时期的形态变化观察。

结果：11272 例新生儿，其中早产儿 3045 例（27.01%），足月儿 8227 例（72.99%）。（1）其中观察到 SREN 共 193 例（1.71%），足月儿 173 例（2.11%），早产儿 20 例（0.624%）足月儿和早产儿中 SREN 发生率具有统计学差异，P<0.05。临床特征：SREN 多发生于颞侧视网膜（ROP 分区 3 区）范围内，分布多于赤道及赤道以前。形态为不规则，部分病例中可清晰观察到视网膜血管从其表面走形。随访病例中，发现 SREN 范围可随时间变化而改变。少数病例中发现视网膜出血并存，1 例病例中合并先天性白内障，其他婴幼儿高发的视网膜疾病未能发现。

结论：SREN 未见以往文献报道，但是一种发生率较高的新生儿眼底现象，其更容易发生在足月儿中，发生后亦为非静止的现象。

Subretianal Exdutes in Nowbron - A Retrospective Studies of 11272 Cases in Newborn Retinal Screening with Contact Wide Angle Fundus photographys and RESULT of Follow-up

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PURPOSE: A phenomenon we named subretianal exdutes in newbron(SREN) which never be reported have been found in retinal screening of newborn by contact wide-angle fundus camera . This study reviewed SREN's images to describe clinical feature and incidence of SREN.

MOTHEDS: This was a prospective, single-center study. Study population is all the newborns who all presented to retinal screening at Anhui Women and Child Health Care Hospital between Jan 2013 and June 2016. 11272 cases enrolled. The photographs reveiewed to choice cases which could be observed SREN for classifying and compiling the morphological and distributional feature. For follow-up cases, morphological change were compared with different periods.

RESULTS: A total of 11272 cases of newborn are enrolled. Gender composition : 6188 cases were male (54.90%) and 5084 cases were female (45.10%). Two age groups were defined: 3045 cases of premature infants (27.01%), 8227 cases of full-term infants (72.99%). SREN were observed in 193 cases (1.71%), full-term group were 173 cases (incidence in full-term group is 2.11%), premature group were 20 (incidence in premature group is 0.66%).

Clinical feature: SREN occurred in the temporal equatorial distribution of retina (ROP partition area 3) range, also could be found at the above and below the equator of retina and occasionally on the nasal equatorial retina. The shape is irregular shape, such as point, line, strip or sheet. In some cases can be clearly observed in the normal retinal vessels under its surface, and the surface of the retina is still flat. This is why we named it as sub-retinal exudates of newborn(SREN).

In the follow-up cases, it was found that the range of SREN could change with time. SREN coexisted with retinal hemorrhage in few cases. 1 cases of congenital cataract. Other high incidence of retinal diseases in infants and young children were not found.

CONCLUSIONS: As a phenomenon first be reported, what cause the SREN and what SREN could cause are unknown. But in any case, a phenomenon which have the incidence of 2% in the newborn should be paid attention to and research.

PU-144

奥洛他定联合 0.3% 爱丽滴眼液治疗儿童过敏性结膜炎疗效观察

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目的：观察奥洛他定滴眼液联合 0.3% 爱丽滴眼液治疗儿童过敏性结膜炎的疗效。

方法：将 1000 例过敏性结膜炎患者随机分为对照组 500 例和观察组 500 例。对照组采用奥洛他定滴眼液常规治疗 , 观察组采用奥洛他定滴眼液联合 0.3% 爱丽滴眼液治疗 . 对比两组患者临床疗效。

结果：对照组治疗总有效率 79.2%，观察组治疗总有效率 94.8%，差异有统计学意义 (P ＜ 0.05).

结论：奥洛他定滴眼液联合 0.3% 爱丽滴眼液治疗过敏性结膜炎疗效显著，未见不良反应。

Clinical effect observation of olopatadine hydrochloride eye drops combined with 0.3% Sodium Hyaluronate Eye Drops in treatment of allergic conjunctivitis in children

Wangxiuhua

Children 's hospital in jilin city

OBJECTIVE: To investigate the clinical curative effect of olopatadine hydrochloride eye drops combined with 0.3% Sodium Hyaluronate Eye Drops in treatment of allergic conjunctivitis in children.

METHODS: 1000 cases of children with allergic con-junctivitis were selected,and were randomly divided into study group and control group。The control group were treated with olopatadine hydrochloride eye drops,the study group were treated with olopatadine hydrochloride eye drops combined with 0.3% Sodium Hyaluronate Eye Drops .The clinical effects were compared.

RESULTS: The total effective rate of the control group was 79.2%, and that of the study group was 94.8%,the total effective rate of study group was better than that of the control group,the difference was significant (P<0.05).

CONCLUSION: The clinical effect of combined olopatadine hydrochloride eye drops with 0.3% Sodium Hyaluronate Eye Drops in treatment of allergic conjunctivitis in children is well and safe.It will be worthy of clinical application.

PU-145

中西医结合治疗儿童异常瞬目综合征临床研究

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目的：探讨儿童异常瞬目综合征病因及治疗方法。

方法：对我院眼科门诊 2 0 10 年 6 月 ~ 2 0 14 年 4 月就诊的 2746 例儿童异常瞬目综合征患儿详细询问主诉，伴随症状，生活习惯尤其是有无偏食、观看视频情况，精神心理状态。常规检查视力，眼位，屈光状态，屈光间质，眼底，眼表，泪膜破裂时间（BUT），血微量元素检测，并进行病因分析及中西医结合治疗。

结果：2746 例异常瞬目综合征儿童中：长时间观看视频 1878 例（68.39%），眼表疾病 898 例（32.70%）, 各类屈光不正 542 例（19.74%）, 小儿抽动症 208 例（7.57%），偏食 892 例（32.48%），自卑胆怯 42 例（1.53%）。检查泪膜破裂时间（BUT）显著降低 1812 例（65.99%）。有眼表炎症者给予药物治疗，无眼表炎症者给予无防腐剂的人工泪液。屈光异常者矫正屈光不正。有小儿抽动症者内科协助治疗。异常瞬目时间超过 2 周，加用静灵口服液。2746 例异常瞬目综合征患儿经 2-6 周的治疗 ,2276 例（82.88%）患儿治愈，424 例（15.44%）好转 ,46 例（1.68%）无效。总有效率 98.32%.

结论：儿童异常瞬目综合的主要病因有：视频终端综合征、眼表疾病、屈光不正、小儿抽动症，偏食，心理因素，其中视频终端综合征和眼表疾病是小儿异常瞬目综合征的主要病因。给予中西医结合治疗疗效确切。

Analysis of 2746 Children's Abnormaly Winking Patients

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Children 's hospital in jilin city

OBJECTIVE: To explore the main cause and treatment method of chilldrens'abnormal Winking Patients.

METHOD: seleting 2746 cases ,inquiring medical history and conventionalexamination.

RESULT: in 2746 cases ,there are 898 ocular surface disease cases,542 refractive error cases, 208 children with tic disorders.Through comprehensive treatment , 2276cases (82.88%) are cured, 424 cases (15.44%) are better,46 cases (1.68%) are no effect.Total effective rate is 98.32%.

CONCLUSION: Ocular surface disease and refractive error are main cause of chilldrens'abnormal Winking Patients. Curative effect of comprehensive treatment is good.

PU-146

斜视矫正术后并发结膜囊肿的临床分析

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目的：探究斜视矫正术后出现术区结膜肿物的临床表现、原因与转归。

方法：回顾性分析 2010-2016 年由同一治疗小组收治的斜视手术患者 1675 例，在术后随访中发现 7 例（7 眼，发病率约 0.4%）出现术区结膜肿物，分别记录其临床特点、肿物的转归、处理和相应的病理学、细菌学检查。

结果：此 7 例患者中：年龄 3 岁 8 月至 39 岁（平均 21.4 岁）；斜视手术涉及 13 条直肌（内直肌 8 眼，外直肌 5 眼），3 条斜肌（均为下斜肌）；结膜肿物出现部位：鼻侧与颞侧各 3 例，下方穹隆部（下斜肌手术）1 例；手术方式：直肌徙后术 3 例，直肌缩短术 3 例，下斜肌断腱术 1 例；结膜肿物发现时间：术后 10 天至术后半年；按手术时操作肌肉的顺序：第一条肌肉 2 例（其一为唯一施术肌肉），第二条或以上手术肌肉的 5 例。7 例中有 4 例患者接受手术切除肿物，所有切除物均送病理学和细菌学检查，其中仅 1 例发现耐甲氧西林金黄色葡萄球菌感染（MRSA）；其他 3 例非手术者有 2 例自行消退，1 例持续但无症状。

结论：结膜肿物是罕见的斜视矫正术后并发症。手术操作时间越长（术中操作排在第二或者更后的肌肉更容易发生），结膜肿物发生可能性越大；缝线感染和上皮植入可能是最主要的病因。

Conjunctival Cysts after Strabismus Surgery: Seven Cases and a Literature Review

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OBJECTIVE: Conjunctival cysts are a relatively uncommon complication of strabismus surgery in young patients undergoing recession surgery. This study aimed to explore the clinical manifestations, etiology and prognosis of conjunctival cyst at the operative site after strabismus surgery.

METHODS: The data of 1675 patients were included in our retrospective analysis, who underwent strabismus surgery at the Xiangya Hospital of Central South University between 2010 and 2016. During the postoperative follow-up, conjunctival cyst was found in 7 cases (7 eyes; 0.4%). The clinical characteristics, prognosis and follow-up data were recorded together with the results of pathological and bacteriological tests.

RESULTS: Seven patients between the age of 3 years 8 months and 39 years, with the mean age of 21.4 years, were included in the study. Strabismus surgery affected 13 recti, 8 medial and 5 lateral recti, and 3 obliques (all inferior oblique). Conjunctival cyst was detected in seven patients from between 10 days to and 6 months postoperatively surgery. In three cases, the cyst was detected at the nasal or temporal side, and in one case at the fornix. Four out of 7 patients underwent cyst excision; a sample of excised tissue was subjected to pathological and bacteriological tests. Among them, Methicillin-resistant Staphylococcus aureus (MRSA) was detected in one patient.

CONCLUSIONS: Conjunctival cyst is a rare postoperative complication of strabismus surgery. A longer duration of the surgical procedure is accompanied with a greater possibility for occurrence of conjunctival cyst, which forms more easily in the second or last muscle operated on during surgery. The most probable causes of conjunctival cyst formation are infection at the suture site and epithelial implantation.

PU-147

激素超敏性高眼压症的临床报道

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目的：观察和处理斜视术后激素性高眼压症。

方法：选取 2016 年 1 月 ~2016 年 11 月入院行斜视手术的 90 例患者，年龄为 5~61 岁。所有患者斜视术后给予妥布霉素地塞米松滴眼液点术眼 4 次 / 日，妥布霉素地塞米松眼膏涂术眼 1 次 / 每晚，0.1% 玻璃酸钠滴眼液点术眼 4 次 / 日。术后 1 周、1 月、3 月复查眼位、眼压、视野、视力、裂隙灯检查眼前节。

结果：所有患者中有 4 例发生高眼压症，均在术后 1 月内发生，其中儿童 2 例，在术后用药第 3 天出现眼眶胀痛、头痛、呕吐现象，术眼眼压达 50mmHg, 给予停用妥布霉素地塞米松药物和急性降眼压处理，2 天眼压恢复正常，随访 3 月眼压、视野均正常；另外 2 例分别为中年人和老年人，眼压最高 30mmHg，给予停药后 1 周眼压降至正常，随访 3 月眼压、视野均正常。

结论：斜视术后使用激素性滴眼液虽然可以促进眼部水肿充血等症状消退，但应警惕激素性高眼压症，尤其是儿童患者，易感性更高，尽量选用低浓度激素性滴眼液或非甾体药物，如果发生激素性高眼压症，及时停药及降眼压处理，一般疗效满意。

PU-148

高度近视固定性内斜视的现代手术观

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目的：评估和分析改良的 Yokoyama 术在高度近视固定性内斜视的疗效。

方法：回顾性分析 2014 年 1 月 ~2015 年 9 月在我院通过改良的 Yokoyama 术治疗的 5 例高度近视固定性内斜视。术前均给予眼眶 CT 检查眼外肌的位置；综合验光测屈光度，A 超测量眼轴；术前、术后行 9 个诊断眼位检查眼外肌的运动功能；术中行眼外肌被动牵拉试验评估眼外肌的限制程度和功能。手术方式：采用改良的 Yokoyama 联合内直肌后徙术。

结果：术前眼眶 CT 显示患眼眼外肌出现移位现象，术中被动牵拉试验显示患眼内直肌均出现不同程度挛缩，患眼上下转均明显受限，术后 3 个月，发现患者视物无复视，第一眼位正位，内转自如到位，外转较术前明显改善，上下转较术前有所改善；术眼前节段无缺血表现。

结论：改良的 Yokoyama 术不仅有效改善患者固定性内斜视状态，同时改善眼球的运动功能。

PU-149

间歇性外斜视行斜视矫正术前后立体视观察

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目的：观察斜视矫正术矫正间歇性外斜视前后的立体视。

方法：2015 年 1 月至 2016 年 5 月在我院眼科行斜视矫正术的 20 例间歇性外斜视患者（偏斜度 -35 △至 -65 △），手术年龄为 7 至 12 岁。行非主导眼行外直肌后徙 5-8.5mm，伴同眼内直肌截短 4-7mm；随访时间：7 ~ 14 个月。观察指标：术后半年以上的远距离立体视（同视机检测）。

结果：20 例间歇性外斜视患者末次随访时双眼正位 20 例，正位率为 100%。所有患者术前后眼球运动正常，部分患者术后立体视有所改善。

结论：斜视矫正术可以有效的治疗间歇性外斜视，及时行斜视手术使眼位正位后立体视有所改善。

stereopsis of intermitent strabismus with strabismic operation

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OBJECTIVE: To appraise stereopsis of intermitent extropia with strabismusic operation.

METHODS: 20 patients with Intermitent extropia (degree of deviation from -35 △ to -65 △) were operated with strabismic operation in our hospital from January 2015 to may 2016. the surgical age was from 7 years to 12 years. The surgical procedures included lateral rectus muscle recession (5-8.5mm) and medial rectus muscle resection(4-7mm) on one eye. the follow-up time ranged from 7 months to 14 months. stereopsis on synoptophore was documented in different time after operation.

RESULTS: 20 patients were achieved good appearance(100%). all patients moved normally pre-operation and after-operation, 10 patitents with stereopsis impaired partially had improved after operation.

CONCLUSION: Timely strabismic operation can correct eye position effectively , stereopsis can improve partially .

PU-150

以复视为唯一症状的桥本氏甲状腺炎患者一例及文献综述

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背景：报道一例误诊为双上转肌麻痹的甲状腺相关性眼病患者，并对相关文献做一综述。
病例特点：患者主诉双眼复视 1 年，门诊以“双上转肌麻痹（左）”收入院。被动牵拉试验示左眼下直肌方向存在限制，遂行眼眶 CT 及甲状腺相关检查。TSH 为 5.020u IU/ml, FT4 为 11.84 pmol/l, A-TG 为 1785.00 IU/ml, A-TPO 大于 600.00 IU/ml，内分泌科会诊确诊为桥本氏甲状腺炎，眼部则确诊为甲状腺相关性眼病，保守治疗无效后给手术治疗改善眼位。
结论：临床诊疗中需注意症状不典型的甲状腺相关性眼病患者，避免误诊。

A Hashimoto’s thyroiditis patient presented diplopia as the only symptom:a case report and literature review

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BACKGROUND: To report a rare case of thyroid-associated ophthalmopathy with Hashimoto’s thyroiditis which masqueraded as double elevator paralysis in one eye.
CASE PRESENTATION: A patient presented diplopia for one year first came to our strabismus clinic and was diagnosed with double elevator paralysis in the left eye. Forced duction test was positive of the inferior rectus of the left eye, thus orbital CT and thyroid-associated blood tests were ordered for the patient. Surprisingly the results of blood tests showed that her TSH level was 5.020u IU/ml, FT4 was 11.84 pmol/l, A-TG was 1785.00 IU/ml, A-TPO was higher than 600.00 IU/ml.Endocrinology consultation was asked and thyroid ultrasonography showed a thyroid gland with heterogeneous echogenicity and a nodule in the left lobe. The patient was diagnosised with Hashimoto’s thyroiditis and treated with corticosteroid in the end. Unfortunately, internal treatment could not eliminate diplopia, thus the left inferior rectus recession of 9mm was performed in the end.
CONCLUSION: The awareness of atypical signs of Hashimoto’s thyroiditis is the key for proper diagnose and management.

PU-151

关于斜视手术中角膜保护对眼表影响的研究

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目的：了解斜视手术对眼表的影响，探讨术中角膜保护的临床意义。
方法：征募年龄为 7 ~ 45 岁斜视患者，随机分为三组，A 组（生理盐水组）、B 组（角膜保护剂组）、C 组（棉片组），于术前 1 天及术后 1 天、1 周、3 周，检测术眼泪膜破裂时间及泪河高度值 , 并行角膜上皮荧光素染色评分。于术后 1 天，客观评价患者畏光流泪情况。最后，对三组资料采用统计学方法进行分析比较。
结果：所有患者术后的泪膜破裂时间与术前均无统计学差异。与其它两组相比，角膜保护剂组的术后畏光流泪症状及角膜上皮荧光素染色阳性率最低，泪河高度值增加最少，并于术后一周时恢复至术前水平。
结论：斜视手术中应注重角膜的保护，角膜保护剂使用方便，可有效保护术眼角膜上皮，减少患者术后不适症状。

The clinical significance of corneal protection to the ocular surface in strabismus surgery

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OBJECTIVE: To study the influence of corneal protection on the ocular surface and its clinical significance in strabismus surgery.
METHODS: Collecting strabismus patients aged from 7 to 45 years old, and dividing them into 3 groups according to the difference of corneal protection. At different time points, the first noninvasive tear film break-up time, average noninvasive tear film break-up time, and tear meniscus height were measured and the cornea fluorescein staining was evaluated. One day after surgery, the symptom of photophobia was observed. Finally, all the data were analyzed by statistics.
RESULTS: The tear film break-up time wasn’t influenced by the surgery. Against other two groups, the occurrence rate of the symptom of photophobia and the positive cornea fluorescein staining were lower in the group B. The tear meniscus height of the group B in-

creased little at 1 day after surgery and decreased to the preoperative level at one week after surgery.

CONCLUSION: Protecting the cornea in strabismus surgery by the 2% hydroxypropyl methycellulose can make patients more comfortable after operation. It's simple and meaningful to do this during the surgery.

PU-152

新型睫状前血管分离保留术在常规斜视手术中的应用研究

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目的：了解水平直肌中睫状前血管的解剖学特点，探究新型睫状血管保留术在常规斜视手术中的应用前景。

方法：征集拟行单眼直肌后徙联合缩短的水平斜视患者，随机分为睫状血管保留组和不保留组。于斜视术中观察并记录内、外直肌中睫状前血管的数量、走行位置、形态等，记录并比较两组患者斜视手术完成所需时间。

结果：内、外直肌中睫状前血管的数量分别为 3.59 ± 2.19 和 3.18 ± 1.56，差别没有统计学意义。睫状前血管在内直肌中的位置较深，平均约距肌止端 6.86 ± 2.54mm 处从肌肉深部穿出，在肌肉浅层或表面走行，睫状前血管在外直肌中位置表浅，走行于肌鞘膜中。血管保留组的血管保留成功率达 100%。平均手术时间在血管保留组为 25.26 ± 1.86min，血管不保留组为 21.59 ± 1.94min，差异有统计学意义。

结论：新型的睫状前血管保留术操作方法简单，有重要的临床意义，可在临床中广泛推广。

The new dissection technique of preservation of anterior ciliary vessels during horizontal strabismus surgery

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OBJECTIVE: To study the anatomic features of anterior ciliary vessels (ACVs) that accompany horizontal rectus muscles, and explore the prospect of the new dissection technique of ACVs preservation during horizontal strabismus surgery.

METHODS: Patients of horizontal strabismus scheduled with monocular rectus recession and resection were grouped into two groups (with or without vessels preserved). During surgeries the amount and location of ACVs were observed and recorded. The required time for operations of the two groups were recorded and compared.

RESULTS: There was no significant difference in the mean number of major ACVs between medial rectus muscles (3.59 ± 2.19) and lateral rectus muscles (3.18 ± 1.56). The ACVs were deeply in the medial rectus muscles, and at distance of 6.86 ± 2.54mm from the insertion, they running along the superficial layer or surface of the muscles. The ACVs always accompanied along the tunica vaginalis of the lateral rectus muscles. The success rate of the ACVs preservation was 100%. There was significant difference in the mean time required for operations between the group with vessels preserved (25.26 ± 1.86 min) and the group of no vessels preserved (21.59 ± 1.94min).

CONCLUSION: The new dissection technique of preservation of anterior ciliary vessels is easy for performance and has the clinical value for generalization.

PU-153

眼球后退综合征的手术疗效分析

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目的：探讨眼球后退综合征（duane retraction syndrome，DRS）的临床特征和手术疗效

方法：对 2011-06/ 2015-12 在我院进行手术的 DRS 患者 13 例 14 眼进行回顾性总结和分析 , 观察 DRS 的分型、临床表现、手术治疗方法及疗效。

结果：选取的患者 13 例 14 眼中男 11 例，女 2 例，均无合并眼部及全身异常。左眼 9 例，右眼 3 例，双眼 1 例；Ⅰ型 7 眼；Ⅱ型 1 眼，Ⅲ型 6 眼；合并异常头位 11 例，合并眼球后退及急性上转、下转 9 例。手术方案根据不同的分型和临床表现进行设计，包括单纯内直肌后徙，单纯外直肌后徙、内外直肌同时后徙、外直肌后徙联合 Y 形劈开术。术后所有患者原在位斜视度 ≤ ± 10 △，4 例异常头位消失，7 例异常头位不同程度的改善。眼球后退和急速上转、下转有 5 例消失，4 例明显改善。同时，眼球运动也不同程度的改善。

结论：DRS 的临床表现在各型表现多样，术前详细检查和合理的手术设计对眼球后退综合征的治疗具有重要意义。

Clinical analysis of surgical effects in patients with Duane Retraction Syndrome

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AIM: To investigate the clinical characteristics and surgical effects in patients with Duane retraction syndrome.

METHODS: 13 patients with DRS during 2011.06-2015.12 were analyzed retrospectively.The data including clinical types and manifestations, surgical methods and outcomes were reviewed and analyzed.

RESULTS: There were 11 male cases and 2 female cases who all had no ocular and systemic anomalies. the left eye were involved in 9 cases, the right eye were involved in 3 cases and 1 case involved in both eyes. 6 cases were type Ⅰ ,1 case was type Ⅱ and 6 cases were type Ⅲ .11 cases had abnormal head posture(AHP),7 cases had the up- or down-shoot phenomenon.The surgical treatment was designed according to subtypes and clinical features which included medial rectus recession, lateral rectus recession, recession of both horizontal rectus muscles and lateral rectus recession combined with Y splitting. After surgery,horizontal deviation was less than ± 10△ in all patients,and AHP disappeared in 4 cases and improved in 7 cases. The up- or down-shoot and global retraction disappeared in 5 cases and improved in 4 cases. Simultaneously, the restriction of ocular motility were improved in all patients.

CONCLUSION: The clinical features of DRS are variant in different types.detailed examination before surgery and reasonable surgical design are important in treatment of patients with DRS

PU-154

闭合性脑外伤所致上斜肌麻痹的手术治疗

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目的：探讨闭合性脑外伤所致上斜肌麻痹的手术治疗。

方法：回顾性分析 18 例闭合性脑外伤所致上斜肌麻痹患者，根据旋转斜视度和垂直斜视度设计手术。

结果：行单眼 Harada—ho 术 5 例，旋转方向过矫 3 例，欠矫 2 例，垂直和水平方向不受影响；行单眼改良 Harada—ho 术 3 例，旋转方向过矫 2 例，欠矫 1 例，垂直和水平方向不受影响；行单眼上斜肌折叠术 6 例，旋转方向过矫 6 例，欠矫 0 例，垂直方向过矫 2 例，欠矫 1 例，水平方向不受影响；行单眼 Harada—ho 术联合另一眼上斜肌折叠术 2 例，旋转方向过矫 2 例，欠矫 0 例，垂直方向过矫 2 例，欠矫 0 例，水平方向不受影响；行双眼 Harada—Ito 术 2 例，旋转方向过矫 2 例，欠矫 0 例，垂直和水平方向不受影响。以上术式旋转方向过矫量或欠矫量 ≤5°，垂直方向过矫量或欠矫量 ≤3°。术后一周 14 例单眼外伤性上斜肌麻痹患者症状消失，4 例双眼外伤性上斜肌麻痹患者症状改善。

结论：闭合性脑外伤所上斜肌麻痹患者需制定个体化的手术方案，手术设计需兼顾旋转斜视和垂直斜视，力求旋转和垂直方向上均解决患者的眼位问题，以改善复视、眩晕等症状。

The surgical treatment of superior oblique palsy by closed brain injury

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OBJECTIVE: To study the surgical treatment of superior oblique palsy by closed brain injury.

METHODS: Data of18cases of superior oblique palsy by closed brain injury were reviewed retrospectively,design operation scheme according to vertical and cyclotorsional deviation.

RESULTS: 5 cases were operated with monocular Harada-Ito procedure，in the rotational direction，overcorrection 3 cases，undercorrection 2 case，no effect in the horizontal and vertical direction．3 cases were operated with monocular improved Harada—Ito procedure，in the rotational direction，overcorrection 2 cases，undercorrection 1 case，no effect in the horizontal and vertical direction ．6 cases were operated with monocular superior oblique muscle tuck procedure，in the rotational direction，overcorrection 6cases，undercorrection 0 case，in the vertical direction，overcorrection 2 cases，undercorrection 1 case，no effect in the horizontal direction．2 cases Were operated with monocular Harada—Ito procedure and superior oblique muscle tuckp rocedure of another eye，in the rotational direction，overcorrection 2 cases，undercorrection 0 case，in the vertical direction，overcorrection 2 cases，undercorrection 0 case，no effect in the horizontal direction．2 case was operated with Harada—Ito procedure in both eyes，inthe rotational direction，overcorrection 2 case，undercorrection 0 case，no effect in the horizontal and vertical direction．In all this type of operation．overcorrection or undercorrection≤50° in the rotational direction，overcorrection or undercorrection≤30° in the vertical direction．After a work，symptoms of 9 cases of monocular traumatic superior oblique palsy disappeared，symptoms of 3 cases of traumatic superior oblique palsy in both eyes reduced．

CONCLUSIONS: Individualized operation scheme should be developed inpatients of superior oblique palsy by closed brain injury, design operation scheme according to vertical and cyclotorsional deviation to solve the eye position problemin the rotational and vertical

direction，and reduce the diplopia and dizziness symptoms.

PU-155

共同性斜视再次手术的术式和手术矫正量的临床观察

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目的：分析共同性斜视过矫或欠矫后，再次手术的术式和手术矫正量。

方法：共同性斜视术后过矫或欠矫计 96 例，男 41 例，女 55 例；平均年龄 21.90 ± 14.70 岁。术前行斜视常规检查，共同性内斜视过矫者 23 例，欠矫者 15 例；共同性外斜视过矫者 28 例，欠矫者 30 例。术式选择主要依据斜视角的大小、远近斜视角的不同、原来的术式及双眼视力等情况而定。

结果：共同性内斜视过矫者：后徙的内直肌行前徙 9 例，矫正量：5.51 ± 2.63 △ /mm；内直肌前徙 + 外直肌后徙 9 例，矫正量：6.25 ± 1.59 △ /mm；内直肌截除 + 外直肌后徙 3 例，矫正量 4.26 ± 1.04 △ /mm；仅行外直肌后徙 2 例，矫正量：4.21 ± 1.91 △ /mm。共同性内斜视欠矫者：行外直肌截除 6 例，矫正量 4.03 ± 0.98 △ /mm；外直肌截除 + 内直肌后徙 6 例，矫正量：6.86 ± 1.32 △ /mm；内直肌后徙 3 例，矫正量：4.33 ± 0.29 △ /mm。共同性外斜视过矫者，行外直肌前徙 16 例，矫正量：5.37 ± 1.56 △ /mm；内直肌后徙 6 例，矫正量：6.29 ± 3.68 △ /mm；外直肌前徙 + 内直肌后徙 5 例，矫正量：5.46 ± 1.78 △ /mm；外直肌截除 1 例，矫正量：5.00 △ /mm。共同性外斜视欠矫者，行内直肌截除 12 例，矫正量 4.47 ± 0.54 △ /mm；行外直肌后徙 + 内直肌截除 16 例，矫正量：5.11 ± 0.75 △ /mm；外直肌后徙 2 例，矫正量：2.65 ± 0.42 △ /mm。

结论：共同性内外斜视过矫者，通常对做过手术的水平肌行加强或 / 和减弱术，其手术矫正量偏大、且不甚稳定。欠矫者，通常对未行手术的水平肌行加强或 / 和减弱术，其手术矫正量同常规量。

To investigate the treatment and the amount of reoperation after undercorrection or overcorrection of concomitant strabismus surgery

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AIM: To investigate the treatment and the amount of reoperation after concomitant strabismus surgery.

METHOD: 96 patient, 41 males and 55 females, aged 21.90 ± 14.70,who were undercorrection or overcorrection after the first concomitant strabismus surgery were enrolled in our study, including 23 esotropia patients who were overcorrection and 15 patients who were undercorrection, 28 exotropia patients who were overcorrection, and 30 patients who were undercorrection. We did routine pratices before surgery. The surgery treatment were depend on degree of strabismus, strabismus of different distances, the original surgery method and visual acuity of both eyes.

RESULT: For esotropia patients who were overcorrection, we did the recessed medial rectus advanced by 5.51 ± 2.63 △ /mm on 9 patients; the recessed medial rectus advanced combined with lateral rectus recession by 6.25 ± 1.59 △ /mm on 9 patients, medial rectus resection combined with medial rectus recession by 4.26 ± 1.04 △ /mm on 3 patients, lateral rectus recession signally by 4.21 ± 1.91 △ /mm on 2 patients. For esotropia patients who were undercorrection, we did lateral rectus resection by 4.03 ± 0.98 △ /mm on 6 patients, lateral rectus resection combined with medial rectus recession by 6.86 ± 1.32 △ /mm on 6 patients, medial rectus recession by 4.33 ± 0.29 △ /mm on 3 patients. For exotropia patients who were overcorrection, lateral rectus advanced by 5.37 ± 1.56 △ /mm on 16 patients, medial rectus recession by 6.29 ± 3.68 △ /mm on 6 patients, lateral rectus advanced combined with medial rectus recession by 5.46 ± 1.78 △ /mm on 5 patients, lateral rectus resection by 5.00 △ /mm on 1 patient. For exotropia patients who were undercorrection, we did medial rectus resection by 4.47 ± 0.54 △ /mm on 12 patients, lateral rectus recession combined with medial rectus resection by 5.11 ± 0.75 △ /mm on 16 patients, lateral rectus recession by 2.65 ± 0.42 △ /mm on 2 patients.

CONCLUSION: For concomitant strabismus patients who were overcorrection, we choose to strengthen and/or weaken the horizontal rectus operated on, the amount tend to be big and unstable. For those who were undercorrection, we choose to strengthen and/or weaken the horizontal rectus didn't operated on, the amount was the same as usual.

PU-156

眼球震颤阻滞综合征的手术疗效分析

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目的：探讨双眼内直肌后退术治疗眼球震颤阻滞综合征的疗效。

方法：12 例眼球震颤阻滞综合征患者行双眼内直肌后退术，并随访一年。

结果：12 例患者中，8 例患者随访满 1 年时眼位保持正位，4 例随访初期眼位保持正位，半年时眼位轻度回退。所有患者眼球震颤症状均无改善。

结论：眼球震颤阻滞综合征患者的内斜视通过双眼内直肌后退术可获得改善，但手术量有待进一步探索。

Operative effect and analysis of Nystagmus blockage syndrome

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OBJECTLVE: To evaluate the effect of binocular medial rectus recess in the treatment oF Nystagruns blockage syndrome.

METHODS: 12 patients with Nystagmus blockage syndrome undergoing recession of binocular medial rectus.

RESULTS: One year after surgery，8 patients kept theireyes straight and 4 patients kept their eyes straight at first half year while regajn some esotropia in the rest time. Syndrome of the nystagmus in all patients were not be cured.

CONCLUSION: The esotropia outlook of Nystagmus blockage syndrome patient can be treated with binocular medial rectus recess . While surgery quantities need more research

PU-157

直肌 1/2 转位术疗效分析

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目的：对直肌 1/2 转位术在斜视手术中的应用进行评价。

方法：对 12 例共同性斜视，24 例麻痹性斜视应用直肌 1/2 转位术的矫正结果进行临床疗效分析。

结果：共同性斜视 12 例，术后正位者 8 例，4 例 ±15 $^{\Delta}$，眼球运动正常。无复视者，术后满意率 100%。完全麻痹性斜视 24 例，术后正位者 19 例，5 例低矫。水平肌麻痹术后运动恢复转动平均 10^{O}。垂直肌麻痹术后运动恢复均为 5^{O}。术前 12 例后天性麻痹性斜视有复视，术后在正前方有限视野内复视消除。先天性者手术前后均无复视。术后满意率 80%。

结论：直肌 1 ／ 2 转位术应用于残余性共同性斜视与完会麻痹性斜视能够获得满意的效果。

Operative effect and analysis of rectus 1/2 transposed procedure

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OBJECTIVE: To estimate rectus 1/2 transposed procedure in strabotomy.

METHODS: cafes of 12 comitant strabismus and cases of 24 ineomitant strabismus were surgeried with rectus 1/2 transposed procedure and the results were analyzed.

RESULTS: After surgery in comitant strabismus the 8 cases were orthotropia and 4 cases were ± 15 $^{\Delta}$. The eyeball move Wags normal；It wag no diplopia；It wags100% contentment. In cases of 24 incomitant strabismus the 19 cases were orthotropia and 5 cases wereundercorrection；The horizontal rectus could move average 10% ;The vertical rectus could move average 5^{O}；Cases of 12 acquired suffer the diplopia were eliminated in some visual field. Congenital suffers were no diplopia preoperation and postopcration. It was 80% contentment.

CONCLUSIONS: Rectus 1/2 transposed procedure alecontentment using in incomitant strabismus and comitant strabismus.

PU-158

成人共同性斜视术后近立体视功能恢复的影响因素

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目的：探讨成人共同性斜视矫正术后近立体视功能恢复的影响因素。

方法：分析 35 例成人患者（21 例外斜视，14 例内斜视），Titmus 立体视图谱查术前近立体视功能均≥400 " 。术后 3 月测近立体视功能等，对患者术后眼位、斜视类型及斜视病程等影响因素进行分析。

结果：22 例术后眼位≤± 8$^{\triangle}$患者，9 例（40.9%）获得立体视，13 例术后斜视度＞ ± 8$^{\triangle}$患者无人获得立体视；术后眼位对立体视功能提高影响明显（$P < 0.05$）。病程＜ 10 年患者术后立体视（60.0%）较病程≥10 年患者术后立体视（20.0%）功能提高不明显（$P > 0.05$）。21 例外斜视患者术后立体视功能（38.1%）较 14 例内斜视患者术后（7.1%）明显提高 ($P < 0.05$)。

结论：成人共同性斜视术后立体视功能仍有可能恢复。术后视功能恢复情况主要取决于术后眼位及斜视类型。

Factors affecting improvement of near stereopsis following strabismus operation in adult concomitant strabismus

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OBJECTIVE: To evaluate the factors affecting improvement of near stereopsis following surgical correction of adult concomitant strabismus .

METHODS: In a prospective study, 35 patients (21 cases of exotropia and 14 cases of esotropia) with concomitant strabismus; near stereoacuity of more than 400 seconds of arc in Titmus tests were enrolled. The patients were aligned by surgery. Postoperative stereopsis testing was performed at 3 months after surgery. The postoperative position of eye, the type of strabismus, course of strabismus and the recovery of visual function post-surgery were analyzed.

RESULTS: 9 cases of 22 patients (40.9%) who had orthotropia($\leq \pm 8^{\triangle}$) gained stereopsis, whereas none of 13 patients who had horizontal heterotropia ($> \pm 8^{\triangle}$,esotropia or exotropia) gained stereopsis Postoperative alignment had influence on improvement of stereopsis ($P < 0.05$). Misalignment of 10 years' duration or longer did not preclude the development of postoperative stereoacuity ($P > 0.05$). There was a statistically insignificant increase in improvement of stereopsis in 21 cases of exotropia (38.1%) compared with 14 cases of esotropia (7.1%) ($P < 0.05$).

CONCLUSION: The stereopsis of adult concomitant strabismus can be reestablished by surgery. Postoperative stereoacuity recovery mainly depends on the postoperative alignment and type of strabismus.

PU-159

间歇性外斜视儿童生存质量与临床特点相关性的研究

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目的：探讨间歇性外斜视患儿及其家长的生存质量水平，并分析生存质量与患儿临床特点的相关性。

方法：观察性研究。使用间歇性外斜视患儿生存质量量表调查了 184 例间歇性外斜视患儿及其家长的生存质量，同时收集患儿斜视度、双眼视功能、斜视控制程度和年龄、性别等资料。

结果：患儿自我评估生存质量与其斜视严重程度相关：生存质量得分低者与更大的视远、视近斜视度（p=0.004）更低的 Newcastle 控制评分 (p=0.001) 有显著相关。家长评估的患儿生存质量与视远斜视度 (p=0.005)、视近斜视度 (p=0.021) 和 Newcastle 斜视控制评分 (p=0.00) 有显著相关。父母生存质量与患儿的视远斜视度 (p=0.025)、视近斜视度 (p=0.01),、Newcastle 斜视控制评分 (p=0.05) 及患儿立体视功能 (p=0.03) 有显著相关。多元线性相关分析显示 Newcastle 斜视控制评分和立体视功能是影响患儿生存质量水平的主要因素。

结论：患儿和家长生存质量与间歇性外斜视的临床特点有密切相关：更低的生存质量得分与更大的斜视度、斜视控制更差、立体视功能异常有关。

Clinical characteristics associated with health-related quality of life in children with intermittent exotropia

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OBJECT: To evaluate the health-related quality of life (HRQOL) in children with intermittent exotropia and their parents and whether it is associated with clinical characteristics.

METHODS: Prospective study. Health-related quality of life of children and their parents was measured using the Intermittent Exotropia Questionnaire (IXTQ). The deviation, stereo function, sensory fusion, and strabismus control scores, as well as demographic data were collected.

RESULTS: Child HRQOL was correlated with clinical severity: lower IXTQ scores were associated with a larger deviation at distance (r=0.217, p=0.004), deviation at near (r=0.219, p=0.004), and poorer Newcastle control scores for home (F=5.39, p=0.001). Proxy child HRQOL was significantly correlated with the deviation at distance (r=0.22, p=0.005), deviation at near (r=0.18, p=0.021), and Newcastle control scores for home (F=7.62, p=0.00). Parent HRQOL was associated with the deviation at distance (r=0.17, p=0.025) and

near (r=0.2, p=0.01), Newcastle control score for office at distance (F=3.05, p=0.05), and stereo function at distance (F=3.56, p=0.03) and at near (F=4.66, p=0.01). Parent HRQOL was correlated with the child HRQOL (r=0.33, p=0.000) and Proxy child HRQOL (r=0.62, p=0.000). The generalized linear model analysis suggested that Newcastle control score and stereo function were the factors associated with child and parent HRQOL.

CONCLUSION: Both the child and their parents' HRQOL correlated with the intermittent exotropia clinical characteristics: larger deviation, poorer control and poor stereo function were associated with lower IXTQ scores. Parent's HRQOL was strongly correlated with the children's HRQOL and Parent Proxy HRQOL.

PU-160

3M 压贴三棱镜对幼儿基本型内斜视的 早期干预作用

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目的：观察 3M 压贴三棱镜在幼儿基本型内斜视早期治疗中的作用

方法：收集幼儿基本型内斜视早期干预治疗患者 12 例。1 岁以后发病，就诊年龄 1-3 岁，排除颅内病变、眼球病理性改变及眼外肌麻痹。1%阿托品眼用凝胶麻痹睫状肌后验光配镜，戴镜 3-6 月斜视度无改善，G-VEP斜视眼幅值明显较主导眼降低者，给予主导眼 10△-35△3M 压贴三棱镜，遮去遮检查眼位正，每 1-2 月复诊观察眼位和视力 (G-VEP)。

结果：观察结果均戴矫正眼镜，去除 3M 压贴三棱镜，观察双眼位、双眼视力（G-VEP）。6 个月眼位、视力恢复 1 例；压贴三棱镜度数逐渐缩小，1 年后眼位、视力恢复 3 例。1 年后弱视眼视力提高，眼位无变化行手术矫正内斜视 8 例

结论：3M 压贴三棱镜对幼儿基本型内斜视早期治疗中弱视眼的视力恢复，双眼视觉建立有一定的干预作用。

A clinical observation of 3M press-on prism during early correction in children with basic esotropia

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OBJECTIVE: To investigate the application and effect of 3M press-on prisms during the early process of treating in the children with basic esotropia.

METHODS: 12 children were enrolled in the early treatment with basic esotropia, aged of 1~3, exclution of intracranial lesions, ocular pathological change and extraocular myoparalysis. These children were optometry and wear concocting glasses by 1% atropine for 3~6 months. The exotropia degree unchanged and the esotropia eye showed a lower value than the dominant eye, we put 10△-35△ 3M press-on prism on the dominant eye to make the strabismus degree completely correct. Strabismus degree and vison (G-VEP) were observed every 1-2 month.

RESULTS: 1 case got completely corrected after 6 months. 3 case recovered after 1 year and the press-on prism degree was continuously decline. 8 case's vision got improved in the amblyopia eyes and the strabismus degree showed unchanged received operation.

CONCLUSION: 3M press-on prism was effective to recover vision of amblyopia and point of stereopsis during the early treatment in children with basic esotropia.

PU-161

伴外展受限的儿童继发性内斜视手术探查分析

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目的：总结儿童伴外展受限的继发性内斜视特点手术探查发现，评价外展受限发生原因。

方法：15 例 17 眼继发性内斜视再次接受手术，评价手术前后外转受限程度，手术中探查发现。

结果：15 例 17 眼继发性内斜视外转受限程度为欠 1-4mm，术前平均（2.70 ± 0.84mm），水平左右转斜视度与正前方斜视度相差平均为：15.64 ± 7.03PD。手术探查：肌肉过量后退，不同程度的粘连综合征，包括肌肉力量薄弱以及内直肌挛缩，部分病例中有未发现肌肉止点异常以及粘连等问题者。术后 1 周外展受限程度平均 1.23 ± 0.87mm，术后 6 个月外展受限程度平均 1.03 ± 0.56mm，水平非共同性为术后 1 周平均差值为 4.17 ± 2.42 PD, 术后 6 个月为 3.94 ± 1.85 PD，术前术后外展受限的程度和术后侧方运动非共同性，差异均有显著统计学意义 $p < 0.01$，4 例术中有粘连患者术后仍存外转受限，包括外直肌完全复位的患者。

结论：外展受限的原因包括外直肌止点后移，不同程度的粘连，再次手术外转受限程度及水平非共同性得到改善，一些外

转受限病例未发现解剖因素的异常，继发性内斜视外转受限是否存在其他的原因需要进一步研究。

PU-162

184 例共同性外斜视的手术疗效分析

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目的：总结共同性外斜视术后眼位的变化情况、手术疗效及可能的影响因素。
方法：对 184 例共同性外斜视患者进行术后随访观察，并对其手术效果进行总结、分析。
结果：184 例共同性外斜视患者术后 1 周发现正位 158 人，正位率 85.86%，术后 1 年随访正位 142 人，正位率 77.17%。
结论：共同性外斜视手术效果与手术设计、患者年龄、屈光状态、斜视的类型、斜视病程、双眼视功能等诸多因素有关。应尽早手术矫正眼位，才能有利于患者建立和恢复双眼视功能。

Operative effect and analysis of 184 cases of concomitant exotropia

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OBJECTIVE: To investigate the changes of eye position and possible influencing factors in concomitant exotropia after surgery.
METHODS: 184 cases of concomitant exotropia were followed postoperation and results were summarized.
RESULTS: 158 cases were orthotropia，accounting 85.86% ，1 week after surgery. 142cases were orthotropia，accounting 77.17% ，1 year follow -up after surgery.
CONCLUSIONS: The effect of concomitant strabismus surgery is related with operation, the patient's age，refractive status, type of strabismus, strabismus course，binocular vision，and many other factors. Surgical correction of eye position as soon as possible is important to the establishment and restoration of binocular vision in patients.

PU-163

垂直斜视导致的假性上睑下垂

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目的：观察假性上睑下垂在垂直斜视患者中的表现特点，探讨手术设计方法和手术矫正效果。
方法：2011 年 4 月到 2016 年 8 月，1311 例斜视手术患者中，垂直斜视者 261 例，其中伴假性上睑下垂者 32 例，男性 16 例，女性 16 例，年龄 8~57 岁，平均 30 岁。全部患者均是高位眼为主导眼，对侧眼表现假性上睑下垂。垂直斜视度 7^{Δ}~60^{Δ}，平均 22^{Δ}。其中，原发性下斜肌亢进者 18 例，CSOP 者 8 例，低位眼 SO 亢进者 2 例，低位眼牵连性因素者 2 例，高位眼 Jampolsky 综合征者 1 例，低位眼 IR 限制者 1 例。
结果：手术方式采用高位眼 IO 转位 14 例，高位眼 IO 断 8 例，对侧眼单独或联合 IR 减弱 4 例，高位眼 IO 后徙 1 例，高位眼 SO 折叠 1 例，高位眼单独或联合 SR 减弱 5 例，低位眼 SO 断腱 2 例，低位眼的 LR 下方牵连组织分离 2 例。32 例中，上睑下垂治愈者 20 例，改善者 10 例，无效者 1 例（低位眼 SO 断腱），过矫者 1 例（SO 折叠导致医源性 Brown，对侧眼睑裂变大）。
结论：垂直斜视伴假性上睑下垂者多见于垂直偏斜中等偏大者（平均 22^{Δ}），以高位眼的原发性 IO 亢进和 CSOP 居多。手术方式以降低高位眼的术式为主，效果良好。

Pseudo-ptosis caused by vertical deviation

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OBJECTIVE: To observe the characteristics of pseudo-ptosis caused by vertical deviation, to discuss the design and the results of surgical correction.
METHODS: From April 2011 to August 2016, among 1311 cases of strabismic surgical patients, we have 261 cases of vertical deviation with 32 cases accompanied by pseudo-ptosis. The number of males and females is 16 respectively with age 8~57 years old, averaged 30. All cases are dominated by hypertropic eyes with the other eyes having pseudo-ptosis. The degree of vertical deviation is 7^{Δ}~60^{Δ} with the average 22^{Δ}。18 cases have primary inferior oblique overaction(with 5 cases accompanied by DVD). 8 cases have congenital superior oblique palsy. 2 cases have superior oblique overaction in the hypotropic eyes. 2 cases have restrictions below the lateral recti in the hypotropic eyes. 1 case has Jampolsky syndrome. 1 case has inferior rectus restriction.

RESULTS: The surgical methods including inferior oblique anterior transposition(14 cases), inferior oblique myectomy(8 cases), inferior recti recession(4 cases), inferior oblique recession(1 case), superior oblique tendon tuck(1 case), superior recti recessions(5 cases), superior oblique tendon resections(2 cases), resolving of the restrictions below the lateral recti(2 cases). Among the 32 cases, 20 cases were cured with pseudo-ptosis, 10 cases were improved, 1 case has on improvement. 1 cases was over-corrected(consecutive Brown pattern after SO tuck).

CONCLUSION: Pseudo-ptosis is commonly occurred in moderate-to-large vertical deviation(average 22^{Δ}). Primary inferior oblique overaction and congenital superior oblique palsy are the two most common causes. Surgery methods aiming to lower the hypertropic eyes are suggested to have better results.

PU-164

垂直斜视矫正术后的眼位反转

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目的：观察垂直斜视矫正术后眼位反转的临床规律及导致眼位反转的危险因素。

方法：2008 年 9 月到 2015 年 11 月垂直斜视矫正术后眼位反转的患者 9 例，男性 5 例，女性 4 例，年龄 4~59 岁。诊断：CSOP 者 5 例（含隐匿型双眼 CSOP 者 2 例），DVD+ 单眼 IO 亢进者 1 例，单纯垂直斜 3 例。

结果：术后垂直眼位反转多出现在术后 1 周~4 个月。因CSOP行高位眼IO转位+对侧眼IR后徙者 4 例：1 例仅下方视野过矫，戴三棱镜，其余三例的 II 期术式分别为 IO 转位 +SR-3、IR 截 3+ 复位、IO 转位 +IR 复位（该例为隐匿型 CSOP）。1 例隐匿型 CSOP，在 IO 转位后半年出现对侧 IO 亢进，予 IO 断。1 例 DVD+ 单眼 IO 亢进者行高位眼 IO 断 +SR-8，II 期行对侧眼 SR-8。3 例单纯垂直斜视患者中，1 例在低位眼 IR-4 后 4 个月出现下方视野过矫，戴三棱镜；1 例行高位眼 SR-8 联合低位眼 IR-3，2 个月后眼位反转伴 IO 亢进，行 IO 转位；1 例因小度数垂直斜视，行 SR-2，三个月后对侧眼高位伴 IO 亢进，行 IO 后徙。

结论：垂直斜视应慎行两条垂直肌联合手术并坚持低矫原则以预防远期过矫。IR 减弱术可能更易导致远期垂直眼位过矫。

The reversal of hypertropia after the surgical correction of vertical deviation

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OBJECTIVE: To observe the characteristics of hypertropia reversal after the surgical correction of vertical deviation and the risk factors for this situation.

METHODS: From September 2008 to November 2015, 9 cases of hypertropia reversal were recorded. 5 cases were males and 4 cases were females with age 8~57 years old. The original diagnosis include 3 cases of unilateral CSOP(2 cases with DVD), 2 cases with latent binocular CSOP, 1case with DVD and uniocular inferior oblique overaction, 3cases with simple vertical deviation. All cases were followed for more than 6 months.

RESULTS: The hypertropia reversals were mostly happened between 1 week and 4 months after surgery. 7 cases received second surgery with the other 2 cases corrected with prism spectacles. The first operations of 4 CSOP cases were inferior oblique anterior transposition(IOAT) plus contralateral inferior rectus recession(IRR). After the hypertropia reversal happened, 1 case has diplopia just at down gaze and corrected with prism. The second operations of other 3 cases included IOAT+superior rectus recession, inferior rectus resection+restoration, IOAT+inferior rectus restoration(re-diagnosed latent CSOP). Another latent CSOP received the first operation of IOAT. After 6 months, hypertropia reversal happened and then received contralateral inferior oblique myectomy. 1 case with DVD and uniocular inferior oblique overaction received uniocular inferior oblique mycetomy plus superior rectus recession. 2 months later, hypertropia reversal happened on the contralateral eye and the superior rectus was recessed. Out of the 3 cases with simple hypertropia, 1 case received the first operation of inferior rectus recession on the hypotropic eye and 4 months later complained with diplopia at down gaze and was corrected with prism. 1 case was first corrected with superior rectus recession on the hypertropic eye combined with inferior rectus recession on the hypotropic eye and 2 months later hypertropia reversal happened with inferior oblique overaction and ultimately corrected with IOAT. 1 case with minor vertical deviation accompanied by abnormal head postre and first received superior rectus recession. 3 months later, hypertropia reversal happened on the contralateral eye with inferior oblique overaction and then corrected with inferior oblique recession.

CONCLUSION: For moderate-to-large vertical deviation, it should be cautioned to operated on two vertical muscles at the same time. Under-correction is always necessary to prevent long-term over-correction. Out of the 9 cases in this group, 6 cases received inferior rectus recession, and it suggests that inferior rectus recession is prior to cause vertical over-correction.

PU-165

86 例Ⅴ型斜视手术疗效分析

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目的：探讨伴有下斜肌功能亢进的Ⅴ型斜视的临床特征及手术效果

方法：对 2005 年 1 月 -2016 年 1 月我院收治的 86 例伴有下斜肌功能亢进的Ⅴ型斜视，行下斜肌减弱联合水平肌手术 , 观察手术前后眼位及斜肌功能的变化。

结果：术后眼位正位者 80 例 (93.02％)，Ⅴ征消失 82 例 (95.34％),23 例 (26.74％) 伴代偿头位者均得到改善,19 例 (22.09％) 患者术后行同时机训练后恢复双眼单视功能。

结论：下斜肌功能亢进是Ⅴ型斜视发病的主要原因，下斜肌减弱术是治疗Ⅴ型斜视有效手术方式。

Operative effect and analysis of 69 cases of V-shaped strabismus

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OBJECTIVE: To investigate the clinical features and results of the operations of the V-shaped strabismus with inferior oblique hyperfunction.

METHODS: 86 cases Ⅴ -shaped strabismus with inferior oblique hyperfunction, admitted to hospital from 2005.1 to 2015.1, were selected to undergo the surgery of inferior oblique weakening the joint horizontal muscle, to observe the changes of eye position before and after surgery and oblique.

RESULTS: Postoperative eye anteroposterior in80 cases (93.02％),the V-sign disappeared in82cases (95.34％), 23 cases (26.74％) with compensatory head position thereof to be improved,19 cases (22.09％) in patients with postoperative machine training to restore binocular vision.

CONCLUSION: The inferior oblique hyperfunction is the main cause of V-shaped strabismus, the surgery of inferior oblique muscle weakening is an effective approach for the treatment of V-shaped strabismus.

PU-166

先天性眼外肌纤维化一家系临床分析及手术治疗

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目的：探讨家族性先天性眼外肌纤维化的临床特点、手术治疗方法及疗效。

方法：对先天性眼外肌纤维化家系成员进行眼部的各项检查包括：视力、眼压、眼底、眼外肌功能、眼眶 CT、双眼 B 超等检查。并对部分患者行斜视矫正术及额肌悬吊术。

结果：该家系眼外肌纤维化发病率为 30.7%。该家系各患者均双眼受累自幼表现为眼球运动障碍、上睑下垂，眼球位于下转位，企图正前方注视时伴有异常辐辏，向前注视抬下颌。随年龄增长病情轻微加重。其他全身系统器官未见异常。经手术治疗，下颌上抬及外观可获得明显改善，眼球运动改善不明显。

结论：该家系具有常染色体显性遗传特征。通过手术治疗可改善头位及外观改。眼球运动无明显改善。

Clinical investigation of the sydrom of congenital fibrosis of exocular muscles a family and surgical treatment.

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OBJECTIVE: To anylyse the clinical of congenital fibrosis of exocular muscles and the methods and effect of surgical treatment.

METHOD: For members of the family take eatch eye examination including:visual acuity ,intraocular pressure ,oculi fundus ,extraocular muscles function ,orbitalCT ,eyes ultrasound and so on.Do surgery for part members of this family,strabismus diorthosis and frontal muscle suspension.

RESULT: The incidence of this genealogy to 37%.All patients are affected both eyes ,congenital eyemovement disorder,ptosis,eye is located below.accompanied by features of abnormal convergence and up underjaw when they want looking right in front.Along with growth condition slightly worse .No abmormal other organs system.The feature of up underjaw and appearance are improved through surgery eyemovement is no better.

CONCLUSIONS: This genealogy has the features of autosomal dominant inheritance. Through surgery the feature of up underjaw and appearance are improved.the eyemovement no improvement.

PU-167

共同性外斜视手术疗效分析

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目的：评估共同性外斜视患者的手术疗效，分析其可能的影响因素。

方法：对我院行外斜视矫正术的 48 例共同性外斜视患者，其中恒定性外斜视 15 例，间歇性外斜视 33 例，进行术后的定期随访观察，并对手术疗效及功能重建进行总结、分析。

结果：48 例共同性外斜视患者术后 1 周正位率 83.26%，术后 1 年正位率 73.66%。术后近立体视均有不同程度的改善，提高率为 70.43%。

结论：手术治疗共同性外斜视有助于眼位和立体视的改善，但术后眼位回退问题受多方面因素影响。

Surgical effect analysis of concomitant exotropia

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OBJECTIVE: To evaluate the surgical effect of concomitant exotropia patients and analyze the possible influencing factors.

METHODS: 48 cases of concomitant exotropia patients with the correction of exotropia in our hospital, which included 15 cases of constant exotropia and 33 cases of intermittent exotropia, were followed postoperation regularly. Then the surgical effect and the function reconstruction were summarized and analyzed.

RESULTS: The orthotropia ratio of 48 cases of concomitant exotropia patients was 83.26% after one week of the surgery, and was 73.66% after one year of the surgery. The postoperative stereopsis was improved in different degree, and the improvement ratio was 70.43%.

CONCLUSIONS The surgical treatment of concomitant exotropia is conducive to improve the eye position and the stereopsis. But the postoperative eye position regression problem is affected by many factors.

PU-168

部分调节性内斜视的临床特征及手术治疗

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目的：探讨儿童部分调节性内斜视的临床特征及手术治疗。

方法：对 68 例部分调节性内斜视戴全矫眼镜半年后，手术治疗残余斜视 , 手术量按戴镜后残余斜视度加戴镜前后斜视度差值的 1 / 3 设计手术量，伴有斜肌功能亢进者行斜肌手术，所有手术量均一次完成。

结果：68 例中 , 术后正位眼 62 例 ,，正位率 91. 17% ; 欠矫 6 例，占 8. 83% ，无过矫者。

结论：儿童部分调节性内斜视当手术条件符合后应尽早手术，术后根据眼位调整眼镜度数。

Clinical characteristics and surgical treatment of partial accommodative esotropia

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OBJECTIVE: To investigate the clinical characteristics and surgical treatment of partial accommodative esotropia of children.

METHODS: 68 cases of partial accommodative esotropia in children wore glasses with full correction for 6 months were enrolled in the study. The residual strabismus was treated by surgery, The surgical volume was calculated by residual strabismus degree after wore glasses plus 1 / 3 of strabismus degree differences between before and after wore glasses. The oblique surgery was performed on patients with oblique muscle hyperactivity . All operations were completed at one time.

RESULTS: Of 68 cases, 62 cases got right position of eyes postoperationly. The right position rate was 91. 17% .6 cases were undercorrected,accounting for 8. 83% , and there was no over correction.

CONCLUSION: The partial accommodative esotropia of the children should be operated in early stage , and the degree of glasses is adjusted according to the position of the eye.

PU-169

双眼不对称 DVD 的临床治疗方法探讨

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目的：垂直分离性斜视是常见的眼部异常，但手术处理却很困难。本文主要对不对称 DVD 的手术处理进行分析和总结。

方法：回顾性临床病例研究。对 16 例 DVD 患者进行回顾性分析，纳入 13 例患者存在视远时双眼不同程度上漂，3 例患者仅表现为单眼上漂，16 例患者伴或不伴水平斜视。6 例患者存在双眼下斜肌亢进，4 例行等量双眼下斜肌转位，2 例行双眼下斜肌不等量切除（与上漂程度相关）；2 例患者单眼下斜肌亢进，行下斜肌切断术；5 例患者双眼上漂不伴有下斜肌亢进，行不等量双眼上直肌后退（上漂程度重眼后退 5-7mm，上漂程度轻眼后退 3.5-5mm）；3 例患者单眼上漂，行单眼上直肌后退术（<5mm）。

结果：16 例患者外观都得到明显改善，术后双眼上转功能并未出现明显受限，未出现上睑退缩等并发症。全部患者术后残余 DVD 第一眼位均 <10 PD。4 例行双眼对称下斜肌转位手术，但术后双眼不对称 DVD 程度仍然存在，但无露白等外观体现。对 5 例行单眼手术患者，术后并未出现对侧眼反转。

结论：在处理非对称 DVD 时，不仅要考虑上漂程度，也要考量双眼下斜肌亢进程度与上漂的关系，尤其是单眼手术，手术量需要相对保守，以防止出现术后对侧眼反转现象。

Diagnosis and surgical treatment of asymmetric dissociated vertical deviation

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OBJECTIVE: Dissociated vertical deviation is kind of common ocular abnormalities, but surgical treatment is difficult. DVD always appears to be asymmetric. In dealing with asymmetric DVD, whether with inferior oblique muscles overaction, treatment is also different. This article mainly evaluates the surgical results for asymmetric dissociated vertical deviation.

METHODS: Retrospective clinical study.13 patients have asymmetric DVD especially at distance,while 3 patients only have unilateral DVD,combined with or without horizontal deviation.4 cases were performed bilateral transpositon of inferior oblique,2 cases were done with asymmetric myectomy of inferior oblique,5 cases who combined without overaction of inferior oblique were done with asymmetric bilateral superior rectucs recession,3 cases were performed with unilateral recesssion of superior rectus.

RESULTS: ALL the cases of vertical deviation have been obviously improved.Anti-elevation does not appears, no retraction of upper eyelids happens as well. Residual vertical deviation is less than 10 PD. Four patients who underwent symmetrical inferior oblique muscle transposition,the degree of asymmetric DVD still exist. In 5 cases for unilateral surgery, contralateral eye drifting does not appears postoperatively.

CONCLUSION: When dealing with asymmetric DVD,choosing safe way for operation is very important.Choosing asymmetric operation, especially the monocular surgery, need relatively conservative, thus could prevent postoperative drifting of contralateral eye.

PU-170

内外直肌后徙联合 Y 型劈开治疗 Duane 眼球后退综合征

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目的：探讨 Duane 眼球后退综合征的临床特征及治疗方法选择

方法：回顾性分析 8 例 Duane 综合征病例治疗过程，探讨手术方案及手术效果。患者有内转时睑裂缩小，外转时睑裂开大特征。根据患者第一眼位有无内斜视、外斜视。内转时有无上下射现象，内转或外转时有无障碍，其受限程度如何，综合分析选择术式，行内直肌或者外直肌后徙，也有的患者同时采用内外直肌后徙，伴上下射的患者同时行外直肌 Y 型劈开，手术采用水平直肌后徙术，不做缩短。

结果：术后眼位佳，头位消失，眼球运动基本同术前。

结论：Duane 眼球后退综合征有头位，第一眼位有斜视，伴有上下射，影响外观可以手术治疗，效果满意。

The internal and external rectus muscle after migration combined therapy with Y type split Duane eye back syndrome

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OBJECTIVE: to study the Duane retraction syndrome clinical features and treatment options

METHODS: a retrospective analysis of 8 cases with Duane syndrome treatment process, operation plan and operation effect are discussed. When patients have converted narrow palpebral fissure, outer eyelid split big features. According to the patient at first glance a esotropia, exotropia. You have no shot up and down dantian, dantian or a barrier-free, outside the extent to which its limited, the comprehensive analysis of selection procedure and inline rectus or external rectus muscle after migration, also some patients after using the internal and external rectus muscle at the same time, patients with shot up and down with x and Y the rectus split type, adopts horizontal rectus surgery after the migration, do not shorten.

RESULTS: postoperative eye, head, eye movement basic with preoperative.

CONCLUSION: Duane retraction syndrome have a head, one eye have strabismus, companion has shot up and down, can affect the appearance of the surgical treatment, the effect is satisfied.

PU-171

局麻下斜视术中调整缝线技巧与疗效观察

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目的：探讨斜视手术最佳方式，提高一次手术成功率。

方法：回顾分析自 2009 年 6 月至 2016 年 6 月间在我院行局麻下斜视手术，术中均采用调整缝线共 2239 斜视患者。其中男 1231 例，女 1008 例，年龄最小者 11 岁 3 个月，最大者 69 岁，外斜 1105 例，内斜 1007 例，上斜视 11 例，下斜 3 例，麻痹性斜视 15 例，二次手术者 98 例。手术方法：采用角膜缘切口打开球结膜，双铲针 6-0 可吸收缝线在距肌肉附着点 2mm 处穿过肌肉圈套锁住肌肉两边，剪断肌肉然后将双铲针在肌肉附着点残端相距 4mm 中央部分穿出，按预期手术量悬背肌肉，并在此位置打一个双圈加一个蝴蝶结暂时固定，结膜瓣开放，这时观察患者眼位。如果眼位不理想，打开蝴蝶结加强或减弱手术量进行调整，直至眼位满意为止。

结果：术后随访 1-24 月，手术成功率 95.5%，（交替遮盖眼球不动或隐斜，欠矫过矫不足 $8^{\triangle}$）。

结论：在术中病人清醒状态下调整缝线，减少了术后再调整的麻烦及患者痛苦，这种方法简便易行，安全可靠有效，可有效降低斜视手术过矫欠矫的发生率，特别适合行二次斜视矫正手术患者。

The effect observation of intraoperative adjustable suture in strabismus surgery under local anesthesia

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OBJECTIVE: To evaluate the best way to improve the success rate of strabismus surgery.

METHODS Retrospective analysis, medical records of the 2239 patients who had intraoperative adjustment surgery under local anesthesia for strabismus in Zhengzhou Second hospital from 2009 to 2016. During the patients 1105 patients had exotropic,1007 patients had esotropia, 11 patients had anoopsia, 3 patients had katotropia, 15 patients had paralytic strabismus.98 patients accepted a second surgery.1 to 24 months postoperative follow-up were completed.

RESULT: the success rate was 95.5%.

CONCLUSIONS: Intraoperative adjustment strabismus surgery under local anesthesia is safe and effective. The postoperative procedure which has high success rate. The rate of overcorrection and reoperation decreased. It is especially suitable for the patient with second strabismus surgery.

PU-172

LASIK 术后视觉训练临床效果的观察

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目的：对 LASIK 术后出现视疲劳症状的患者进行个体化的视觉训练，观察患者视疲劳症状的缓解情况及双眼视功能的改善，探讨视觉训练完善 LASIK 手术的疗效。

方法：收集在本视光门诊行 LASIK 手术矫正近视 6 个月后出现视疲劳症状的患者 120 例，年龄 20~32 岁，等效球镜范围为 -2.00D~-6.00D。对术后患者进行屈光和双眼视功能的检查，根据其调节和辐辏功能的异常，制定个体化的视觉训练方案进行视觉训练。

结果：进行视觉训练后，LASIK 手术后患者视疲劳症状明显缓解，临床症状评分减轻（t=6.15，P<0.05）。术眼调节幅度（t=9.18,P<0.01）、调节灵敏度（t=6.11,P<0.01）、负相对调节（t=2.33,P<0.01）均显著提高，集合近点明显移近（t=1.66,P<0.01)。

结论：通过个体化的视觉功能训练可以改善准分子术后患者视疲劳的症状，使其同时具有良好的视觉质量和双眼视功能，进一步完善手术效果。

Clinical observation of visual training after laser in situ keratomileusis

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OBJECTIVE: To find out the clinical effects of individualized visual training on patients with asthenopia after laser in situ keratomileusis(LASIK).

METHODS: 120 patients aged 20~32 years old with myopia refraction from -2.00D to -6.00D were enrolled in this study, who with asthenopia symptoms after LASIK in the optometry cilinic. Individual visual training were performed according to the measurements of refraction and visual function such as near point(NPC),accommodative facility,negative relative accommodation(NRA),positive relative accommodation(PRA).

RESULTS: After visual training,asthenopia symptoms of patients relieved significantly（t=6.15,P<0.05）. Accommodative amplitude（t=9.18,P<0.01）,accommodative facility（t=6.11,P<0.01）and negative relative accommodation（t=2.33,P<0.01）were significantly increased,near point also became nearer（t=1.66,P<0.01).

CONCLUSION: Eeffective visual training could alleviate visual fatigue symptoms remarkably after LASIK, and both visual quality and binocular vision function improved significantly.

PU-173

斜视矫正手术对间歇性外斜患儿及其父母的健康相关生活质量的影响——术后 6 个月报告

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目的：评估斜视矫正手术对间歇性外斜患儿及其父母的健康相关生活质量（health-related quality of life ， HRQOL）的影响。

方法：这是一项前瞻，随机，平行研究。招募 130 名儿童（8 至 17 岁）间歇性外斜患儿，随机分配至斜视手术组或主动监测非手术组。每位孩子均由父母陪同。分别在入组前和干预 6 个月后使用间歇性外斜调查问卷（IXTQ）中文版评估儿童及其父母的 HRQOL 的变化。IXTQ 分为 3 个部分：儿童自评、父母他评和父母自评。

结果：手术组和主动监测非手术组分别入选 58 名和 55 名患者。入组时不存在显着的组内差异（P> 0.05）。父母亲的性别在入组前或处理 6 个月后对 HRQOL 评分没有显着影响（P> 0.05，多变量分析）。斜视手术显着改善间歇性外斜 HRQOL 的各个评分（P <0.0001，重复测量方差分析）。在主动监测非手术组中入组前与入组后 6 个月的儿童评分没有显着变化（P = 0.10）。然而，相比入组前，入组 6 个月后父母自评以及父母他评分数显著降低（P <0.0001）。

结论：斜视矫正手术能够显着改善间歇性外斜儿童及其父母的 HRQOL。

Effectiveness of corrective strabismus surgery on the health-related quality of life of children with intermittent exotropia and their parents--report from 6 months after surgery

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PURPOSE: To evaluate the feasibility of strabismus surgery in improving the health-related quality of life (HRQOL) of children with intermittent exotropia [X(T)] and their parents.

METHODS: For this prospective, randomized, parallel group study, 130 children (8 to 17 year of age) with X(T) were recruited and randomized to undergo either corrective strabismus surgery or active monitoring without surgery. The time interval of the trial was 6 months. Each child was accompanied by a parent. The HRQOL of the children and their parents was assessed with 3 final derived X(T) questionnaires (IXTQ) (i.e., child, proxy and parent), which were administered at enrollment and 6 months post-intervention. The primary outcome was a change in the IXTQ score after 6 months versus that at enrollment for both groups.

RESULTS: The surgery (n=58) and active monitoring (n=55) groups were analyzed. No significant intra-group differences existed at enrollment (P>0.05). The sex of the reporting parent had no significant influence on the proxy or parental scores at enrollment or at 6 months (P>0.05, multivariate analysis). Strabismus surgery significantly improved all parts of the IXTQ scores (P<0.0001, repeated measures analysis of variance). No significant changes were found for the child scores at 6 months in the active monitoring group (P=0.10). However, the parental and proxy scores were significantly decreased (P<0.0001).

CONCLUSION: Corrective strabismus surgery significantly improved the HRQOL of the children with X(T) and their parents.

PU-174

屈光状态、双眼视和眼球旋转在儿童共同性水平斜视矫正术后再发斜视中的作用

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目的：探讨异常屈光状态、双眼视和眼球旋转的改变在儿童共同性水平斜视矫正术后再发生斜视中的作用。

方法：收集2003年9月至2016年12月于青岛眼科医院行共同性水平斜视手术治疗后再发生斜视的年龄≤14岁儿童共55例。第一次斜视矫正术的术式包括单侧或双侧的水平直肌减弱、联合或不联合水平直肌的缩短、联合或不联合下斜肌断腱术。所有手术为统一术者。同期，术后未发生斜视的患儿作为对照组。术前1天到2周测量患儿的屈光状态、双眼视、眼球旋转情况，术后6个月至10年再次测量以上数据。

结果：继发性外斜视与屈光参差、近视加重、术前轻度远视转变为术后轻度近视、联合下斜肌断腱手术相关。继发性内斜视和内斜视手术后发生的外斜与术后未建立正常的双眼同视功能相关。外斜视术后发生的内斜视与联合下斜肌断腱手术、术前即存在眼球旋转相关。

结论：异常屈光状态、双眼视和异常的眼球旋转能够影响儿童共同性水平斜视矫正术后再发生斜视的几率。

The impact on concomitant horizontal strabismus after operation by refraction state, binocularity and ocular torsion in Children

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PURPOSE: To evaluate the impact on concomitant horizontal strabismus after operation by the changes of refraction state, binocularity and ocular torsion.

METHODS: This is a retrospective analysis of 55 Children aged under 14 years-old conducted from September 2003 to December 2016 in patients who had concomitant horizontal strabismus after operation（unilateral or bilateral recession or monocular recession and/or underwent resection of horizontal muscles with or without disinsertion of the inferior oblique muscle）by a single surgeon. The patients without strabismus after operation conducted in the same calendar year are taken as a control group. Refraction state, binocularity and ocular torsion were obtained at 1 day to 2 weeks preoperative and at 6 months to 10 years postoperative.

RESULTS: Anisometropia, increase in myopic degree, change from low hyperopia to myopia and inferior oblique muscle overreaction preoperative is associated with higher rates of secondary exotropia. Abnormal binocularity postoperative is associated with higher rates of secondary esotropia and consecutive exotropia. Inferior oblique muscle overreaction and ocular torsion preoperative is associated

with higher rates of consecutive esotropia.

CONCLUSIONS: Refraction state, binocularity and ocular torsion can impact the incidence of concomitant horizontal strabismus after operations on children.

PU-175

早期 A 型肉毒毒素注射治疗急性共同性内斜视临床观察

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目的：探讨 A 型肉毒毒素注射对早期急性共同性内斜视进行安全有效治疗的方法。

方法：选取 2015 年 3 月至 2016 年 4 月在我院斜视与小儿眼科就诊的急性共同性内斜视患者 14 例。平均年龄 13 ± 8.89 岁. 平均病程 19.64 ± 16.23 天。治疗前三棱镜 + 遮盖检查内斜视度数平均为 +31 △，远、近距离内斜视角度基本相等。排除中枢神经系统、内分泌系统异常及其它疾病后，在外科显微镜下小切口注射法将肉毒毒素 A 注入内直肌肌腹。

结果：14 例患者随访时间 6 个月。一次注射后 6 个月 14 例眼位正。自觉复视症状消失，病情稳定。其中 7 例注射后 1 周出现轻微外斜视，6 个月内逐渐恢复正位。药物注射后 14 例患者均未发生上睑下垂等并发症。

结论：急性共同性内斜视发病早期行内直肌肉毒杆菌类毒素注射治疗，可以有效地减轻和消除复视和斜视，提高患者的生活质量。

Type a botulinum toxin injection in the treatment of early acute clinical observation on concomitant Esotropia

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OBJECTIVE: Study of botulinum toxin type a injection on acute comitant Esotropia of safe and effective methods of treatment.

METHOD: METHODS in our March 2015 to April 2016 strabismus and Pediatric Ophthalmology treatment of 14 cases of acute concomitant Esotropia. The average age of 13 ± 8.89 years old. average duration of 19.64 ± 16.23 days. Prism and cover before treatment check Esotropia degrees on average+31 △ , far and near point distance Esotropia is essentially equal.

Exclude abnormalities, and other diseases of the central nervous system, endocrine system, surgical microscopes, small incision under the injection of botulinum toxin a injection in the abdominal rectus muscle.

RESULTS: 14 patients were followed up for 6 months. Injection 6 months after the 14 cases. Consciously double vision symptoms and in a stable condition. 1 week after injection of 7 cases of slight strabismus, gradually recover within 6 months. 14 after drug injection did not occur in patients with ptosis and other complications.

CONCLUSION: Ciguatera in the early acute comitant Esotropia fungus toxin injection therapy, can effectively reduce and eliminate diplopia and strabismus, improve the patient's quality of life.

PU-176

间歇性外斜术后应用同视机训练双眼视功能重建的临床体会

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目的：探讨间歇性外斜术后应用同视机训练对双眼视功能变化的疗效。

方法：间歇性外斜矫正手术后病例共 116 例，男 49 例，女 67 例，双眼矫正视力 ≥0.8，斜视度 -20^{Δ} 至 -85^{Δ}，平均斜视度 -50^{Δ}，试验组 66 例术后用同视机做视功能训练，50 例对照组未进行同视机训练。训练组用同视机进行视功能训练，用不同的画片进行闪烁、进与出、捕捉和交替注视训练，每次 20 分钟，每日一次，七天一疗程，共 7 个疗程。疗效评价：Ⅰ级视功能双眼同时视画片：能看见老虎进笼子；Ⅱ级融合功能：能看见重叠的一只猫和蝴蝶；Ⅲ级立体视功能：能看见不同层次的不同图形的画片。

结果：试验组术后 6 个月双眼Ⅰ级视功能 92%，明显高于对照组 70%（$P < 0.005$）；Ⅱ级视功能 90%，明显高于对照组 67%（$P < 0.005$），Ⅲ级视功能 50%，明显高于对照组 23%($P < 0.005$)，差异均有统计学意义。

讨论：间歇性外斜视其融合功能和立体视功能多为异常。本文试验组对间歇性外斜视患者术后应用同视机训练，术后 6 个月，试验组三级视功能恢复比例明显高于对照组。表明间歇性外斜术后应用同视机训练能促使双眼视功能恢复和重建。

Clinical Experiences with Synoptophore in Post-Surgical Visual Function Restore of Intermittent Exotropia

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OBJECT: evaluate the performance of synoptophore in visual function recovery after intermittent exotropia correction procedure

METHOD: Choose 116 receivers of intermittent exotropia correction procedure from May 2013 to May 2015 (47 males and 67 females; age from 5 to 42 with an average of 15; naked or best corrected vision acuity ≧ 0.8; exotropia deviation from -20° to -85° with an average of -50°). The experiment group with 66 cases exercised with synoptophore for 8 courses, while the rest 50 cases were categorized in the control group giving no exercises. Each synoptophore course lasts for 7 days with 20 minutes practice per day. The first course started from the first day after surgery, and the second one started 7 days later after the first one finished. Then the course intervals extended to 14 days from the second course on. Performance evaluation threshold: Level I binocular vision: being able to see tiger into the cage; Level II fusion function: being able to see a cat and a butterfly overlapping; Level III stereopsis function: being able to see different patterns at different perspectives.

OUTCOME: 92% samples in the experiment group achieved Level I after six month exercises which is significantly higher than the 70% in the control group (P<0.005); Level II achieving rate: 90% in the experiment group while 67% in the control group (P<0.005); Level III: 50% against 23% with experiment group significantly better than the control group (P<0.005).

DISCUSSION: As one of the most common strabismus, intermittent exotropia is mainly caused by dysplasia of motion fusion function in cortical center of optic nerve; as a result the ocular position varies with fusion control changes, companied with fusion and stereopsis function abnormity. Patients with intermittent are unusually not be able to attain normal binocular function as the distant stereopsis function was damaged in the very early years. Even though the exotropia can be corrected by surgery, there is still a chance of regression. After the six month's exercises, patients with intermittent exotropia in the experiment group mentioned as mentioned above in this paper had achieve significantly better vision function recover than those in the control group in each of the three vision function level. The experiment confirms that synoptophore exercise is able to assist to restore and rebuild vision function and further maintain and consolidate the level III function after intermittent exotropia surgery. In conclusion, synoptophore exercise facilitates the functional cure of exotropia and prevents its regression.

PU-177

改良 Yokoyama 联合内直肌后徙术治疗高度近视限制性斜视的远期观察

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目的：观察改良 Yokoyama 联合内直肌后徙术治疗高度近视限制性斜视的远期疗效。

方法：回顾性病例研究。收集 2011 年 12 月至 2014 年 6 月间在兰州大学第二医院眼科中心行改良 Yokoyama 联合内直肌后徙术治疗高度近视限制性内下斜视并长期门诊复查病例 5 例(7 眼)。术前术后进行常规眼科检查、斜视度检查、A 超测量眼轴、眼眶 MR、CT 等检查，依据眼外肌和眼球位置的改变、眼球运动情况行受限程度分级。

结果：5 例患者平均随访时间 41 月，5 例 (7 眼) 平均近视 -10.20D，眼轴平均 31.32mm，术前外转及上转均不同程度受限，眼眶 CT 示眼球向肌圆锥颞上方偏位。术后第 1 天术眼眼位均正位 , 眼球外转和上转均能过中线 , 最近一次随访检查眼位均正位 , 眼球外转和上转均能过中线 , 患者的术后眼位及眼球运动保持稳定。

结论：改良 Yokoyama 联合内直肌后徙术治疗高度近视限制性斜视的远期疗效稳定，效果满意。

Long term observation of modified Yokoyama combined with medial rectus recession for treatment of high myopia restrictive strabismus

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OBJECTIVE: Long term efficacy of modified Yokoyama combined with medial rectus recession for treatment of high myopia restrictive strabismus.

METHOD: Retrospective case study,reviewed during a follow-up period from December 2011 to June 2014 in the Eye Center of Lanzhou University Second Hospital underwent modified Yokoyama combined with medial rectus recession for treatment of high myopia restrictive strabismus and long-term outpatient review of 5 cases (7 eyes).Before and after the operation, routine eye examination, strabismus examination, A ultra - Measurement of the eye axis, orbital MR, CT and other tests, according to the extraocular muscle and eye position changes, eye movements, the degree of restricted classification.

RESULTS: 5 patients were followed up for an average of 41 months,5 patients(7 eyes) the average myopia was -10.20D, and the average axial length was 31.32mm,all patients had marked limitation of elevation and abduction.Orbital CT showed the superior temporal position of the eyeball.First days after operation, postoperative eye position was normal, and can turn on adduction over the midline,a recent follow-up examination of eye position was normal, and can turn on adduction over the midline, eye position and eye movements was stable.

CONCLUSION: The long-term efficacy of modified Yokoyama combined with medial rectus recession for treatment of high myopia restrictive strabismus was stable and satisfied.

PU-178

眼性斜颈误诊病例报告

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目的：总结眼性斜颈误诊病例、探讨眼性斜颈产生原因、鉴别方法及不良后果。

方法：回顾性总结 2014 年 1 月至 2016 年 12 月以“歪头视物”就诊于外科后又转至我科室并住院行眼肌手术的 6 位眼性斜颈患者。

结果：均曾就诊于外院外科检查斜颈，均诊断为肌性斜颈，建议行斜颈矫正手术治疗。其中上斜肌麻痹 1 人（9 岁）及眼球震颤 1 人（8 岁）曾行颈部按摩、理疗等保守治疗，无疗效。共有 6 例眼性斜颈病人年龄在 8 岁——22 岁，平均年龄 14.6 岁。其中左眼上斜肌麻痹 4 人、双眼眼球震颤 1 人、右眼眼球后退综合症 1 型 1 人。住院行眼肌手术，术后代偿头位均有改善，改善的程度不等。

结论：引起斜颈的原因是多方面的 , 一旦发现孩子经常歪着头看东西 , 就需要带到医院眼科、外科等科室进行检查 , 临床医生应注意区别先天性肌性斜颈与眼性斜颈，以免因为误诊采取错误的治疗 , 给孩子带来伤害或因漏诊而延误治疗。

The Report of Torticollis Ocularis Misdiagnosed Cases

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OBJECTIVE: Summarize the torticollis ocularis misdiagnosed cases, explore the causes, identification methods and the adverse consequences.

METHODS: A retrospective summary of the 6 patients who tilted their heads to look things diagnosed by the surgical department and transferred to my department, performed eye muscle surgery during January 2014 to December 2014.

RESULTS: The 6 patients all were examined by the surgical department as the muscular torticollis, and they were suggested to have torticollis corrective operation. The 6 patients including a case of superior oblique palsy who is 9 years old, a case of nystagmus who is 8 years old and did the neck massage, physical therapy such kind of conservative treatment without curative effect. The 6 cases of torticollis ocularis patients aged 8-22 years old, with an average age of 14.6 years old. There are 4 patients with left eye on oblique palsy, 1 patients with both eye’s nystagmus, 1patients witheye back syndrome type I. These patients had eye muscle surgery in hospital. The postoperative compensatory head are improved in different degree.

CONCLUSION: The cause of torticollis is various, Once discover the child often tilt his head to look at things, you need to give the child both surgical department and ophthalmology department’s inspection. The clinical doctors should pay attention to the difference between congenital muscular torticollis and torticollis ocularis, in order to avoid misdiagnosis or missed diagnosis harm to children.

PU-179

TAO 致限制性斜视手术方式选择及术后联合眼部用药初探

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目的：探讨 TAO 致限制性斜视手术方式及术后联合眼部用药临床疗效。

方法：回顾 2013 年—2016 年 TAO 致限制性斜视手术患者 29 例，其中男性 12 例、女性 17 例。平均年龄 55 岁。下斜视 16 例、内斜视 8 例、上斜视 5 例，无外斜视。行肌肉松解术 26 例，肌肉后退术 14 例，肌肉断腱术 7 例，肌肉悬吊术 5 例，眶减压术 + 术后择期断腱 3 例。分析发病特点、术式、术后眼部用药。设 A、B 两组，（用药和不用药）平均观察 24 个月。对照手术前后的视力、眼压、复视、代偿头位。评估 A、B 两组是否局部注射激素的疗效。

结果：对照几种术式术后效果无明显差异。A、B 两组对照显示：A 组术后眼部用药组的各指标观察均较 B 组明显提高，有较大差异。

结论：TAO 引起的限制性斜视，50 岁—60 岁发病居多，女性多于男性。下斜视多见，其次为内斜、上斜视，无外斜视。手术方式以肌肉后退为主，对肌肉粘连严重，后退术难以操作，肌肉附着点处断腱也是好的方法之一，对合并眶内、眶尖广泛纤维化，视神经受压明显患者，需先行眶减压术，再择期行肌肉松解术。术后行眼部用药治疗 A 组，视力、眼压、复视和代偿头位改善明显优于术后未进行眼部治疗 B 组。

The choice of the ways of TAO to restrictive strabismus surgery and postoperative joint eye medication

Sujinping

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OBJECTIVE: Discuss TAO caused by restrictive strabismus surgery way and postoperative combination of clinical curative effect.

METHODS: Review from 2013 to 2016,TAO to restrictive strabismus surgery patients 29 cases, analyzing the characteristics of the disease, surgery, postoperative ocular drug use.12 cases are man while 17 cases are women. The average age is 55. Hypotropia 16 cases, esotropia 8 cases, Hypertropia5 cases,no exotropia.Muscle release surgery 26 cases，back muscles surgery 14 cases，Muscle tendon surgery 7 cases，Muscle suspension surgery 5 cases，Orbital decompression joint names of muscle tendon broken 3 cases.Set A and B two groups, drug use and no drug use, observing 24 months on average. Contrast before and after surgery vision, intraocular pressure, diplopia, compensatory head. Evaluation of A and B two groups of curative effectwhether local injections of hormone.

RESULTS: Comparison there was no significant difference in effect of several methods of operation.Comparison shows A, B two groups: group A postoperative eye treatment group the indexes were compared with group B, has a bigger difference.Which group A than group B vision average increased by 3.9 line; Intraocular pressure by an average of 14.20 mmHg; 12 cases of postoperative diplopia disappeared, 1 case with no improvement, 2 cases get better; Compensatory head 12 cases were disappeared in 2 cases.

CONCLUSION: Restrictive strabismus caused by TAO, in the majority with 50-60 years old disease, women more than men.The most common of which the hypotropia, followed by esotropia, strabismus, no exotropia.The characteristics of the strabismus are consistent with the disease.Operation method is given priority to with back muscles.Line for muscle adhesion seriously, which the muscles back surgery is difficultto operate.Collected a tendon muscle attachment points is also a good way.For combined orbital and orbital tip extensive fibrosis, optic nerve compression of patients obviously, must first orbital decompression, line marked muscle release again.Postoperative eye medication treatment group A, visual acuity, intraocular pressure, diplopia and compensatory head to improve the treatment of postoperative make eye is obviously better than group B.

PU-180

视网膜脱离复位术后复视患者 32 例病因探讨及临床治疗

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目的：探讨视网膜脱离复位术后患者出现复视的可能因素及其临床治疗效果

方法：2003 年 1 月 ~2016 年 1 月，收集视网膜脱离复位术后出现复视患者 32 例，其中男性 23 例，女性 9 例；年龄 17~62 岁，平均（32 ± 11.78）岁。其中外伤性视网膜脱离 17 眼，增生型糖尿病性视网膜病变伴牵引性视网膜脱离 8 眼，高度近视视网膜病变 4 眼，病因不明 3 眼。所有患者术前行眼部常规检查，明确巩膜环扎及受伤部位、眼位检查、眼球运动、眼球牵拉试验、同视机检查、马氏杆加三棱镜检查斜视度。患者斜视度数小于 10 △予以配戴压贴三棱镜矫正；大于 10 △行手术治疗。患者手术均由同一术者完成。

结果：32 例复视患者中，斜视度数小于 10 △予以配戴压贴三棱镜矫正 7 人；大于 10 △行斜视矫正术患者 25 人，术后复视得以矫正者 14 人，手术成功概率 56%。

结论：视网膜脱离行巩膜外环扎及垫压治疗的患者中，特别是外伤性视网膜脱离者，除眼外伤因素，又加之术中创伤，导致巩膜表面、眼外肌肉及其支配神经以及筋膜组织受创较为严重，从而在视网膜复位术后形成瘢痕化粘连、组织牵拉等限制眼球运动、出现眼位偏斜及复视的主要病因。术中需仔细分离组织，操作有一定难度，手术成功率较低。

Etiologic analysis and treatment of 32 cases with diplopia after retinal detachment surgery

Peizheng Chen, Wei Chen, Lan Zhang

Shanghai Peace Eye Hospital

AIM: To investigate the clinical causes and therapeutic effect of 32 cases with diplopia after retinal detachment surgery

METHODS: A retrospective review was conducted on 32 patients with diplopia resulting from post-retinal detachment surgery from

January 2003 to January 2016.23 male and 9 female patients came in with a mean age of 32 ± 11.78 years. Of 32 patients enrolled, 17 eyes were traumatic retina detachment,8 eyes were diabetic retinopathy with traction retinal detachment,4 eyes were pathological myopia, and 3 eyes without definite cause. Ophthalmological examinations were performed in all patients, including eye position, eyeball movement and ocular muscle traction test. Synoptophore, Maddox rod and prism test were also used to determine the strabismus degree. Pressing triple prism was used in patients with less than 10 △ ; patients with greater than 10 △ received strabotomy.

RESULT: Among 32 patients with diplopia,7 cases with less than 10 △ corrected with pressing triple prism; 25cases with greater than 10 △ received surgical therapy; 14 cases did not possess diplopia any more after surgery. Operation success rate was 56%.

CONCLUSION: Patients developed diplopia after traumatic retina detachment is due to adhesion of scared Tenon's fascia, episcleral fibrosis and myosynizesis. External-route surgery including sclera buckling and/or encircling could aggravate the tissue contracture, in which increase the operation difficulty.

PU-181

32 例视网膜脱离复位术后复视患者病因探讨及临床治疗

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目的：探讨视网膜脱离复位术后患者出现复视的可能因素及其临床治疗效果

方法：2003 年 1 月 ~2016 年 1 月，收集视网膜脱离复位术后出现复视患者 32 例，其中男性 23 例，女性 9 例；年龄 17~62 岁，平均（32 ± 11.78）岁。其中外伤性视网膜脱离 17 眼，增生型糖尿病性视网膜病变伴牵引性视网膜脱离 8 眼，高度近视视网膜病变 4 眼，病因不明 3 眼。所有患者术前行眼部常规检查，明确巩膜环扎及受伤部位、眼位检查、眼球运动、眼球牵拉试验、同视机检查、马氏杆加三棱镜检查斜视度。患者斜视度数小于 10 △予以配戴压贴三棱镜矫正；大于 10 △行手术治疗。患者手术均由同一术者完成。

结果：32 例复视患者中，斜视度数小于 10 △予以配戴压贴三棱镜矫正 7 人；大于 10 △行斜视矫正术患者 25 人，术后复视得以矫正者 14 人，手术成功概率 56%。

结论：视网膜脱离行巩膜外环扎及垫压治疗的患者中，特别是外伤性视网膜脱离者，除眼外伤因素，又加之术中创伤，导致巩膜表面、眼外肌肉及其支配神经以及筋膜组织受创较为严重，从而在视网膜复位术后形成瘢痕化粘连、组织牵拉等限制眼球运动、出现眼位偏斜及复视的主要病因。术中需仔细分离组织，操作有一定难度，手术成功率较低。

Etiologic analysis and treatment of 32 cases with diplopia after retinal detachment surgery

Peizheng Chen, Wei Chen, Lan Zhang
Shanghai Peace Eye Hospital

AIM: To investigate the clinical causes and therapeutic effect of 32 cases with diplopia resulting from post-retinal detachment surgery

METHODS: A retrospective review was conducted on 32 patients with diplopia resulting from post-retinal detachment surgery collected from January 2003 to January 2016.23 male and 9 female patients came in with a mean age of 32 ± 11.78 years. Of 32 patients enrolled, 17 eyes were traumatic retina detachment,8 eyes were diabetic retinopathy with traction retinal detachment,4 eyes were pathological myopia, and 3 eyes without definite cause. Ophthalmological examinations were performed in all patients, including ocular traumatic site, eye position, eyeball movement and ocular muscle traction test. Synoptophore, Maddox rod and prism c test were also used to determine the strabismus degree. Pressing triple prism was used in patients with less than 10 △ ; patients with greater than 10 △ received strabotomy.

RESULT: Among 32 patients with diplopia,7 cases with less than 10 △ corrected with pressing triple prism; 25cases with greater than 10 △ received surgical therapy; 14 cases did not possess diplopia any more after surgery. Operation success rate was 56%.

CONCLUSION: Patients developed diplopia after traumatic retina detachment is due to adhesion of scared Tenon's fascia, episcleral fibrosis and myosynizesis. External-route surgery including sclera buckling and/or encircling could aggravate the tissue contracture, in which increase the operation difficulty.

PU-182

88 例复视病因分析

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目的：分析复视的常见病因。

方法：对 88 例复视患者的临床资料进行回顾性研究，分析复视的病因及受累神经分布情况。

结果：复视的病因以神经源性疾病为主，其中血管性疾病、颅脑外伤居多，分别占 23.86%、19.93%，受累神经以外展神经麻痹最多见，占 43.86%，其次为动眼神经及滑车神经，分别占 27.40%、26.03%，复合神经占 2.74%。

结论：复视患者病因复杂，必须全面细致检查，探查病因有重要意义。

Causal analysis of 88 cases with diplopia

Leixiuli

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OBJECTIVE: To analyze the common causes of diplopia.

METHOD: A retrospective study for 88 cases with diplopia were discussed for causes of diplopia and the distribution of affected nerves.

RESULTS: Neurogenic diseases were the main reason for diplopia. Among them,vascular disease and craniocerebral trauma were in the majority, and the percentage was 23.86% and 19.93% respectively.Abducens nerve paralysis(43.86%) was the most common affected nerve.Others were the oculomotor nerve paralysis(27.40%), trochlear nerve paralysis(26.03%) and complex nerve paralysis(2.74%).

CONCLUSION: The etiology of patients with diplopia is complex,so overall and careful examinations are necessary.The cause of diplopia must be explore and it has diagnosis significance.

PU-183

上斜肌减弱术在 A 型斜视治疗中的作用

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目的：探讨不同的上斜肌减弱手术方式在 A 型斜视治疗中的作用。

方法：本研究采用回顾性分析收集自 2013 年 1 月至 2016 年 12 月在我院手术的 A 型斜视患者 68 例，其中 A 型内斜视 30 例，A 型外斜视 38 例，所有患者依据上斜肌亢进程度、原位水平斜视度及双眼视觉功能情况行手术治疗。术后随访时间 6 月 ~ 18 月。平均 12 月。

结果：A 型 - 内斜视 30 例，水平斜视度在 20△ ~ 45△之间，上斜肌中度亢进，21 例一期行上斜肌部分肌腱切除术，术后上斜肌功能强消失 17 例（80.9% 17 / 21），4 例上斜肌功能亢进 +1，水平斜视度平均增大 5△；9 例一期行上斜肌断腱术，术后上斜肌亢进均消失，水平斜视度增大 5△ ~ 10△；A 型 - 外斜视 38 例，水平斜视度在 30△ ~ 50△之间，伴上斜肌中重度亢进，16 例一期行上斜肌部分肌腱切除术，术后上斜肌功能亢进消失 13 例（81.2% 13 / 16），3 例上斜肌功能亢进 +1 ~ +2，水平斜视度平均减小 10△；22 例一期行上斜肌断腱术，术后上斜肌功能强消失 20 例，2 例上斜肌仍亢进 +1，水平斜视度平均减小 15△。

结论：两种上斜肌减弱术对伴有上斜肌功能亢进的 A 型斜视治疗均有效，上斜肌断腱术对水平斜视度影响更大。

The Treatment Effect of Weakening Procedures of Superior Oblique Muscle for A-pattern Strabismus

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OBJECTIVE: To investigate the treatment effect of different ways in weakening superior oblique muscle for A-pattern strabismus.

METHODS: This study used A retrospective analysis of collected from January 2013 to December 2016 in our hospital 68 cases of patients with A-pattren strabismus surgery, including 30 cases of A-pattern esotropia and 38 cases A-pattern exotropia, all patients according to the dysfunction of superior oblique muscle ,horizontal deviation,with or without binocular vision in surgical treatment. Follow-up after surgery is 6 ~ 18 months , an average of 12 months.

RESULTS: A-pattern esotropia 30 cases,horizontal strabismus degree between 20△ ~ 45△, with superior oblique muscle moderate disease, 21 cases of first phase portion of oblique muscle tendon resection, postoperative oblique muscle function strong disappear on 17 cases (80.9%, 17/21), 4 cases of superior oblique muscle function + 1, increase the average horizontal strabismus degree 5△; 9 cases of the first phase of line oblique muscle tendon surgery, postoperative on oblique hyperfunction all disappear, horizontal strabismus degree increased 5△ ~ 10△; A-pattern exotropia 38 cases, horizontal strabismus degree between 30△ ~ 50△, with superior oblique muscle moderately severe disease, 16 cases of first phase portion of oblique muscle tendon resection, postoperative oblique muscle function hyperfunction disappeared 13 cases (81.2%, 13/16), 3 cases of superior oblique muscle function + 1 ~ + 2, horizontal strabismus degree average decreased 10△; 22 cases on the oblique muscle tendon surgery, postoperative disappear oblique muscle function in 20 cases, 2 cases of superior oblique muscle still hyperthyroidism + 1, horizontal strabismus degree decreased average 15△.

CONCLUSIONS: Two kinds of superior oblique weakening surgery are effective approach to A-pattern strabismus with superior

oblique overaction treatment. Superior oblique muscle tendon broken technique of horizontal strabismus degree of influence is greater.

PU-184

成人斜视患者术前生存质量的研究

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目的：研究成人斜视患者的健康相关生存质量，分析影响患者生存质量状况的因素。

方法：收集 202 例斜视患者和 110 例眼位正常者，采用中文版生存质量量表（CAS-20）评估患者的术前生存质量，同时记录患者年龄、性别、婚姻、斜视病程、职业等个体因素信息，斜视类型和斜视度、复视与否、弱视与否等斜视特征信息，分析不同个体信息和不同斜视特征对患者术前生存质量的影响

结果：斜视患者量表 CAS-20 得分为 56.8 ± 16.7, 眼位正常组得分为 98.0 ± 4.3，两组有显著差异。斜视患者中伴复视者的视功能维度得分显著低于无复视者；伴弱视的斜视患者的量表得分均显著低于不伴弱视者；水平斜视度超过 25△者的社会心理维度得分低于斜视度小于 25△者；不同偏斜方向的患者的生存质量得分无明显区别。同时患者的个体因素也影响 CAS-20 量表得分，多元回归分析显示年龄、斜视病程和有无伴弱视是影响患者生存质量的主要影响因素。

结论：成人斜视患者健康相关的生存质量明显差于眼位正常人群；年龄、病程和是否伴弱视是影响斜视患者术前生存质量的主要因素

The effects of strabismus on health-related quality of life in adults

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OBJECTIVE: To analyze the health-related quality of life (HRQOL) in adults with strabismus; to identify the factors that affect the quality of life for strabismus patients.

METHODS: In this investigating,two hundred two adults with strabismus and 110 healthy control adults were recruited. Participants were asked to complete the Chinese Adult Strabismus 20 scale (CAS-20) HRQOL, and the following individual information was recorded: type and degree of strabismus, diplopia, age, sex, and marital status. An independent samples t test, Pearson correlation analysis, multiple linear regression analysis and other statistical methods were used to analyze the effects of strabismus on HRQOL in adults based on the CAS-20 score by SPSS.

RESULTS: In the 202 strabismic adults included in this study, median age was 26.9，and 91(45.0%) were males and 111 (55.0%) were females. Eighteen of the 202 patients had diplopia, and 61 had amblyopia. In the 110 healthy adults, median age was 32.0 and 59 (53.6%) were males and 51 (46.40%) were females. The mean CAS-20 score for strabismic adults was 56.8 ± 16.7, while score in the control group was 98.0 ± 4.3 and the difference was significant（t=-35.2，P<0.001). The CAS-20 function score of patients with diplopia was significantly lower than that for patients without diplopia (t=-1.987，P=0.047). The CAS-20 mean scores were all significantly lower in patients with amblyopia (t=-2.122, P=0.004). The psychosocial score of patients with a large horizontal strabismus (>-25 △) was significantly lower than for those with a small horizontal strabismus (<-25 △) (t=2.523，P=0.007). No significant differences were found for the different types of strabismus. Patients' individual factors also affected CAS-20 scale scores, especially age and the course of strabismus which had negative correlations with the HRQOL in strabismic adults. Married people had lower score values than unmarried people (t=2.981，P=0.004). Patients who were students had higher score values（t=-2.084，P=0.038). A multifactor retrospective analysis showed that age and the course of the strabismus, with or without amblyopia, were the main factors affecting the HRQOL for strabismic adults.

CONCLUSIONS: The HRQOL of adults with strabismus is worse than that for healthy adults；The CAS-20 function scores of patients with diplopia or amplyopia are significantly lower than for patients without diplopia; and amblyopia, the course of strabismus, and age are important factors in HRQOL

PU-185

先天性内斜视的临床表现和手术治疗

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目的：了解先天性内斜视的临床特征和手术治疗方法及疗效。

方法：回顾分析 2009 年 10 月至 2015 年 12 月我院斜视住院病人中 188 例先天性内斜视病例的临床资料及治疗结果 所有病例接受三棱镜 眼球运动检查 大龄合作患儿同时行同视机、线状镜等检查 。手术方法以对称性双眼内直肌后退为主，斜视度较大

者同时行一眼外直肌缩短，如果有垂直斜视先行垂直肌肉手术矫正。术后随访时间 6— 48 个月，平均 24 个月。

结果：先天性内斜视多数患者就诊年龄在 1 岁以后 弱视发生率较小，内斜视度较大，多在 40 $^{\Delta}$ —60 $^{\Delta}$ 之间，眼外肌功能多表现为双眼运动时内直肌功能过强。本组资料中 162 例患者手术后达到临床治愈，一次手术临床治愈率 86.17%。

结论：先天性内斜视多为双眼交替性 斜视度较大 需要手术治疗 一旦明确诊断 应尽早手术 可获得满意效果

Clinical features and surgical treatment of congenital esotropia

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OBJECTIVE: To investigate the clinical characteristics and the methods and effect of surgical treatment of congenital esotropia.

METHODS: The clinical data and the results of the treatment of188 inpatients with congenital esotropia in our department from Oct 20009 to Dec 2015 were retrospectively analyzed. All of the patients underwent the examination with three-prism and eye movement test and the examinations with synoptophore and streak retinoscoope were performed on the elder children additionally. The surgical procedures mainly included symmetrical recession of binocular medial recti, and combined shortening of monocular lateral rectus in patient with high degree of strabismus. Vertical muscle operation would be performed firstly on the patient with vertical strabismus. The follow-up period lasted for 6 to 48 months, with the mean of 24 months.

RESULTS: Most of the patients with congenital esotropia when they went to the hospital was more than 1 year old, whose incidence of amblyopia was low while the deviated degrees were high (40^{Δ} -60^{Δ}). The overaction of medial-recti function was commonly seen in these cases. In188 patients, 162 recovered after the surgery with the one-off curative ratio of 86.17%.

CONCLUSIONS: Most of the patients with congenital esotropia was binocular alternation with high deviated degrees. Surgical treatment should be performed early once the diagnosis is confirmed in order to get the satisfying results.

PU-186

直肌后徙联合悬吊缝线术在斜视矫正术后对眼球运动的影响

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目的：观察直肌后徙联合悬吊缝线术在大、中斜视度斜视矫正术中的灵活应用。

方法：29 例水平斜视，双眼 21 例，单眼 8 例，外斜视 25 例，平均斜视度 -91.16 三棱镜；内斜 4 例，平均斜视度 +50.5 三棱镜。采取内、外直肌常规后徙 5MM 或 7MM, 同时联合肌肉悬吊缝线术 , 直肌后徙 + 悬吊总量不超过 13MM。

结果：术后随访 3-12 月，眼位正位，眼球运动无明显受限 , 未见眼球摆动现象，术后反应轻，恢复快。

结论：这种联合手术，操作简便，安全可靠，矫正大、中斜度斜视的眼位满意，可以减少手术直肌条数，或避免双眼手术，术后对眼球运动无影响。

The effect of rectus recession-suspension on ocular motility

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OBJECTIVE: To study the application of rectus recession-suspension for large and medium angle strabismus.

METHODS: Twenty-nine patients underwent rectus recession-suspension for horizontal strabismus, 21 cases had both eyes involvement while 8 had monocular, 25 cases had exotropia(average prism degree -91.16 △), 4cases had esotropia(average prism degree +50.5 △). The patients underwent the surgery of the medial retus or the lateral rectus recession 5mm or 7mm, and adjustable suture strabismus surgery, totally ≤13mm.

RESULTS: The data of the cases were collected in 3-12moths follow-up. All cases achieved alignment, with no disorder of ocular movement and no nystagmus. Postoperative response was light and healing fast.

CONCLUSIONS: Rectus recession-suspension can simply the surgery procedure and avoid more damage for ocular muscle, but had no influences on eye movement. It is the effective and safe surgery method to treat the large and medium angle strabismus.

PU-187

感知觉学习对小角度间歇性外斜视的疗效观察

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目的：观察和探讨感知觉学习对小角度间歇性外斜视患儿的疗效。

方法：收集 32 例小角度间歇性外斜视患儿，行感知觉学习训练 3 个月。训练前后检查斜视度，应用同视机检测 3 级视功能，Titmus 立体视检查图观察近立体视，采用 t 检 验，χ^2 检验对数据进行分析。

结果：训练前 33cm 斜视度为 -15.84 ± 7.14Δ，训练 3 个月后为 -12.81 ± 5.31Δ，差异有统计学意义（t=2.586，P<0. 05）；训练前 6m 斜视度为 -9.18 ± 8.59Δ，训练 3 个月后为 -7.56 ± 5.88Δ，差异无统计学意义（t=1.666，P>0. 05）。训练前 32 例患者均存在二级融合功能，但融合范围小，训练后分开功能变化不大，差异无统计学意义（t=-1.252，P>0. 05）; 辐辏功能较前明显增强，差异有统计学意义（t=-3.954，P<0. 05），训练后融合范围扩大。训练前近立体视≤60″ 的有 17 例，训练后≤60″ 的增加至 24 例，使用同视机检查远立体视，训练前远立体视存在的有 18 例，训练后增至 27 例。

结论：感知觉学习可以改善小角度间歇性外斜视患者的双眼视功能，提高其日常眼位控制。

Efficacy of perceptual leaming for patients with small-angle intermittent exotropia

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OBJECTIVE: To observe and discuss the efficacy of perceptual leaming for patients with small-angle intermittent exotropia.

METHODS: 32 patients with small-angle intermittent exotropia were taken perceptual leaming for 3 months. All patients were checked the strabismus angle，detected the three-level visual fuction with synoptophore，and near stereopsis with Titmus stereogram before traning and 3 months after traning. All data were statistically analyzed by a t test or χ^2test.

RESULTS: The mean 33cm angle of strabismus was -15.84 ± 7.14Δ before training, and after training was -12.81 ± 5.31Δ, the difference was statistically significant（t=2.586，P<0. 05）. The mean 6m angle of strabismus was -9.18 ± 8.59Δ before training, and after training was -7.56 ± 5.88Δ，there was no statistical difference（t=1.666，P>0. 05）. All patients had fusion function before training，but the fusion range was small. After training the divergence had little change, the difference was not statistically significant（t=-1.252，P>0. 05）.But the convergence was increased markedly, the difference was statistically significant（t=-3.954，P<0. 05）, the fusion range was enlarged. There were 17 cases with near stereopsis（≤60″ ）before training and 24 cases after training . There were 18 cases with far stereopsis before training and 27 cases after training.

CONCLUSIONS: Perceptual leaming can improve the binocular visual fuction for patients with small-angle intermittent exotropia，and promote the control of daily eye position.

PU-188

Helveston 综合征 1 例

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目的：Helveston 综合征表现为外斜 A 征、交替性上斜视（DVD）同时合并双眼上斜肌功能亢进，我院治疗 1 例外直肌解剖变异的 Helveston 综合征患者，一次手术获得良好效果，分享其经验及总结。

方法：术中可见：患者双眼外直肌肌止端解剖位变异，上移一个肌止端。实行手术方案为：双眼外直肌后徙术（后徙 6mm）并下移一个肌止端。

结果：术后情况患者术后 2 周眼位：33cm 及 6m 第一眼位基本正位，A 征及 DVD 消失；上斜肌功能恢复正常，患者眼底照相显示右眼内旋及左眼外旋基本消失。

结论：Helveston 综合征目前病因复杂：1. 解剖的异常，2. 屈光的异常与斜视有着明显的关系，3. 遗传因素和神经因素等。Helveston 综合征以往常规的手术方案是双外直肌后徙术联合上斜肌减弱术及上直肌后退术。本例中患者术中可见患者外直肌肌止端附着点变异上移，引起外斜 A 征及假性上斜肌亢进的发生。我们行双眼外直肌恢复正常功能位并行后徙术，术后患者第一眼位正，术后眼底照相内旋改善。随诊 1 月后，外斜及 A 征基本消失。提示本例 Helveston 综合征是由外直肌解剖位置异常造成的。手术应注意探查眼外肌，以减少风险和痛苦。

Cases of helveston syndrome

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PURPOSE: Helveston syndrome with external oblique A syndrome, DVD and Superior oblique muscle function. Recently, case of Helveston syndrome patients through operation to get good results, share experience and summed.

METHODS: Patients with intraoperative visible: lateral rectus muscle , check the anatomical variation, move a muscle check end Implement the procedures for: the eyes of lateral rectus muscle after migration (6 mm) and down a muscle end.

RESULTS: after 2 weeks postoperatively in patients with eye's position: 33 cm and 6 m At first glance is positive, A and DVD disappear; Patients with superior oblique muscle function returned to normal, fundus photography show inward turning in the right eye and left eye out almost disappear.

CONCLUSION: Helveston syndrome causes complicated at present: 1. The anatomic abnormalities, 2. Refractive abnormalities has an obvious relationship with strabismus, 3.genetic factors and neural factors, etc. in this case patients lateral rectus muscle check end up attachment point mutation, External oblique A sign with Pseudo oblique muscle function. We rectus outside line eyes back to normal after the function of a parallel migration, postoperatively, the first thing is, postoperative fundus camera rotation to improve.After 1 month of follow-up, external oblique and A basic disappear.Tip this example Helveston syndrome is caused by external rectus anatomic anomalies. Probe the extraocular muscle surgery should be paid attention to, in order to reduce risk and pain.

PU-189

青年近视人群获得性远距离内斜视

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观察点和设计：复旦大学附属眼耳鼻喉科医院 , 临床观察

方法和实验对象：2015 年 1 月 ~2017 年 2 月连续纳入 31 例患者（年龄 15~42 岁），其主诉远距离持续性或间隙性出现水平同侧复视。检查包括：远和近距离眼位、眼球活动度、融合和辐辏、验光。

结果：远距离内斜 20~ 65 (PD). 近距离内斜 10 ~ 40 PD. 右眼等效球镜度 (SE) -1.25 ~ -8.25 (D)，左眼（SE）-0.375~ -7.50 D. 28 例出现持续性远距离复视，内外转功能均在正常范围。部分患者的外直肌病理报告显示 无明显肌纤维，以胶原组织为主 .

结论：这类后天突发的内斜有其共同特征：在近距离工作密集青年中出现、远距离复视尤明显、且多为近视人群，机制仍不清，可能与长期近距离工作、近视以及肌肉变性有关。

Acquired distance esotropia associated with myopia in young adult

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CONTEXT: Some young adults present acquired progressive esotropia, typically a larger angle for distance than near and they tend to present with an insidious onset of horizontal diplopia at distance. This is usually associated with long-time near work and myopia.

AIMS: To describe the clinical features of acquired progressive esotropia, with typically a larger angle at distance than near, associated with myopia in young adults.

SETTINGS AND DESIGN: Eye-Ent hospital of Fudan Universtiy, clinical study

METHODS AND MATERIALS: Thirty-one consecutive young adults (age range 15-42 years) with constant or intermittent horizontal diplopia at distance were prospectively recruited and assessed from January 2015 to February 2017. Subject refraction, ocular alignment, fusional amplitudes and horizontal eye movements were measured at distance and near.

RESULTS: Distance esotropia varied from 20 to 65 prism diopters (PD). At near, the esotropic deviation ranged from 10 to 40 PD. Spherical equivalents (SE) of the right eye ranged from -1.25 to -8.25 diopters (D) while SE of the left eye ranged from -0.375 to -7.50 D. Twenty -eight of the thirty patients presented with a constant distance diplopia. Horizontal ductions and versions were full in all patients. The pathological report of seven patients who underwent lateral rectus resection showed that there were no muscle fibres, but rather, myofibrils.

CONCLUSIONS: This unusual sub-type of strabismus is a benign entity with slow progression that can occur in young adults with myopia. The cause of this condition is still unknown, and may be related to long-time near-distance work and myopia.

PU-190

后天性进行性限制性斜视手术效果临床观察

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目的：探讨后天性进行性限制斜视的发展过程、病因以及手术疗效。

方法：回顾性系列病例研究。收集 2013 年 9 月至 2015 年 10 月在我院住院行手术治疗的后天性进行性限制性斜视 5 例患者临床资料。记录斜视的进展过程，分别比较患者的原在位垂直以及水平斜视度数，并做长期的随访。

结果：术后 3 例患者正前方原在位较术前改善，患者家属对外观的改善满意，随访结果稳定，1 例患者二次手术术后效果不佳，1 例内斜视患者术后继发外斜视，二次行继发性外斜视矫正手术。手术效果仍需进一步观察。

结论：后天性进行性限制性斜视临床较为罕见，进展速度极快，病因不清，手术操作较为复杂，风险高，术后效果难以预测

Clinical analysis of acquired progressive restrictive strabismus

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OBJECTIVE: To evaluate the process and etiology of progressive restrictive strabismus, and the efficacy of the operation.

METHODS: It was a retrospective case reseries study. We reviewed the records of 5 patients who diagnosed as progressive restrictive strabismus and underwent strabismus surgery in Tianjin Eye Hospital from September 2013 to October 2015..Records the process of the strabismus,vertical and horizontal deviation were analyzed,with a follow-up at least 6 months.

RESULTS: All patients had a obviously improvement in the primary positon.3 patients are satisfied with the improvement of the appearance, and the follow-up results were stable.1 patient had a poor results after the second surgery.Consecutive exotropia developed in one patient.Treatment of consecutive extropia was conducted in the 2th operation. A futher treatment or not is need to observation.

CONCLUSION: Acquired progressive restrictive strabismus were rare, the exact etiology is unknow,surgical operation is relatively complex,the results are difficult to predict.

PU-191

30 例急性共同性内斜视临床特点及病因分析

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目的：分析 30 例急性共同性内斜视的临床特点及病因。

方法：回顾分析 2011 年 11 月至 2016 年 7 月在我院就诊的 30 例急性共同性内斜视患者。所有患者均进行病史分析、眼部详细检查、新斯的明试验、头颅及眼眶 CT 或 MRI。

结果：30 例均无家族遗传史，新斯的明试验均为阴性，1 例患过甲亢，1 例 CT 发现垂体占位性病变伴脑积水，1 例 MRI 发现脱髓鞘病变。发病年龄：5-47 岁，平均 20 岁。屈光状态：正视 1 例，轻度远视 2 例，近视 27 例，平均等效球镜 -4.00D。斜视度：+15$^{\triangle}$- +80$^{\triangle}$，平均：裸眼：5m：(42 ± 21)$^{\triangle}$；33cm：(37 ± 22)$^{\triangle}$；戴镜：5m：(42 ± 22)$^{\triangle}$；33cm：(38 ± 22)$^{\triangle}$。戴镜与裸眼斜视度的差异无统计学意义；看远看近斜视度差异无统计学意义。双眼视功能：11 例有I级同时视功能；7 例有II级融合功能；6 例有立体视功能。立体视：14 例 ≤60″ ；10 例（ ＞ 60″ ，＜ 800″ ）；6 例无立体视。内直肌解剖位置：除 1 例因未手术无法测量外，其余 29 例内直肌止端距角膜缘的距离平均 4.9mm。

结论：急性共同性内斜视的发生与屈光不正、神经系统病变、内直肌解剖位置异常等有关。

Clinical features and etiology of acute acquired comitant esotropia

Caichunyan
Wuhan Aier Eye Hopital

OBJECTIVE: To investigate clinical features and etiology of acute acquired comitant esotropia(AACE).

METHODS: It was a retrospective study. 30 patients with acute comitant esotropia(AACE) were enrolled in this study who went to our clinic from November 2011 to July 2016. All patients underwent a complete medical history, ophthalmologic and orthoptic examinations, neostigmine test , brain and orbital imaging.

RESULTS: Of these 30 cases, none had a family history of strabismus and neostigmine test was negative. 1 case have had hyperthyroidosis. Brain and orbital imaging in 1 case revealed a mass in the pituitary accompanied by hydrocephalus and 1 case revealed demyelin-

ation. Age at onset was 5 to 47 years, mean age was 20 years. 1 case was emmetropic, 2 cases were mild hyperopic, 27 cases were myopic, mean spherical equivalent was -4.00 diopters. The angle of deviation was 15 to 80 prism diopters (PD; average: 42 ± 21PD at far and 37 ± 22PD at near without glasses, 42 ± 22PD at far and 38 ± 22PD at near with glasses).No significant difference of deviation was found between far and near fixation, with and without glasses. 11 cases had simultaneous perception, 7 cases had fusion, 6 cases had stereopsis in the synoptophore. 14 cases had stereoacuity less than 60″ , 10 cases had stereoacuity between 60 to 80″ , and 6 had no stereopsis examined by Titmus stereo test card. The mean anatomic insertion of medial rectus was 4.9mm in 29 cases.

CONCLUSIONS: AACE is associated with refractive errors, neurological diseases and the abnormal anatomical insertion of medial rectus. Neurological disease shouldn't be ignored though uncommon in AACE.

PU-192

儿童日间斜视矫正术恐惧心理的护理干预

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目的：探讨儿童日间斜视矫正术恐惧心理的护理对策，减轻斜视患儿恐惧心理的产生，降低斜视患儿治疗过程中不良情绪的发生率，促使斜视患儿能更好的配合医护人员完成疾病的治疗。

方法：在我院随机抽取 2016 年 2 月到 2017 年 1 月的日间斜视手术患儿共 100 人。将 2016 年 2 月到 7 月的 50 例日间斜视患儿作为对照组。对照组的日间斜视患儿按照常规整体护理模式进行护理。将 2016 年 8 月到 2017 年 1 月的 50 例日间斜视患儿作为试验组。试验组的日间斜视患儿除采取常规整体护理外，还加强患儿和家长的健康宣教，和相应的恐惧心理护理。了解患儿恐惧心理的来源，针对其原因做出相应的护理措施。手术前一日由指定的日间责任护士，带患儿及家属熟悉病区环境。责任护士在进行健康宣讲的同时与患儿进行互动，减轻患儿对医院及医护人员的陌生感和恐惧心理。以游戏的方式对患儿进行双眼纱布遮盖，以适应术后患眼遮盖的不适。

结果：试验组术后当天哭闹及拉扯纱布的情况比对照组少（$p < 0.05$）。

结论：围手术期有效的护理干预能降低日间斜视矫正术患儿的恐惧心理，可以降低日间斜视患儿治疗过程中不良情绪的发生，还可以使日间斜视患儿更好的配合医护人员进行治疗。

Nursing intervention on the children with fear for strabimus surgery

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OBJECTIVE: To explore the effect of nursing intervention on the children who are fear of strabismus day sugery，in order to reduce the children's fear and let them cooperate better and complete the treatment.

METHODS: 100 children with strabismus were randomly selected in our hospital in February 2016 to January 2017. During February to July 2016, 50 cases of strabismus day surgery were chosen to be the control group and the control group was given the conventional pattern of holistic nursing care. During August 2016 to January 2017 50 cases of strabismus day surgery were chosen to be the experimental group. Besides the routine holistic nursing, the experimental group was given additional education health of children and parents, and a corresponding fear of psychological care, such as understanding the source of the children with fear. The day before surgery, the designated nurse showed the children and their families around the ward, which let them familiar with the environment, in order to reduce the children's sense of strangeness and fear of the hospital and the medical staff. The nurse played game with children and mask the children's eyes with gauze, in order to let children adapt to the covered eye discomfort after the operation.

RESULT: The rate of crying and grabbing the gauze after the operation in the experimental group is lower than the control group ($P < 0.05$).

CONCLUSION: Preoperative effective nursing intervention can reduce the fear of children with strabismus surgery and the incidence of bad mood during the treatment of children with strabismus during the day, but also can make the children with strabismus better cooperate with the medical staff.

PU-193

双侧外展神经麻痹治疗一例

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目的：了解双侧外展神经麻痹诊断及治疗

方法：患者，男，47 岁，主因头部外伤 1 年，左眼视物向内偏斜 11 月入院，患者于 1 年前头部外伤，出现一过性昏迷，入

院后自行苏醒并诊断为颅内损伤住院治疗，1 月后逐渐出现左眼视物向内偏斜伴视物重影，无眼红，眼痛及视力下降，于我院诊断为外展神经麻痹并予以药物治疗,3 月后逐渐发现右眼视物向内偏斜，药物治疗后无明显改善，遂门诊以麻痹性内斜视收住院。

结果：分次手术治疗，先于全麻下行双眼上下直肌半转位 + 左眼内直肌后徙术，术后眼位正，两周后眼位回退，4 周后行右眼内直肌后退术，现术后 1 月，眼位正。

结论：双侧外展神经麻痹较为少见，了解病史，诊断明确，必要时分次手术可取得较好疗效。

One of the bilateral abducens palsy

Guiou Zhang
xijing hospital

one of the bilateral abducens palsy

PU-194

Brown 综合征一例

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本文汇报一例 Brown 综合征患者手术疗效。患者，女，37 岁，眼科检查：眼位：角膜映光：L/R15° 。三棱镜 + 交替遮盖：33cm (裸眼同戴镜)：L/R30 △，5m（戴镜）：L/R35 △ 。治疗：于 2016-6-18 在局麻下行右眼上斜肌徙后 + 左眼上直肌徙后。

Brown syndrome: a case report

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This paper reports the effect of surgical of a Brown syndrome patient.The patient ,female,at the age of 37.Examination of the eyes:Hirschberg test：L/R15° 。Prism plus cover test:33cm:L/R30PD，5m:L/R35PD.On June-18-2016,the patient underwent the weaking of inferior oblique muscle in the right eye combined with superior rectus recession of the left eye,Under general anesthesia.

PU-195

情景模拟健康宣教法对成人斜视患者健康生活方式的影响

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目的：探讨基情景模拟健康宣教法对成人斜视患者健康生活方式的影响。

方法：将 2016 年 1-12 月的 200 例成人斜视患者随机分为干预组 100 名和对照组 100 名，实验组采用情景模拟健康宣教法，包括通过实物、场景、视频等模拟方式，将教育内容分解为饮食、用眼方法、术中配合、出院注意事项、术后随访、眼液的存放和使用等观察模拟六个项目，从术前、术中、术后、出院前四个时间段对患者进行教育。对照组采用常规的健康宣教方法。分别对两组患者在出院日晨、出院后 2 周、1 月、3 月，发放问卷，收集资料进行统计分析。

结果：干预组成人斜视患者在出院后 2 周、1 月、3 月随访，问卷收集的住院满意度和术后回访率的得分均高于对照组，差异有统计学意义（$p < 0.05$），在心理情感和社会交往维度上 , 干预组与对照组在术前及术后 2 周的得分无明显差异 ; 干预组在术后 1 月、3 月的得分明显高于对照组 ($P<0.05$ 或 $P<0.01$)。

结论：将情景模拟法植入健康教育中，有助于培养患者健康的生活方式，树立管理疾病的信心和对未来的积极态度，提高生活质量住院满意度及就医依从性，增加患者的随访率。

The effect of healthy education with scene simulation on healthy lifestyle of adult strabismus patients

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OBJECTIVE: To exploring the influence of healthy education with scene simulation on healthy life style of adult strabismus patients.

METHODS: 200 adult strabismic patients were randomly divided into intervention group (n=100) and control group (n= 100) from 2016 1-12 months. In the experimental group, healthy education with scene simulation is included physical, scene, video and other simu-

lation. The contents of education were divided into six items: diet, eye method, intraoperative cooperation, discharge note, postoperative follow-up, eye drops storage and use. The patients were educated in preoperative, intraoperative, postoperative, and pre-hospital discharge, four time periods. Using the easy way to teach patients to understand and master the way to express. Two groups of patients were discharged from the hospital in the morning of the day, and Issue questionnaire about the patients' satisfaction degree, knowledge of strabismus, medical compliance and social adaptability were collected and analyzed 2 weeks, 1 month, 3 months after their discharge.

RESULTS: Adult strabismic patients in the intervention group were followed after 2 weeks ,1 month, 3 months since discharged. The scores of satisfaction and postoperative return visit were higher than those of the control group, and the difference was statistically significant (P< 0.05). There was no significant difference between the intervention group and the control group in 2 weeks before and after surgery. The scores of intervention group after 1 month, 3 months were significantly higher than those in control group (P<0.05 and P<0.01).

CONCLUSION: The scenario simulation method is applied to health education including the knowledge of strabismus and the education of nursing skills for adult strabismic patients. This method helps patients to develop a healthy life style, establish confidence in the management of disease and a positive attitude towards the future and to improve the quality of life of hospital satisfaction and medical compliance. The follow-up rate was increased.

PU-196

急性共同性内斜视的治疗体会

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目的：探讨急性共同性内斜视的有效治疗方法及治疗效果。

方法：回顾分析我院 20013-2016 年收治的 12 例急性共同性内斜视患者的治疗方法及效果。12 例患者追问病史 ,1 例为弱视治疗遮盖优势眼后出现 , 其余 11 例均无明显诱因。所有患者均验光排除屈光对斜视度的影响 , 并行影像学检查排除神经系统方面可能的原因。遮盖后出现斜视的患者解除遮盖 , 其余 11 例患者予配戴压贴三棱镜 , 观察半年后行斜视矫正术。所有患者就诊时和治疗后均通过同时机和 Titmus 图查远近立体视 , 观察其变化。

结果：解除遮盖患者 2 月后映光正位 , 复视消失。11 例手术患者术后 2 周检查 : 映光均正位 , 复视消失。所有患者 Titmus 图检查 :40 ″∽ 100 ″8 例 ,200 ″∽ 400 ″3 例 ,800 ″1 例 ; 同视机检查 :8 例恢复Ⅰ , Ⅱ , Ⅲ级视功能 ,3 例具有Ⅰ , Ⅱ级视功能 , 仅 1 例只具有Ⅰ级视功能 , 远近立体视均比治疗前明显改善 , 随访 1 年斜视无 1 例复发。

结论：急性共同性内斜视患者大多病因不清。通过对 12 例急性共同性内斜视的治疗发现 : 及时配戴压帖三棱镜和斜视稳定后及时手术有助于消除复视 , 重建双眼单视功能 , 预后较好。

Treatment experience of acute concomitant esotropia

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PURPOSE: Toinvestigate the Effective treatment and treatment effect ofacute concomitant esotropia

METHODS: Analyzed the effective treatment and treatment effect of 12 acute concomitant esotropia in our hospital from 2013-2016. Asking the 12 patient's history, we find only one of them is getting sick after cover the dominant eye because of amblyopia, and the other 11 patients have no apparent cause. All the patients exclude the effects of refraction on strabismus angle, and have an imaging examination to exclude the other possible causes of nervous system. We ask the one patient relieving the cover who is with strabismus after the dominant eye, and the others Wearing three prism. Squint correction has been done after observing six months. All patients were checked at the same time machine and Titmus for the stereoscopic vision at the time of diagnosis and treatment and after treatment to observe its change.

RESULTS: After relieving the cover th patient is with reflected light and diplopia disappeared after 2 months. The other 11 patients were examined after operation for 2 weeks, the result shows that all of them with reflected light and diplopia disappeared. Titmus result of 11 patients shows: 40 ″∽ 100 ″,and 3 of them are 200 ″∽ 400 ″,1 of them are 800 ″. Simultaneous inspection shows 8 cases recovered,and have I, II, III, visual function.3 of them have the I, II visual function, and only one has the I visual function. Far and near stereopsis of all the patients were significantly improved than before treatment. No recurrence of strabismus was found in 1 years of follow-up.

CONCLUSIONS: Most of the patients are not clear the reason of the acute concomitant esotropia. Diplopia caused by strabism Will give the patient's life interference and visual function decline. Through the treatment of 12 cases of acute concomitant esotropia we found that wearing the pressure post three prism and timely surgery after strabismus stable to help eliminate diplopia, reconstruction of binocular vision, and have a better prognosis

PU-197

颅脑外伤导致的非典型性“八个半综合征”一例

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目的：探讨外伤所致非典型八个半综合征一例

方法：患者因枕部颅脑外伤致左眼视物向内偏斜伴眼球运动障碍，伤后 10 天接受颅内血肿清除术，术后左眼斜视症状无改善，并逐渐发现左眼睑闭合不全、口角向右偏斜及左眼视力进行性下降。我科诊断为 1、核间性眼肌麻痹；2、左侧侧视中枢合并面神经膝损伤（非典型八个半综合征）；3、双侧视神经萎缩。入院后患者行左眼上、下直肌 1/2 转位 + 内直肌后退术以矫正麻痹性内斜视。

结果：患者术后眼位正

结论：该综合征具有重要的定位诊断价值

Atypical eight-and-a-half syndrome

Guiou Zhang
xijing hospital

Atypical eight-and-a-half syndrome

PU-198

下斜肌减弱术对客观旋转斜视度影响的疗效分析

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目的：探讨双眼下斜肌减弱术对客观旋转度的影响。

方法：对 27 例伴有双眼下斜肌亢进的斜视患者行双眼下斜肌减弱术，其中男 15 例，女 12 例。年龄 3-32 岁，平均年龄 7.89 岁。随诊时间 6-12 个月。

结果：术前右眼旋转斜视度 2-30° ，平均 13.15° ，左眼旋转斜视度 0-29° ，平均 15.11° ；术后右眼旋转度为内旋 4° - 外旋 18° ，平均 6.52° ，平均矫正量 6.63° ，左眼旋转度为内旋 5° - 外旋 22° ，平均 7.11° ，平均矫正量 8.07° 。术前双眼旋转斜视度总和 2-58° ，平均 28.26° ，术后双眼旋转度总和为内旋 9° - 外旋 38° ，平均 13.56° 。术前与术后双眼总旋转度之差为 0-24° ，平均矫正量 14.70° 。术前与术后无论单眼还是双眼旋转度比较，差异均有统计学意义（$P < 0.05$）。本组病人有 13 只眼术前乳斑角外旋＜ 9° ，但双眼下斜肌亢进为 II 度以上，4 只眼术后近期出现内旋，但患者无代偿头位出现，亦无明显主观不适症状。远期内旋消失。

结论：下斜肌减弱术对患者客观旋转斜视的治疗有明确疗效。但眼底客观旋转斜视度的大小不能作为诊断和选择下斜肌减弱术的唯一依据。

analysis of the influence of Inferior oblique muscles weakening for objective rotation degrees of strabismus

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OBJECTIVE: To explore the influence of bilateral inferior oblique muscles weakening for objective roatation degrees.

METHODS: 27 cases with bilateral oblique hyperfunction strabismus were underwent bilateral inferior oblique muscles weakening. Among which were 15 males, 12 females, age ranged from 3 to 32 years, mean age 7.89years. Follow up period ranged from 6 months to 12 months.

RESULTS: Preoperation the rotation degree of strabismus of right eye ranged from 2° to 30° , mean 13.15° , while left eye were ranged from 0° to 29° , mean15.11° . post operation, the rotation of right eye were intorsion at 4° ,extorsion at 18° , mean 6.52° mean correct 6.63° .the rotation of left eye were intorsion at 5° ,extorsion at 22° , mean 6.52° mean correct 6.63° . Preoperation the total amount of bilateral eyes were 2 to 58° ,mean 28.26° .Postoperation the total amount of bilateral eyes were 0 to 24° , mean correct amount were 14.70° .The differences were statistically significant both in lateral eye or bilateral . The angle of disc macular extorsion ＜ 9° ,but hyperfunction of bilateral above two degree. 4 eyes manifest intorsion right after operation, but the patients have no compensatory head posture and obvious subjective sympotoms. Intorsion were disappeared with long term.

CONCLUSION: inferior oblique muscle weakening has postive effect on objective torsional strabismus , but the objective rotation

degrees of fundus can't be the unique basis for diagnosis and select to perform inferior oblique muscles weakening.

PU-199

双下转肌麻痹一例

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目的：双下转肌麻痹是指眼下直肌及上斜肌同时麻痹，其主要表现为第一眼位健眼注视时患眼上飘 , 患眼注视时健眼下斜视合并假性上睑下垂。眼球左下转及右下转均受限 , 常常伴有代偿头位及复视。在临床上较为罕见，近期我院治疗 1 例双下转肌麻痹患儿，一次手术获得良好效果，分享其经验及总结。

方法：本案例中患者入院考虑：1. 双下转肌麻痹（右）2. 交替性外斜视（右）。手术方式：右眼上直肌后徙术（后徙 3mm）+ 双眼外直肌后徙术（双后退 7mm）.

结果：患者术后第一天第一眼位基本正位，右眼右下转及左下转基本到位，患者代偿头为改善。

结论：双下转肌麻痹是临床上罕见的眼垂直运动障碍性疾病，其诊断和治疗复杂，需通过仔细检查眼外肌功能，并积极个体化的手术治疗可获得良好的疗效，眼位偏斜明显矫正，假性上睑下垂和代偿头位获得明显改善，也为提高斜视性弱视眼视力和双眼立体视觉提供了有利基础。

Case of double depression muscle paralysis

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OBJECTIVE: double depression muscle paralysis refers to t inferior rectus muscle and upper oblique muscle at the same time paralysis, the main performance of primary position When the healthy eye fixation above the eye, sick eye fixation when health now strabismus with false ptosis. Limited eyeball turn lower left and lower right turn, often accompanied by compensatory head and diplopia. In the clinical practice is relatively rare, the recent treatment of 1 case of children with double depression muscle paralysis, a surgery to obtain good results, to share our experience and summary.

METHODS: In this case patients admitted to consider: 1. double depression muscle paralysis (OD) 2. alternating exotropia (OD). Surgery: right eye rectus muscle after migration (after migration 3mm) + eyes outside the rectus muscle surgery (double back 7mm).

RESULTS: In the first Postoperative Day , the primary position basic normal , the right eyeball turn lower left and lower right turn basic norma, the patient compensatory head to improve.

CONCLUSION: double depression muscle paralysis is a rare clinical manifestation of vertical malocclusion in the clinic, and its diagnosis and treatment are complicated. It is necessary to check the extraocular muscle function by careful examination, and the individualized surgical treatment can obtain good curative effect. Oblique correction, pseudo-ptosis and compensatory head position was significantly improved, but also to improve strabismic amblyopia vision and binocular vision provides a favorable basis.

PU-200

改良 Yokoyama 术治疗高度近视限制性内下斜视的疗效

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目的：分析改良 Yokoyama 术治疗高度近视眼限制性内下斜视的临床疗效。

方法：回顾性分析高度近视限制性内下斜患者 10 例 (16 眼)，行改良 Yokoyama 术联合内直肌退后术，观察手术前后眼位、眼球运动、影像学的改变，随访 3~8 月。

结果：患者 10 例 (16 只眼)，年龄 60.7 ± 9.74 岁，病史时间 33.5 ± 6.26 年，屈光度 -20.53 ± 12.38D，眼轴长度 32.97 ± 2.46mm。术前眼球运动分级评分水平 -2.75 ± 1.18，垂直 -2.31 ± 1.25。术前水平斜度 124 ± 2.18△，垂直斜度 23 ± 7.19△。术前眼眶 CT 显示上直肌向鼻侧、外直肌向下方明显移位。10 例患者均行上直肌颞侧与外直肌上方 1/2 肌束于肌止端后 12~14mm处联结，内直肌退后 7.21 ± 2.09mm。术后 5 例第一眼位完全正位，术后水平斜度 2.3 ± 4.54△，垂直斜视度 1.0 ± 2.11△。眼球运动评分水平 -0.88 ± 0.72，垂直 -0.63 ± 0.72。眼眶 CT 显示眼球在眼眶内位置正常。

结论：改良 Yokoyama 术联合内直肌退后能有效矫正高度近视限制性内下斜视，恢复眼在眼眶内的解剖位置，明显改善眼球运动功能，临床效果满意。

Clinical effects of modified Yokoyama's surger for high myopic strabismus fixus

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OBJECTIVE: To analyze clinical effects of modified Yokoyama's surger for high myopic strabismus fixus.

METHODS: Retrospective analysis of records of 10 patients (16 eyes) with high myopic strabismus. After undertaken the modified Yokoyama's surger with medial rectus muscle recession, the angle of deviation of primary position, the mobility of the affected eye, and the change of imaging, have been observed and analyzed. Follow-up Examinations from three to eight months have been performed.

RESULTS: The results are obtained and analysed based on 10 patients (16 eyes) with average age 60.7 ± 9.74 years, pathography 33.5 ± 6.26 years, dioptre 20.53 ± 12.38D, and axial length 32.97 ± 2.46mm. Preoperative eye mobility scores were: horizontal mobility -2.75 ± 1.18, vertical mobility -2.31 ± 1.25. Preoperative strabism were: horizontal strabism 124 ± 2.18 △, vertical strabism 23 ± 7.19 △. Preoperative CT scans showed the relocation of superior rectus muscle towards nasal side, and the relocation of extraocular muscles towards down side. The 1/2 muscle fascicle of superior rectus muscle and lateral muscle were united at 12~14mm to the insertion for 10 patients. 9 of them with a total of 14 eyes had recession of medial rectus with average 7.21 ± 2.09mm. One patient both eyes had undertaken medial rectus tenontotomy by another hospital. The postoperative average horizontal strabism is 2.3 ± 4.54 △ (-5 △ ~+10 △), average vertical strabism is 1.0 ± 2.11 △ (0 △ ~5 △). The postoperative eye mobility has improved evidently, with scores of horizontal mobility -0.88 ± 0.72 (-1~-4), vertical mobility -0.63 ± 0.72 (-1~-4). The orbital CT scan indicated that eyeballs were correctly positioned within orbit.

CONCLUSIONS: The modified Yokoyama's surger with medial rectus muscle recession can effectively correct high myopic strabismus fixus, recover eyeball anatomical position, and evidently improve eye mobility. The clinical effects are satisfactory

PU-201

积极的视觉训练对集合不足效果的比较分析

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目的：集合不足是非常常见的双眼视异常，常常伴有一系列的症状，本文主要是回顾 2005 到 2015 年的文献，比较各种非手术的训练方法对集合不足的效果。

方法：文献回顾 2005-2015 年之间在 Medilne 检索到已出版的英文文献，纳入分析对集合不足采用积极视觉训练的文章，主要比较各种方法对集合不足症状的改善（CISS 得分）及集合近点和正融像性集合的改善。

结果：179 文献中经过排除纳入 10 篇文献，在各种积极的视觉训练中，办公室训练伴随家庭作业加强最有效，家庭计算机软件辅助调节聚散训练其次，家庭笔尖推进及办公室安慰剂训练效果最差；在长期疗效的观察中，四种积极训练方法保持非症状的一次为 84.4%，80%，66.7% 和 76.9%。

结论：各种积极的训练方法对集合不足的训练都有效，最有效的是办公室训练伴随家庭作业加强，有必要进行同质化及长期疗效的观察。

The effectiveness of active vision therapy in convergence insufficiency

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OBJECTIVE: Convergence insufficiency is a common binocular vision disorder that is often associated with a variety of symptoms. The aim of this study was to analyze the scientific evidence available on the nonsurgical treatment of convergence insufficiency between 2005-2015, by identifying the types of treatment used and their efficacy.

METHODS: A literature review of reports published from 2005 to 2015 was completed using health science database: MEDLINE. Only those papers analyzing active treatment of Convergence insufficiency were included. After selecting the articles, we combined those outcomes that were documented in each articles. The primary outcome for each article was the improvement of symptoms in convergence insufficiency, which were interpreted by CISS (convergence insufficiency symptoms survey) score. Other outcomes included improvements in NPC (near point of convergence) and PFV (positive fusional vergence).

RESULTS: Of the 179 articles identified, 10 articles were selected for review. The 10 articles that were reviewed suggested that vision therapy can be an effective method for treating convergence insufficiency by eliminating symptoms such as asthenopia and improving NPC and PFV to normal ranges. Among those vision therapy strategies, office based vision therapy(OBVAT) was the most

effective treatment for NPC and PFV improvement, followed by home based computer vergence/accommodative therapy with home reinforcement(HBCVAT), followed by home based pencil push-ups(HBPP). There are two studies about long-term effectiveness for CI patients. The percentage of those who remained asymptomatic in each group was 84.4 %(27/32) for OBVAT, 66.7% (10/15) for HBPP, 80% (8/10) for HBCVAT, and 76.9% (10/13) for OBPT.

CONCLUSION: Various types of vision therapy can be effective in the treatment of convergence insufficiency, even placebo training. The most effective one, however, was office based vision therapy. In the further studies, homogeneous and long term studies are needed to reveal deeper details.

PU-202

集合不足型外斜视合并近视患者经斜视术后与未手术青少年患者近视光度增长率对比分析

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目的：探讨集合不足型外斜视合并近视患者经斜视术后与未手术青少年患者近视光度增长率对比分析。

方法：对照研究集合不足型外斜视合并近视患者经斜视术后与未手术青少年患者 100 例（其中最大年龄者 16 岁，最小年龄者 6 岁），对比观察经斜视术后与未手术青少年患者近视光度增长率，观察期 1 年。

结果：100 例研究患者都严格按照要求规范用眼，除外正常工作学习外未有增加其他近距离用眼时间。50 例经斜视术后患者一年内近视光度增长平均 <75 度，50 例未手术患者一年内近视光度增长平均 >100 度。

结论：集合不足型外斜视合并近视患者经斜视术后与未手术青少年患者近视增长率相比，经斜视手术后患者近视光度增长率明显低于未经手术患者近视光度增长率，斜视手术对集合不足型外斜视合并近视患者的近视光度增长具有明显减低作用。

Comparative analysis of myopia photometric growth rate in postoperative patients with undercorrection of oblique strabismus and myopia

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OBJECT: To investigate the comparison of myopia photometric growth rate in patients with undercurrent exotropia combined with myopia after strabismus and non-operative adolescent patients。

METHODS: A total of 100 patients (the maximum age of 16 years old and the minimum age of 6 years younger) were enrolled in this controlled study of undergraduates with unexplained exotropia and myopia with postoperative strabismus and non-operative adolescent patients .The myopia photometric growth rate was observed in the patients with postoperative strabismus and untreated adolescents for one year.

CONSEQUENCE: 100 cases of patients were using their eyes under the strict specifications of requirements, and no extra time for visual activities besides the normal work and study.50 cases of postoperative patients with strabismus within one year of myopia increased by an average of <75 degrees, 50 cases of non-surgical patients within one year of myopia increased by an average of> 100 degrees.

CONCLUSION: Compared with non-operative adolescent patients with myopia after underwent strabismus surgery, the rate of myopia photoperiod was significantly lower in patients with posterior strabismus than in those without surgery. Strabismus surgery has a significant reduction in patients with undercurrent exotropia compared with patients with myopia photometric.

PU-203

斜视术后结膜切口连续缝合与间断缝合术后患者反应的对比分析

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目的：探讨斜视术后结膜切口连续缝合与间断缝合术后患者反应的对比分析

方法：对照研究斜视术后结膜切口连续缝合与间断缝合术后患者反应的患者 100 例（其中最大年龄者 62 岁，最小年龄者 4 岁），对比观察斜视术后结膜切口连续缝合与间断缝合术后患者反应。

结果：50 例斜视术后结膜切口用 6/0 可吸收缝线连续缝合患者术后第一天流泪，睁眼困难，异物感较重者 33 例，无明显流泪，睁眼困难，异物感者 17 例；50 例斜视术后结膜切口用 6/0 可吸收缝线间断缝合患者术后第一天流泪，睁眼困难，异物感较重者 18 例，无明显流泪，睁眼困难，异物感者 32 例。

结论：斜视术后结膜切口连续缝合比间断缝合术后患者反应更重，但是连续缝合患者术后切口恢复较快，间断缝合患者术后切口恢复偶尔会出现裂开现象。

Contrastive analysis of patient ‘s response to continuous stitching and intermittent suture after strabismus surgery

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OBJECT: To investigate the response of patients to continuous stitching and intermittent septum surgery after strabismus surgery

METHODS: Patients who were treated with continuous suture and intermittent suture reaction being analyzed. A total of 100 patients (the maximum age of 16 years old and the minimum age of 6 years old) who underwent continuous posterior conjunctival incision and intermittent septal surgery were being investigated in this study.

RESULTS: 50 cases of strabismus after conjunctival incision with 6/0 absorbable suture continuous suture. On the first day after surgery, patients began tears, struggle to open their eyes, and 33 cases of them feel uncomfortable within their eyes. At the same time, 17 cases of them felt no obvious tears, struggle to open eyes , and felt uncomfortable within their eyes; 50 cases of strabismus after conjunctival incision with 6/0 absorbable suture interrupted suture. On the first day after surgery, patients began tears, struggle to open their eyes, and 18 cases of them feel uncomfortable within their eyes. At the same time, 32 cases of them felt no obvious tears, struggle to open eyes, and felt uncomfortable within their eyes。

CONCLUSION: After the operation, the continuous suture of the conjunctival incision was severer than that of the interrupted suture, but the postoperative recovery of the patients with continuous suture was faster, besides there was a phenomenon of dehiscence after interrupted suture occasionally.

PU-204

上斜肌延长术与上斜肌断腱术术前术后眼底像变化对比分析

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目的：探讨上斜肌延长术与上斜肌断腱术术前术后眼底像变化对比分析

方法：对照研究上斜肌延长术与上斜肌断腱术术前术后眼底像变化的患者 20 例（其中最大年龄者 46 岁，最小年龄者 15 岁），对比观察上斜肌延长术与上斜肌断腱术术前术后眼底像内旋变化结果。

结果：10 例上斜肌延长术患者术前术后眼底像内旋情况中，8 例明显减轻，几乎无内旋表现，2 例稍微减轻，还有轻度内旋改变；10 例上斜肌断腱术患者术前术后眼底像内旋情况中，7 例明显减轻，几乎无内旋表现，3 例稍微减轻，还有轻度内旋改变。

结论：上斜肌延长术与上斜肌断腱术术前术后眼底像变化暂无明显区别，应扩大样本统计并结合临床多项检查方能探寻其中的变化。

Comparative analysis of the change of fundus before and after oblique muscle extension and superior oblique muscle

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OBJECT: To explore the comparison of the changes of fundus after the operation of superior oblique lengthening and superior oblique muscle.

METHODS: A total of 20 patients (46 years old and 15 years old) were enrolled in the study of oblique muscle extension and oblique muscle transposition. Comparing the results of the maxillary extension and oblique of internal rotation of the fundus before and after operation.

RESULTS: 10 cases of superior oblique lengthening surgery in patients with preoperative and postoperative fundus internal rotation, 8 cases were significantly reduced, almost no internal rotation, 2 cases slightly reduced, there are mild internal rotation changes; 10 cases of oblique muscle Surgery in patients with preoperative and postoperative fundus as the internal rotation of the situation, 7 cases were significantly reduced, almost no internal rotation, 3 cases slightly reduced, there are mild internal rotation changes.

CONCLUSION: There was no significant difference in the changes of fundus before and after the oblique muscle extension and the operation of the superior oblique muscle. The changes of the sample should be expanded and the clinical multiple examination can be used to explore the changes. es slightly reduced, there are mild internal rotation changes.

PU-205

斜视术后矫正视力及散光变化的临床分析

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目的：探讨斜视手术对术眼矫正视力及散光状态的影响 .

方法：我院 2013 年 4 月至 2017 年 1 月行斜视矫正术的 366 例 (540 眼). 根据手术方式不同将术眼分为 4 组 :1 组为一条直肌后退术 (280 眼),2 组为一条直肌后退联合一条直肌截除术 (88 眼),3 组为一条直肌后退联合一条直肌折叠术 (128 眼);4 组为一条直肌后退联合一条斜肌后退术 (44 眼). 术前、术后 1 月及术后 3 月对术眼矫正视力及屈光状态测量并比对分析 . 包括矫正视力、散光度、散光轴向及类型 .

结果：各组内术前、术后 1 月、术后 3 月的矫正视力在统计学上均无差异 (P >0.05); 各组内散光度值术后 1 月、术后 3 月较术前均有增加 , 在统计学上均有显著差异 (P <0.01). 术后 1 月、术后 3 月散光类型的构成比较术前在统计学上有显著差异 (P<0.01), 有散光的比例增加 , 以顺规性散光的增多为主 .

结论：斜视手术对术眼矫正视力并无明显影响，对散光度可能存在一定影响 , 但在临床上并无意义 , 且造成的散光大部分是顺规性散光 , 可以通过戴镜矫正获得良好的视觉效果 , 不足以影响斜视手术效果及术后功能恢复 .

Strabismus surgery clinical analysis of corrected visual acuity and astigmatism

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OBJECTIVE: to explore the strabismus surgery of eye corrected visual acuity and astigmatism operation state. The influence of methods between April 2013 and January 2017 lines of strabismus diorthosis 366 cases (540 eyes). According to different operation methods eye surgery can be divided into 4 groups: group 1 for a rectus recession (280 eyes), two groups for a joint a rectus muscle rectus recession excision surgery (88 eyes), 3 groups for a rectus recession in combination with a folding technique (128 eyes) of rectus muscle; Four groups for a rectus recession in combination with an oblique muscle back surgery (44 eyes) and postoperative preoperative and postoperative 1 month of march eye corrected visual acuity and refraction survey and comparative analysis. Including vision correction, photometric, optical axis and types. The results between groups within the preoperative and postoperative 1 month, 3 months after operation, the corrected visual acuity was no difference in statistics (P > 0.05); Groups scattered luminosity values within 1 month after operation, postoperative march compared with preoperative have increased in both statistically significant differences (P < 0.01). The postoperative 1 month, the constitution of the postoperative astigmatism types in March, compared preoperative were statistically significant differences (P < 0.01), increase the proportion of astigmatism, mainly suitable rules of astigmatism increased.

CONCLUSION: strabismus surgery of eye vision correction and has no obvious influence, may have a certain influence on scattered luminosity, but clinically and meaningless, and the astigmatism is most suitable rules astigmatism, can get a good visual effect by wearing lens correction, not enough to affect the effect of strabismus surgery and postoperative functional recovery.

PU-206

儿童间歇性外斜视术后假性过矫 1 例

谢淑丽
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患儿，男,5 岁，主因“左眼间断外斜视物 1 年”就诊，眼科检查：视力：右眼 0.5，左眼 0.5，眼位：映光:-15° ，可正位，主视眼：右眼，交替遮盖：双眼外→正，运动正常，三棱镜 + 交替遮盖：33cm -50?，6m -50?，双眼前节、眼底正常。于全麻下行“左眼外直肌后退 5mm，内直肌缩短 5mm”，术后对症治疗。术后第一天查：眼位映光 +15° ，交替遮盖双眼内→正，三菱镜 + 交替遮盖：33cm +25?，6m +25?，给予左眼包盖 3 天，右眼包盖 1 天，充分打破双眼融合。一周复查：眼位映光 +5° ，交替遮盖双眼内→正，三棱镜 + 交替遮盖：33cm +10?，6m +10?，继续遮盖左右眼（3:1）。1 月复查：视力：右眼 0.5，左眼 0.5，眼位正位，交替遮盖双眼不动，眼球运动正常。

讨论：由于儿童的调节力较强，可能会引起较强的集合，术前需要较强的集合来维持正位，术后早期患儿调节集合不能放松，所以出现早期过矫，等充分放松以后，患儿眼位恢复正位。 对于间歇性外斜视术前检查，准确测量斜视度数，正确的手术设计是手术成功的关键。即便早期出现过矫，给予恰当处理，打破融合，均能在短期内恢复正位 .

1 case of intermittent exotropia surgery pseudo correctionover Children

Shuli Xie
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Children, male, 5 years old, cause intermittent exotropia content 1 year left eye, eye exam: vision: 0.5 in the right eye, left eye 0.5, eye location: the reflected light: 15 °, can is a, the main eye: eye, alternate cover: - > is outside eyes, eye movement is normal, mitsubishi mirror + cover: alternately as 33 cm - 50 delta, as 6 m - 50 delta, slit lamp examination and fundus examination: eyes are no exception. Perfect relevant inspection, in general anesthesia downlink "left eye rectus back 5 mm, outside medial rectus muscle shortening 5 mm", postoperative local anti-inflammatory symptomatic treatment.First day after check: eye blink + 15 ° and cover in the eyes - are alternately, mitsubishi mirror + cover: alternately as 33 cm + 25 delta, as 6 m + 25 delta, give the left eye bag cover three days, in the right eye bag cover 1 day, fully broken eyes.A week review: eye blink + 5 °, cover the eyes inside - are alternately, mitsubishi mirror + alternately covering: as 33 cm + 10 delta, as 6 m + 10 delta, continue to cover around eyes (3:1).January review: vision: 0.5 in the right eye, left eye, 0.5 eye reflected light, alternate cover eyes, eye movement is normal.

DISCUSSION: ten-fold increase is stronger, because children may cause strong collection, preoperative need to maintain strong collection is, children with early postoperative regulation set can not relax, so in the early days, masking after fully relaxed, such as children with eye is a recovery.For intermittent exotropia preoperative examination, accurate measuring the strabismus degree, correct operation design is the key to successful operation.Even appeared early pose, to give appropriate treatment, break the fusion, can in the short term is a recovery.

PU-207

情景模拟法在斜视全麻幼儿围手术期的应用

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目的：探讨情景模拟体验在幼儿斜视患者围手术期的应用效果。

方法：将斜视患儿 260 例分对照组和观察组，对照组采用常规护理进行术前护理；观察组采用情景模拟在患儿术前通过游戏的形式，使家长陪伴患儿感受黑暗的世界，护士酌情给予鼓励和安慰。

结果：统计数据显示，通过术前情景模拟体验的患儿，可以避免在术日撕扯眼部敷料以及哭闹不止等现象。

结论：情景模拟体验有利于防止患儿术日撕扯眼部无菌敷料，哭闹不止；有利于患儿围手术期的安全管理。

Application of scenario simulation in the perioperative period of children with strabismus

Honghua Yin
Daping Hospital of Chongqing

OBJECTIVE: to investigate the scenario simulation experience in the application effect of perioperative infant strabismus patients.

METHODS: 260 cases of children with strabismus will be divided into control group and observation group, the control group received routine nursing care of preoperative nursing; the observation group with scenario simulation in the form of games in children before operation, so that parents accompany children to feel the world of darkness, the nurse to give appropriate encouragement and comfort. The results of statistics show that the preoperative simulation experience in children, can be avoided in the operation on the tearing phenomenon and crying eye dressing.

CONCLUSION: situational experience is conducive to prevent postoperative ocular tear on aseptic dressing, crying; conducive to the safety management of perioperation.

PU-208

护理干预应用于成人斜视患者围手术期效果的观察

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目的：为了加强成人斜视患者手术的高效性、安全性和质量，观察其应用于围手术期的效果。

方法：将 2015 年和 2016 年两年的成人斜视患者分为两组，2015 年的 856 名成人斜视患者为应用前，分为 A 组，2016 年的成人斜视患者 968 名为应用后，分为 B 组，B 组在整个围手术期给予护理干预，应用 SAS 评分量表评分、医护人员术中监测指标进行比较。

结果：B 组患者在整个围手术期（术前、术中、术后）配合情况、生理以及心里上舒适度均高于 A 组，两组差别有统计学意

义（P ＜ 0.05）。

结论：护理干预可有效的应用于成人斜视患者围手术期，改善患者的身心舒适度，增加其对手术应激的积极应对，保障了手术的效率和质量。

Observation of nursing intervention in adult strabismus patients in the perioperative period effect

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OBJECTIVE: In order to improve the efficiency, safety and quality of the operation of the adult strabismus patients, the effect of the operation was observed.

METHODS: 2015 and 2016 two years of adult strabismus patients were divided into two groups, 856 adults with strabismus for 2015 before application, divided into A group, in 2016 968 for adult strabismus patients after application, divided into B group, B group were given nursing intervention in the perioperative period, using SAS scores the score of medical staff, intraoperative monitoring indicators were compared. The results B group patients in the perioperative period (preoperative, intraoperative, postoperative) with the situation, physical and mental comfort were higher than the A group, the difference between the two groups was statistically significant (P < 0.05)

CONCLUSION: Nursing intervention can be effectively used in the perioperative period of adult strabismus patients, improve the patient's physical and mental comfort, increase the positive response to surgical stress, and ensure the efficiency and quality

PU-209

后天性外展神经全麻痹的手术治疗

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目的：探讨后天性外展神经全麻痹的手术方法与效果。

方法：通过对我院 2011-2016 年间 18 例（18 眼）后天性外展神经全麻痹采用内直肌后徙联合 Jensen 直肌联结术的病例进行分析。

结果：外展神经全麻痹 18 例术后内斜视明显矫正，复视症状，代偿头位明显改善，外展功能得到部分恢复。17 例（17 眼）例随访 6 个月 -3 年，眼位无明显变化，疗效稳定。

结论：内直肌后徙联合 Jensen 直肌联结术是治疗外展神经全麻痹的有效方法。

Surgical treatment of acquired abducens paralysis

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OBJECTIVE: To investigate the effect of rectus conjoint surpery on acquired abducens paralysis.

METHODS: The clinical data of 18 casas(18 eyes) with acquired abducens paralysis undergone medial rectus recession plus Jensen rectus conjoint surgery during 2011 to 2016 were retrospective analyzed.

RESULTS: Estropia of 18 cases were corrected significantly,the symptom of diplomia and compensatory head posture were improvement, abduction function was partially recovered .After 6 month to 3 years follow up of 17eyes,the eyes position kept stable and no obvious change occurred.

CONCLUSION: medial rectus recession plus Jensen rectus conjoint surgery is one effective treatment for acquired abducens paralysis.

PU-210

双眼外直肌后徙术和单眼外直肌后徙内直肌缩短术治疗间歇性外斜视的疗效分析

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目的：比较双眼外直肌后徙术与单眼外直肌后徙内直肌缩短术治疗间歇性外斜视的疗效分析 .

方法：研究对象为 2014 年至 2016 年在我院进行手术治疗的间歇性外斜视患者 , 其中 48 行双眼外直肌后徙术 ,38 行单眼外直肌后徙内直肌缩短术 . 采用三棱镜加交替遮盖法测量患儿戴镜注视 6 m 及 33 cm 第一眼位斜视度 . 分析两组术后 1d、1 个月、6 个月、12 个月及末次随访时的情况 . 记录并分析影响手术成功率的因素 .

结果：术后两组手术成功率差异均无统计学意义 (均为 P ＞ 0.05), 术后 1 个月开始 , 两组手术成功率均不断降低双眼外直肌后徙术组术后 1d 到术后 1 年外斜漂移量为 7.9 $^{\triangle}$ ± 5.1 $^{\triangle}$, 单眼外直肌后徙内直肌缩短术组为 12.5 $^{\triangle}$ ± 8.3 $^{\triangle}$ (P ＜ 0.01).

结论：双眼外直肌后徙术与单眼外直肌后徙内直肌缩短术治疗间歇性外斜视，随随访时间增加 . 两种术式对间歇性外斜视外斜回退的影响明显不同 , 单眼外直肌后徙内直肌缩短术术后短期（1 到 7 天）可能过矫但是远期能引起更多的外斜漂移量，证实了间歇性外斜视眼外肌本体感受器结构发生了异常改变，应尽量避免眼外肌截除术，因后者更 易引起本感受器存在部位组织结构紊乱和丢失，从而影响临床效果 .

PU-211

成人外斜视术后眼位及双眼视功能的影响因素

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目的：研究探讨成人外斜视术后眼位及双眼视功能的相关影响因素，为术后恢复的患儿眼位及双眼视功能提供一定的治疗依据。

方法：选取于我院眼科住院诊治的 56 例行外斜视矫正术的患者（年龄 18-32 岁，平均年龄 22.6 岁）（间歇性 35 例，恒定性 21 例），收集其相关临床资料并术后回访 1 年，分析其影响术后眼位及双眼视功能的相关因素，包括：发病年龄、斜视类型、手术年龄、就诊年龄、手术前远立体视功能、手术前近立体视功能、手术后眼位等。

结果：斜视类型与术后眼位的正位率及术后远、近立体视功能的恢复密切相关，有显著性差异（P ＜ 0.05）；术前远立体视功能及近立体视功能分别是影响术后远立体视功能及近立体视功能的主要因素，有显著性差异（P ＜ 0.05）。

结论：成人行外斜视术的术前远立体视功能、近立体视功能及斜视类型是影响术后眼位及双眼功能的主要影响因素，为术后恢复的患者眼位及双眼视功能提供一定的治疗依据，值得临床上进一步应用推广。

Factors affecting the eye position and binocular visual function in adults after strabismus surgery

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OBJECTIVE: To study explore the eye position and binocular visual function in adults after strabismus surgery related factors, for postoperative recovery in adults with eye position and binocular visual function provides a basis for treatment.

METHODS: In ophthalmology department of our hospital to hospital treatment of 56 cases of external strabismus surgery in adults, the clinical data and operation was collected after visit 1 year, the eye position and binocular visual function in the effect after surgery related factors analysis, including: before the age of onset, type of strabismus, operative age, age at diagnosis, surgery far stereo visual function, operation before the near stereopsis function after surgery, ocular and other. The types of strabismus and postoperative eye position positive rate and operation after far, binocular visual function recovery of closely related, there was significant difference (P < 0.05); preoperative far stereo visual function and near stereo visual function are affecting postoperative distant stereoscopic vision function, and near stereoscopic visual function of main factors, there are significant differences (P < 0.05).

CONCLUSION: Adults exotropia surgery preoperative far stereo visual function, near stereo visual function and the type of strabismus is affecting postoperative eye position and function of the main influencing factors, for postoperative recovery in adults with eye position and binocular visual function provides a basis for treatment, worth clinical further popularization and application.

PU-212

先天性双上转肌麻痹的临床特点和手术疗效观察

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探讨：先天性双上转肌麻痹的临床表现和不同手术方式的疗效。

回顾性分析：我院眼科 2008 年 1 月至 2016 年 11 月期间收治的 17 例先天性双上转肌麻痹的病例，对其临床特征、手术方式及效果进行总结。

17 例患者中男性 10 例，女性 4 例，年龄 5 ~ 40 岁，均为自幼患病，单眼受累，麻痹眼均存在上睑下垂，其中假性上睑下垂 15 例、真性和混合性上睑下垂各 2 例，12 例存在代偿头位，下颏上举，5 例合并有外斜视。根据斜视度大小和眼球运动情况而选择不同的手术方式，其中 4 例接受患眼上斜肌断腱联合下直肌后徙术，9 例接受患眼上斜肌断腱、下直肌后徙联合健眼下斜肌断腱术,4 例接受患眼上斜肌断腱、下直肌后退联合健眼上直肌后徙术；4 例同期行外斜矫正术；3 例Ⅱ期行上睑下垂矫正术，1 例Ⅱ期行外斜矫正术。术后 15 例眼位正或基本正位，所有患者术后随着眼位偏斜的改善，假性上睑下垂和代偿头位均有明显

好转或消失。

先天性双上转肌麻痹是临床较为少见的一种眼球运动障碍性疾病，可能是神经肌肉发育不良所致。手术应根据每位患者垂直和水平眼位偏斜度、注视眼别、麻痹肌的拮抗肌及协同肌的代偿性改变等，合理设计相应的手术方式。

The Clinical Manifestations and Effect of Different Surgical Treatments of Congenital Double Elevator Palsy

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OBJECTIVE: To investigate the clinical manifestations and the effect of different surgical treatments of congenital double elevator palsy.

METHOD: 17 patients diagnosed with double elevator palsy, which admitted from Jan 2008 to Nov 2016 in out hospital were analyzed retrospectively.We summarized the clinical features，surgical treatments and effects of them.

RESULT: Of the 17 patients,10 were male,7 were female,aged between 5 to 40 years old,all congenital, unilateral and combined with ptosis of paralytic eye. 15 patients with pseudoptosis, 2 with true ptosis and 2 with mixed ptosis,12 with head posture of mandibular raised, 5 with exotropia. Surgical treatment were chosen by strabismus and motor functions:4 patients undergo disinsertion of superior oblique muscle combined with inferior rectus recession of paralytic eye,9 patients undergo disinsertion of superior oblique muscle, inferior rectus recession of paralytic eye and combined with disinsertion of inferior oblique muscle of the healthy eye, 4 patients undergo disinsertion of superior oblique muscle, inferior rectus recession of paralytic eye and combined with superior rectus recession of the healthy eye. 4 patients undergo exotropia operation. 3 patient undergo correction of ptosis secondly,1 patient undergo exotropia operation secondly.15 patients got normal eye position after operation, as postoperative eye position improved, pseudoptosis and head posture improved evidently or disappeared.

CONCLUSION: Congenital double elevator palsy is rare clinical disorder of ocular motility, probably by neuromuscular dysplasia. Surgery should be based on vertical and horizontal strabismus, fixation eye and compensatory change of antagonism and synergist of paralytic eye.

PU-213

两种上斜肌减弱术治疗上斜肌亢进的疗效对比

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目的：对比两种上斜肌减弱术对于治疗上斜肌亢进的疗效。

方法：对伴有双眼上斜肌亢进的 A 型斜视的患者 50 例，其中 32 例行断腱术，18 例行延长术，有水平斜肌同时行水平直肌矫正术，观察手术前后原在位及 A 征的改善状况，观察两种手术方式对上斜肌 Δ 功能的改善作用。

结果：（ 1 ）断腱组：术前 A 征平均（ 27.62 ± 3.20 ）Δ，术后平均（ 3.53 ± 2.10 ）Δ，术前及术后差异有统计学意义 .(p<0.05)；（ 2 ）延长组：术前 A 征平均（ 18.56 ± 2.20 ）Δ，术后平均（ 2.47 ± 1.83 ）Δ，术前及术后差异有统计学意义。

结论：两种手术方式对伴有上斜肌亢进的A型斜视的矫正均有效；由于延长术可适当定量，对于轻中度上斜肌亢进的患者，治疗效果优于断腱术。

The efficacy comparison of two kinds of superior oblique weakening procedures for superior oblique overaction

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OBJECTIVE: To contrast the curative effect of two kinds of superior oblique weakening procedures for superior oblique overaction.

METHODS: 50 patients with superior oblique overaction and A-pattern strabismus were treated.32 patients were treated with superior oblique tenotomy(ST),18 with superior oblique tendon-expander technique (SE).Pre- and post-operative eye position, correction of A-pattern and superior oblique muscle function were evaluated.

RESULTS:（ 1 ）ST Mean A-pattern was (27.62 ± 3.20)Δ before and（ 3.53 ± 2.10 ）Δafter the operation. There were significant differences. (p<0.05)（ 2 ）SE Mean A-pattern was (18.56 ± 2.20) Δbefore and（ 2.47 ± 1.83 ）Δafter the operation. There were significant differences. (p<0.05) .

CONCLUSIONS: Two kinds of superior oblique weakening surgery are effective approach to A-pattern strabismus with the superior oblique overaction. The oblique tendon-expander technique is comparatively quantitative. For the treatment of mild-to–moderate superior

oblique overfunction, superior oblique tendon-expander technique is better than tenectomy.

PU-214

39 例先天性特发性水平眼球震颤手术疗效临床分析

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目的：观察分析先天性特发水平眼球震颤的手术治疗效果。

方法：收集 2015 年 1 月至 2017 年 1 月的先天性特发性水平眼球震颤手术患者共 39 例，一个中间带不伴斜视者 27 例，采用 Parks 法；伴斜视者 10 例，采用 Parks 法 + 斜视矫正；双向中间带者 2 例，其中双眼矫正视力均 ≤0.2 者 3 例。

结果：39 例患者中 33 例患者术后原在位双眼同时视视力提高 2 行以上；30 例患者头位面转角完全矫正，8 例存在 15° 以内的面转角，1 例面转角改善不明显。其中不伴斜视的 27 例患者中完全矫正 24 例，欠矫 3 例；伴斜视者 7 例眼位正位，1 例欠矫，代偿头位 1 例欠矫 10° ，2 例过矫 5° ；双向中间带的 2 例患者 1 例头位改善，1 例改善不明显。

结论：对于先天性水平性冲动型眼球震颤患者，充分的术前检查和合理的手术设计可以提高视力，改善头位，同时矫正斜视；对于有双向中间带的患者，手术效果具有不确定性，手术应慎重。

Evaluate the effect of Surgical treatment of 39 idiopathic congenital nystagmus patients

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OBJECTIVE: To evaluate and analyze the effect of surgery on the patients with idiopathic congenital nystagmus types.

METHODS: A retrospective study of 39 patients with congenital horizontal nystagmus was reviewed. 27 cases without horizontal strabismus underwent Parks method , 10 cases with horizontal strabismus underwent Parks with horizontal strabismus correction and 2 cases with opposite bidirectional neutral zone underwent Parks method with prism testing.

RESULTS: In 33 cases , visual acuity of all the main eyes were improved over 2 to 5 lines than before. The compensatory head posture in24 patients was disappeared and improvement was seen in 3 patients in only nystagmus group. The compensatory head posture in 7 patients was disappeared and improvement was seen in 3 patients in nystagmus group with horizontal strabismus. 1 patient improved and 1 patient was ineffective in opposite bidirectional neutral zone group . No complication was present in all patients.

CONCLUSIONS: The surgical method of idiopathic congenital nystagmus is determined according to the different nystagmus type. The operation correction of genital nystagmu can not only improve visual acuity, but also correct compensatory head posture and strabismus. Majority can acquire the good curative effect after surgery.

PU-215

三条水平直肌手术治疗大角度外斜视的临床观察

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目的：对于三条水平直肌手术治疗大角度共同性外斜视临床效果观察，并对手术相关影响因素进行分析。

方法：对 27 例大角度共同性外斜视（斜视度数大于 70PD）进行回顾性分析研究。所有患者均由同一手术医师进行双眼外直肌后退手术及非主导眼内直肌加强手术。术中外直肌退后量为 7-10mm，内直肌缩短量为 5-8mm。术后根据眼位情况分为满意（内斜视 1-8PD，正位或外斜视 1-10PD），改善（外斜视 11-20PD）及不满意（内斜视大于 8PD，或外斜视大于 20PD）。患者随访至少 1 年，比较术后 6 周及最后一次随访的效果。

结果：患者的中位年龄为 37 岁（19 到 62 岁）。所有患者均行 3 条水平直肌手术，术前外斜角度平均为看近 104PD ± 13.8P，看远 107PD ± 12.9PD。术后 6 周复查，96% 患者效果满意。最后一次复查，外斜视角度为看近 10PD ± 8PD，看远 14PD ± 7PD，其中 95% 患者表现为外斜视或外隐斜。术后一年成功率为 78%。术后过矫 10 到 15PD 的患者远期效果较好 (P=0.021).

结论：对于大角度的外斜视，三条水平直肌的手术能够较好改善外斜眼位，术后轻度过矫的患者远期效果较好。

Motor outcomes of three horizontal muscles surgery for large-angle exodeviation

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PURPOSE: To evaluate clinical outcomes of three horizontal muscles surgery for treatment of large-angle exodeviation and analyze

related factors that may influence the success rate of surgery .

Design: A retrospective analytical study.

METHODS: METHODS: A total of 27 patients with large-angle concomitant exotropia (>70 prism diopters (PD)) were reviewed. All patients underwent bilateral lateral rectus recession and a medial rectus resection in the nondominant eye by the same surgeon. Surgery consisted of lateral rectus muscle recession of 7-10mm and medial rectus muscle resection of 5-8mm. Motor outcomes were categorized as successful (esotropia 1-8 PD, orthotropia or exotropia 1-10 PD), acceptable (exotropia 11-20 PD), and poor (esotropia >8 PD or exotropia >20 PD). Patients were followed-up at least 1 year, who were evaluated at both short-term (6 weeks) and final follow-up visits.

RESULTS: Median age was 37 years (range: 19 to 62 years). All patients underwent 3 horizontal muscles surgery. The mean preoperative near exodeviation was 104PD ± 13.8PD; the mean preoperative distance exodeviation was 107PD ± 12.9PD. At the short-term (6 weeks) follow-up, 26 of 27 (96%) patients were successfully aligned. At last follow-up examination, the mean postoperative exodeviation was 10PD ± 8PD at near and 14PD ± 7PD at distance, in which 95% patients had exotropic drift. The success rate of surgery was 78% after at least 1 year follow-up. Initial postoperative overcorrection of 10PD to 15PD had high rate to get successful motor outcomes, which was found to correlate with the success rate at the last follow-up (P=0.021).

CONCLUSIONS: In the case cohort, three horizontal muscles surgery for large-angle exodeviation can achieve successfully alignment and motor outcomes. Initial overcorrection can improve long-term success.

PU-216

下斜肌肌腹锚定术治疗小角度上斜视伴下斜肌亢进

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目的：探讨下斜肌肌腹锚定术治疗下斜肌亢进伴随小角度上斜视的临床疗效

方法：回顾分析笔者经治的 10 例上斜肌麻痹患者，10 例患者均行下斜肌肌腹锚定术治疗。下斜肌肌腹锚定术是将下斜肌肌腹整体缝扎，并缝合固定于下直肌颞侧止端后 5mm 处巩膜。所有患者第一眼位为小角度上斜视（＜ 5PD），伴随下斜肌亢进。采用配对 t 检验分别比较患者术前、术后第一眼位和侧方垂直斜视度。分别比较术前和术后下斜肌亢进程度，以及头倾或面转代偿头位。平均随访 6 个月以上。

结果：所有患者第一眼位正位，9 例患者下斜肌亢进消失，另外 1 例下斜肌亢进从 +3 改善至 +1。9 例有代偿头位的患者（5 例头倾，4 例面转）均获得矫正。第一眼位上斜视从术前 3.30 ± 0.48PD 矫正至术后 0.10 ± 0.32PD，侧方垂直斜视从术前 8.60 ± 2.63PD 矫正至术后 0.60 ± 1.35PD，下斜肌亢进程度从术前 +1.5 ± 0.71 改善至术后 +0.10 ± 0.31。所有患者均对手术结果满意。

结论：下斜肌肌腹锚定术有效的缓解了轻度至中度下斜肌亢进，同时可矫正第一眼位小角度上斜视。这一新术式对于第一眼位垂直斜视度小，同时合并下斜肌亢进的患者是有效治疗方法之一。

Inferior Oblique Muscle Belly Anchoring for Small Angle Hypertropia with Inferior Oblique Muscle Overaction

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PURPOSE: To evaluate the efficacy of belly anchoring of the inferior oblique muscle (IO) in treating inferior oblique muscle overaction (IOOA) with small angle hypertropia.

METHODS: The medical records of 10 SOP patients who underwent belly anchoring of the inferior oblique muscle were reviewed. Belly anchoring of the IO consisted of suturing the entire body of the muscle to the sclera 5 mm posterior to the temporal insertion of the inferior rectus muscle. All patients had small hypertropias (< 5PD) in the primary gaze position with associated IOOA. Pre- and postoperative deviations both in primary and lateral gaze were analyzed by paired t test. Degree of IOOA and face turn or head tilt position was evaluated pre and post-operation. Average follow up time was over 6 months.

RESULTS: None of the patients had any residual vertical deviation at primary position. 9 of 10 patients had a complete resolution of IOOA. In the remaining patient the IOOA improved from +3 to +1. 5 patients with head tilts and 4 patients with compensatory face turn improved to normal position. Hypertropias at primary position improved from 3.30 ± 0.48PD to 0.10 ± 0.32PD. Hypertropias at lateral gaze improved from 8.60 ± 2.63PD to 0.60 ± 1.35PD. IOOA improved from +1.5 ± 0.71 to +0.10 ± 0.31. All patients expressed subjective satisfaction with the surgical outcome.

CONCLUSIONS: Muscle belly anchoring of the IO effectively weakened mild to moderate inferior oblique overaction and corrected small primary position hypertropias. This new procedure may be an effective surgical treatment options in patients with small hypertropias

associated with IOOA.

PU-217

共同性斜视矫正术后眼压变化观察

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目的：观察共同性斜视矫正术后眼压变化，探讨患者眼压变化特点。

方法：以我院 2014 年 1 月 ~2017 年 1 月收治的 182 例（357 眼）共同性斜视患者为研究对象，进行前瞻性对照分析。患者均接受共同性斜视矫正术，分别于术前、术后 1 d、术后 2 d、术后 3 d、术后 7 d、术后 14 d、术后 30 d 测量其眼压变化，观察其眼压变化特点并分析不同手术方案对患者眼压变化的影响。

结果：182 例患者中，119 例接受一条水平直肌后退矫正术，其中内直肌后退 51 例，外直肌后退 68 例，其余 63 例接受一条水平直肌后退联合另一条水平直肌缩短术。除斜视度外，各组患者年龄、性别、病程等一般临床资料比较，差异无统计学意义（$P > 0.05$）。各组患者术后 1 d 眼压均较术前上升，术后 7 d 眼压恢复术前水平，术后 14d、术后 30 d，各组患者眼压均低于术前检测结果，差异有统计学意义（$P < 0.05$）。

结论：共同性斜视矫正术后患者眼压短期内显著上升，并于 1 周内恢复，但术后 2 周 ~ 术后 1 个月可持续下降，考虑与眼球内血供受限有关。

Changes in Intraocular Pressure after Comitant Strabismus Surgery

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OBJECTIVE: To investigate the changes of intraocular pressure(IOP) before and after comitant strabismus procedure.

METHODS: 357 eyes of 182 patients with comitant horizontal strabismus were grouped in our hospital from 1, 2014 to 1, 2017 , with prospective controlled analysis. IOP evaluation with a noncontact tonometer were measured pre-operation and 1day, 2 days,3 days,7 days,2 weeks and 1 month after commitant strabismus operation.The IOP changes were studied by different surgeries. Then the medical data were analyzed.

RESULTS: The horizontal rectus recession group (119 eyes),including internal rectus muscle recession group(51 eyes),external rectus muscle recession group(68 eyes),an external rectus recession and a horizontal rectus resection group(63 eyes) were studied. There were no statistical difference in

age, sex ,natural course，except angle of strabismus. In the three groups, preoperative IOP and postoperative IOP at 1 day had statistical differences ($P < 0.05 =$. There were no statistical difference between preoperation and postoperative 7 days, but it had statistical difference between pre-operation and 2 weeks, 1 month after operation (P>0.05).

CONCLUSIONS: IOP has a significantly increase after early operation, 7 days after operation approach preoperative level. Then IOP gradually decreases after 2-4 weeks . The reason maybe is the decreased ocular blood.

PU-218

上直肌转位术 (SRT) 治疗严重外转受限的内斜视

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目的：探讨通过患眼上直肌转位于外直肌止点旁（SRT）联合内直肌后徙治疗严重外转受限的内斜视疗效。

方法：手术前检查眼位、眼球运动和牵拉试验等，眼球后退综合症 I 型，完全外展神经麻痹性内斜视和复发性完全外展神经麻痹性内斜视各 1 例。2 例患者行上直肌转位术和 Buckey 加强缝线联合内直肌后徙，1 例复发性完全外展神经麻痹性内斜视未联合内直肌后徙术。术后观察原在位内斜视，代偿头位和外转运动以及新出现的垂直斜视等，平均随访 6 个月。

结果：3 例术前斜视角平均 90PD, 术后眼位正位，无残余水平斜视，代偿头位均消失，外转运动受限由术前明显改善，均能过中线。均未出现垂直斜视或旋转斜视。

结论：通过单条上直肌转位术就可以解决原在位的内斜视、改善眼球外转和代偿头位，减少术后新的垂直斜视或旋转斜视。上直肌转位联合内直肌后徙术可以同期进行，能够减少眼前节缺血的风险，明显改善外转运动受限，是当今治疗严重外转受限性内斜视的有效方法之一。

Superior rectus transposition foresotropia with severe limitation of abduction

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OBJECTIVE: The purpose of this study was to evaluate the results thatsuperior rectus transposition (SRT) with anadjustable medial rectus muscle recession (MRc)cure the patients who have esotropia with severe limitation of abduction,

METHODS: Preoperative examination included eye position, eye movement and traction test. 1patient with Duane Syndrome Iand 1patient with complete the sixth nerve palsy were performed SRT with augmentation suture and MRc. 1 patient with recurrent complete the sixth nerve palsy was performed SRT only. Postoperative primary position esotropia, compensatory head posture, abduction and new-onset vertical deviations were observed. The average postoperative follow-up was 6 months.

RESULTS: Esotropia in the primary position improved from 90PD preoperatively to normotopia postoperatively,orthophoric alignment in the primary position，no patients had abnormal head posture.

CONCLUSIONS: Superior rectus transposition with simultaneousMRc reduced esotropia in the primary position, increased abduction, and improved head position with minimal risk vertical or torsional diplopia. Combining SRT and MRc reduced the risk of anterior segment schemia and markedly improved head position,abduction limitation, which is one of a safe and effective therapies for esotropia with severe limitation of abduction,

PU-219

内直肌超常量后徙治疗共同性内斜视的临床观察

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目的：观察内直肌超常量后徙术治疗共同性内斜视临床疗效。

方法：回顾性病例分析。分析 35 例共同性内斜视患者行超常规内直肌后徙术进行疗效评估。术前、术后检查眼位，眼球运动，双眼视功能，眼前节、眼底。

结果：内转运动受限检查水平运动内转时瞳孔内缘不能达上下泪小点连线时为内转功能不足，术后 3 天以及半年后的检查无一例眼球内转功能受限病例，也未发现继发性外斜视病例。矫正眼位三棱镜遮盖去遮盖检查 -3~+8 三棱镜度，临床结果满意。

结论：内直肌超常量后徙术是治疗共同性内斜视可以选择的安全有效的方式。

Clinical Observation of Concomitant Esotropia Treated by Medial Rectus Muscle Transnormal Recessions

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hushichaojuyankeyiyuan

OBJECTIVE: observe the clinical curative effect of the concomitant esotropia treated by medial rectus muscle transnormal recessions.

METHODS: retrospective case analysis. Analysis of 35 cases of patients with concomitant esotropia extraordinary medial rectus muscle transnormal recessions to evaluate curative effect. Preoperative and postoperative eye position check, eye movement, binocular visual function, front section, fundus.

RESULTS: dantian limited check horizontal movement period when the pupil can't reach up and down around the inner lacrimal point of attachment for dantian insufficiency, for 3 days, and after half a year after the check no cases of eyeball dantian limited functioning, and no secondary cases of exotropia. Eye position correcting by a prism cover and move away the prism is - 3 ~ + 8, which clinical results are satisfied.

CONCLUSION: the concomitant esotropia treated by medial rectus muscle transnormal recessions is safe and effective.

PU-220

成人共同性斜视手术前后立体视觉功能的分析评估

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目的：分析评估成人共同性斜视术前与术后远近立体视觉功能。

方法：18 岁以上共同性斜视患者 41 例，外斜视 26 例，内斜视 15 例，行斜视手术。手术前后分别采用 Titmus 图及颜氏随机点立体视检查图测定近立体视觉，同视机颜氏随机点立体图测定远立体视觉。

结果：外斜视组术前近立体视检查，Titmus 法测得中心凹立体视优于随机点立体图法检测结果，具有显著差异（P<0.05）；术后 1 个月，两种检查方法测得此人数均增加为 16 例和 13 例；术后 3 个月，此人数又分别增加为 22 例和 18 例，均具有显著差异（P<0.05）。外斜视组术前均无远立体视，术后 1、3 个月分别有 38.46% 和 46.15% 建立远立体视。内斜视组术前两种方法检测近立体视，中心凹立体视均为 0 例；术后 1、3 分别有 20% 及 26% 建立中心凹立体视，且两种检查方法之间无统计学差异（P ＞ 0.05）。内斜视患者术前同样均无远立体视，且术后 1 个月仅 4 例建立远立体视，术后 3 个月此人数无增加。

结论：成人共同性外斜术前、术后远近立体视均优于内斜视；近立体视恢复早于并优于远立体视；外斜视 Titmus 检查结果优于随机点立体图检查结果，而内斜视无此差异。

The evaluation of the stereopsis function of adult concomitant strabismus in pre- and postoperation

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AIM: To evaluate the near and distant stereoacuity before and after surgery in cases of adult concomitant strabismus.

METHODS: Forty-one patients with concomitant strabismus above the age of 18 were enrolled, which contains 26 cases of exotropia and 15 cases of esotropia. All patients scheduled for surgical intervention Near stereopsis was examined with Titmus and random-dot stereogram (created in China by Shao-Ming Yan), distance stereopsis was tested by synoptophore with random-dot stereogram cards produced by Shao-Ming Yan. All patients completed the tests preoperatively and 1 and 3 months postoperatively.

RESULTS: In near stereopsis examination of exotropia groups before surgry, there were 9 patients（34.62%）possessed the foveal stereopsis(≤60″) tested by Titmus better than the result tested by random-dot stereogram(P < .05). One month after operation the numbers of foveal stereopsis checking by the two method were significantly increased by 16（61.54%）and13（50%）.There were statistically significant differences between the two methods(P < .05). Three months after operation the numbers were increased by 22（84.62%）and 18（69.23%）respectively. There also were statistically significant differences between the two methods(P < .05). Among exotropia groups, the percentage of distance stereoscopic improvement was 38.46% after 1month and 46.15% after 3 months compared to 0 preoperatively. Befor surgery the number of foveal near stereopsis in esotropia groups was 0 whatever detected by Titmus or random-dot stereogram. However 20%and 26% of esotropia patients were rebuild near stereopsis after 1 month and 3 months postoperatively. There were no statistically significant differences between the two methods(P >.05). Esotropia patients did not possess far stereopsis before operation yet, and only 4 cases (26.67%) established far stereopsis after 1 month postoperatively.There was no increase 3 months later.

CONCLUSIONS: Patients with concomitant exotropia have better both near and distance stereoacuity than esotropia patients preoperatively and postoperatively. The recovery of near stereopsis earlier and batter than far stereopsis after surgry. Titmus inspection result is better than that of random dot stereogram test results among exotropia patients, however, the difference is not obvious in esotropia.

PU-221

儿童 V 型外斜视不同手术方式的临床效果观察

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目的：比较不同的手术方式治疗儿童 V 型外斜视的临床效果。

方法：回顾性病例分析研究。43 例患儿按术者的不同分为 3 组：双侧外直肌后徙联合下斜肌后徙（A 组 ,n=13）；单侧外直肌调整缝线后徙和内直肌截除联合下斜肌截除（B 组，n=16）；单侧外直肌后徙和内直肌折叠联合下斜肌后徙（C 组，n=14）. 随访时间 5 ~ 12 个月。

结果：3 组患儿术后 1 天、1 个月、及末次随访的水平正位率为：92%、75%、79%；85%、81%、79%；及 85%、81%、79%。术后末次随访中，A 组患儿的水平斜视度以及上下度数差均小于 B 组和 C 组。

结论：A 组患儿水平正位率以及末次随访的眼位优于 B 组和 C 组。

Clinical observation of different surgical treatment for children with V-pattern exotropia

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PURPOSE: To compare the efficiency of 3 different surgery procedures for V-pattern exotropia in children.

METHODS: Retrospective case study. 43 children were randomly divided into three groups: the bilateral lateral rectus resection plus inferior oblique recession (group A, n=13); the unilateral adjustable suture of recession-resection plus inferior oblique myectomy(group B, n=16); and the unilateral liner tucking of recession-resection plus inferior oblique recession (group C, n=14). 43 children were followed-up for 5 ~ 12 months.

RESULTS: After the operations, the orthophoria rates of the group A, group B, and group C are 92%,75%,79%(1 day)；85%,81%,79%(1 month)；and 85%,81%,79%(at the end of follow-up) respectively. At the end of follow-up, the orthophoria rates and the mean reduction of V pattern of the group A are superior to group B, and group C.

CONCLUSIONS: Compared group B and group C, group A has the advantage of treatment of V-pattern exotropia.

PU-222

小度数急性共同性内斜视的手术探讨

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目的：探讨小度数（小于 20 △）急性共同性内斜视的手术治疗及效果。

方法：回顾分析我院 5 例小度数（术前检查三棱镜度均为远大近小）急性共同性内斜视患者的手术治疗效果，对不同术式患者（包括单眼内直肌后徙、单眼内直肌后徙加外直肌截除、单眼外直肌截除），坚持随访 2 年以上，用三棱镜测定术后斜视度、同视机测定视远单视功能、用 titmus 立体图谱测定近立体视锐度等作对比研究。

结果：5 例患者，其中一例采用单眼外直肌截除术，两例采用单眼内直肌后徙术，两例采用单眼内直肌后徙加外直肌截除术，术后眼位均矫正满意 , 患者复视消失，双眼单视功能改善；随访 2 年内有两例患者复发，其中单眼外直肌截除术患者术后两月复发，单纯内直肌后徙患者有一例于术后八月复发。

结论：不同的手术设计方式均可有效治疗小度数急性共同性内斜视 , 达到斜视和复视消失及功能治愈目的，但是单眼内直肌后徙、外直肌缩短及单眼内直肌后徙的手术设计优于单眼外直肌缩短术，能尽量延缓、以及避免术后复发，更长久地保护患者的双眼单视功能。

On the Surgery of Acute Concomitant Esotropia with Small Degree

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OBJECTIVE: To review the surgical treatment and its effectiveness on the concomitant esotropia with small degree(less than 20 △).

METHODS: A retrospective study is to be made on the surgical treatment of 5 patients on their acute concomitant esotropia with small degree (The preoperative examination of Prism degree is far less than small). The record of patients being tracked for more-than two years(including Mddial rectus recession, Mddial rectus recession, external rectus shortening and external rectus shortening)is to be presented. The triprism is adopted to determine the angle of the strabismus, the synoptophore to examine the binocular function, the stereoscopic test chart to determine the near stereoscopic vision and a comparative study.

RESULTS: All of the 5 patients, one had the surgery of external rectus shortening, two of Mddial rectus recession, and the other two of Mddial rectus recession and external rectus shortening. Postoperative result is satisfactory and eye position is parallel, single vision of two eyes had been recovered in all patients. During the follow-up for two years, there were two patients relapsed; After the surgery for two months, the patients with lateral rectus resections were relapsed and another patient for the Mddial rectus recession was relapsed after eight months.

CONCLUSION: Different surgical methods can be used to treat the acute concomitant esotropia with small degree, including eliminating diplopia, strabismus correction and functional recovery. However, the surgery of Mddial rectus recession, Mddial rectus recession and external rectus shortening is better than just applying external rectus shortening. Comparatively, the relapses are delayed, ocular alignment and the binocular vision are protected

PU-223

先天性双上转肌麻痹临床表现及治疗

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目的：探讨先天性双上转肌麻痹的临床表现治疗

方法：分析 2014~2016 年在我院收治的先天性双上转肌麻痹病人 4 例男 3 例右眼患病，女 1 例左眼患病，年龄 4~23 岁。生

后患眼不能睁大否认外伤手术史，神经内科会诊排除内科病。术前视力屈光状态、眼前节眼底、眼位眼球运动、双眼远近立体式功能、眼眶 CT 检查

结果：4 例患眼裸眼 CF~0.4 矫正 CF~0.5; 健眼 0.5~1.0 矫正 0.8~1.0。 远近立体式功能无 。患眼有不同程度弱视。眼位健眼注视，患眼下斜视低位眼，上睑下垂。患眼注视，患眼睑裂开大，上睑下垂症状消失，健眼上斜视高位眼。1 病人伴有 -80? 外斜视，1 病人有 +20? 内斜视。眼球运动患眼内外转到位，上转受限、上转不能过中线。Bell 氏征患眼 -，健眼 +。牵拉试验患眼下直肌紧张力大。代偿头位抬下颌。手术治疗患眼下直肌后徙，健眼上直肌后徙。术后 2 例原在位垂直斜消失，上睑下垂症状消失 1 例病人 2 次手术行内直肌缩短，外直肌后徙术，4 岁病人术后弱视治疗 2 年，视力 0.15 提升到 0.5。 Titmus 200”。

结论：先天性双上转肌麻痹有共同临床表现各有差异，本病对视力和双眼视功能损害较重，应尽早手术。

Clinical features and surgical treatments of the congenital double palsy

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OBJECTIVE: To observe the clinical features and surgical treatments of the congenital double elevator palsy (DEP).

METHODS: 4 cares patients, 3 male, 1 female, aged 4 to 23 years old were admitted between 2014 to 2016, and diagnosed with DEP in the right eye in 3 cases and left eye in 1 case. 4 cases had no history of traumatic surgery and no history of wounds. The consultation by neurologists excluded the possibility of internal diseases.

A series of examinations were carried out for the patients including eyesight and refractive examination, anterior segment, fundus oculi, eye movement and binocular stereo visual function tests, and orbit CT examination.

RESULT: Before the surgery, the affected eye visions with uncorrected visual acuity were CF~0.4,and visions with correction were CF~0.5. Normal eye visions without correction were 0.6~1.0 and vision with correction were 0.8~1.0. 4 cases patients had no stereopsis according to Titmus test, as well as no I,II,III degree functions by synoptophore. The affected eyes had different degrees of amblyopia. For 4 cases patients, the affected eyes were hypotropia, low eyes, ptosis while normal eye fixation. The affected eyes palpebral fissure became big, ptosis symptom disappeared, normal eyes were hypertropia while affected eyes fixation. One of female patients had -80? exotropia,and 4-year-old patient had +20? esotropia. For eye movement, the affected eye had limit on upper turn. The elevation was limited and could not pass the mid line.

Bell’s reflex was not present in the diagnosed affected eye, and Traction test showed that the inferior rectus muscle was tight and had tension. Compensatory head posture:rise lower jaw,wrinkled forehead, look upward. Treatment: the inferior rectus muscle of affected eyes recessed 5mm, the superior rectus muscle of normal eyes recessed 5~6mm.After surgery, the vertical squint and ptosis disappeared in 2 cases. One of cases showed that inline rectus was shorten, lateral rectus recession. The 4-year-old amblyopia patient received 2 years treatment, with vision improved from 0.15 to 0.5. Titmus test 200”.

CONCLUSION: The single-eye congenital DEP patients had the similar clinical characteristics. The congenital double elevator palsy can cause serious damages to vision and binocular stereo visual function. Early surgical intervention is suggested.

PU-224

上斜肌折叠术对单眼先天性上斜肌麻痹患者代偿头位的影响

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目的：探讨上斜肌折叠术对改善单眼上斜肌麻痹患者代偿头位的影响。

方法：前瞻性收集 2015 年 10 月至 2016 年 5 月因单眼上斜肌麻痹在北京大学人民医院眼科中心行斜视手术治疗有代偿头位的患者 11 例，其中 2 例患者曾有患眼下斜肌或对侧眼下直肌减弱术史。术前详细记录患者的垂直斜视角、眼球运动、代偿头位、Bielschowsky 征等，根据 Knapp 分类的将常见的三种单眼 SOP 患者分别行相应手术方式的选择，于术后 1 天，1 月及 3 月观察记录患者头位改善及眼位、眼球运动情况。

结果：最大上斜视出现在鼻上方行麻痹眼的下斜肌减弱手术可纠正代偿头位；最大上斜视出现在鼻下方行麻痹眼的上斜肌折叠术可纠正代偿头位；最大上斜视出现在整个鼻侧即同时存在麻痹眼上斜肌功能减弱和下斜肌功能亢进时 , 若原在位垂直斜视度 <15 △，行上斜肌折叠术纠正代偿头位的作用优于行下斜肌减弱术。若原在位垂直斜视度 >20 △，行下斜肌减弱联合上斜肌折叠术纠正头位的作用优于患眼下斜肌减弱联合对侧下直肌减弱术。

结论：上斜肌折叠术可有效地矫正由于上斜肌麻痹引起的代偿头位，同时既往行患侧下斜肌减弱或对侧下直肌减弱术后再次出现代偿头位时，行上斜肌折叠术可有效纠正头位

The effect of superior oblique muscle folding on correcting the head position of the monocular patients with congenital superior oblique palsy

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OBJECTIVE: to study the effect of superior oblique muscle folding on correcting the head position of the monocular patients with congenital superior oblique palsys.

METHODS: a prospectie, collecting in 11 cases between October 2015 to May 2016 on the patients of monocular superior oblique palsy in Department of Ophthalmology of Peking University people's hospital line on strabismus surgery for patients with compensatory head position. Among them 2 patients had the operating history of inferior oblique muscle or inferio rectus muscle. Preoperative patients with detailed records of the vertical strabismus angle, eye movement, compensatory head position, Bielschowsky test, etc. According to the classification of Knapp common three kind of monocular SOP patients respectively choosing peration methods. in postoperative 1 day, 1 month and 3 months observating the records on the patients with the vertical Angle, head position and eye movement.

RESULTS: Weakening operation of the inferior oblique muscle can correct the head position on the bigger vertical strabismus angle appearing in the superior nosal direction ; Folding operation of the superior oblique muscle can correct the head position on the bigger vertical strabismus angle appearing in the inferior nosal direction. Weakening operation of the inferior oblique muscle and folding operation of the superior oblique muscle can correct the head position on the big vertical strabismus angle appearing in the inferior and superior anosal directions.

CONCLUSION: the superior oblique muscle folding can effectively correct not only the head position of superior oblique palsys, but also the head position of the operating history patients of inferior oblique muscle or inferio rectus muscle with superior oblique palsys.

PU-225

V 型斜视伴斜肌异常的手术疗效分析

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目的：探讨 V 型斜视伴斜肌异常的手术疗效。

方法：回顾性分析 45 例伴斜肌异常 V 型斜视，检查手术前后原在位斜视角、向上转 25^0 与向下转 25^0 注视斜视角差别、眼球运动、斜肌功能及双眼视功能。手术原则减弱亢进的下斜肌或联合加强上斜肌、减弱协同肌或配偶肌，水平斜视按原在位矫正；随访时间 2 月 -2 年。

结果：45 例伴斜肌异常 V 型斜视，术后眼位总正位率 91.11%，V 征均消失，术后下斜肌功能均有明显改善，其中下斜肌非对称减弱组 16 例术后残留垂直斜视角 4.43△，其中 6 例 > 5△。术后 24.4% 获得了近立体视，改善 44.4%。术前近立体视损害 V 型内斜组明显高于 V 型外斜组，术后近立体视恢复 V 型外斜组明显早于 V 型内斜组，差异均具有统计学 (P<0.05) 意义。

结论：V 型斜视伴斜肌异常者，双侧下斜肌亢进程度相近行双下斜肌对称减弱术效果好；下斜肌非对称减弱术后可能仍存在下斜肌亢进、残留垂直斜视；V 型内斜较 V 型外斜更易损害视功能。

Analysis on efficacy of surgery for V pattern strabismus with oblique muscle dysfunction

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OBJECTIVE: To investigate the surgical efficacy of V pattern strabismus with oblique muscle dysfunction.

METHODS: The medical records of 45 patients that V pattern strabismus with oblique muscle dysfunction were retrospectively analysis.check the strabismus degree of the eye's primary position of anteroposterior of the surgery. Compare the strabismus degree difference of the eyes turned up 25^0 and turned down 25^0. Checked the eye movements,oblique muscle and binocular visual function. The principle of suegery was that weakened the inferior oblique muscle or that simultaneously strengthened superior oblique muscle or that simultaneously weakened synergist muscle, and or that simultaneously weakened antagonist muscle. The horizontal strabismus were correction according to the primary eye position. The patients were followed-up for two months to two years after the surgery.

RESULTS: The total ratio of the postoperative eyes position was 91.11% (41/45) and the V symptoms were disappeared in 45 cases. The Inferior obliques overaction were obviously weakened after the surgery. The residual vertical strabismus degree is 4.43PD(Prism Dipters) and 6 cases > 5PD in 16 cases asymmetry inferior oblique weakening after the surgery. The near stereo vision was received 24.4%

and was improved 44.4% in 45 cases. The preoperative near stereo vision of V pattern esotropia group was more obviously damaged than that of V pattern exotropia group. The postoperative recovery of the near stereo vision of the V pattern exotropia was more obviously earlier than that of the V pattern esotropia. The differences of the two groups were statistically significant (P<0.05).

CONCLUSIONS: The V pattern strabismus patients with oblique muscle dysfunction were suitable taken the bilateral symmetric inferior oblique weakening surgery and the effect was satsfied when they had bilateral inferior obliques equal overaction. But the cases may still exist the residual vertical strabismus degree and the inferior oblique overaction after surgery. V pattern esotropia was more easily damaged the binocular visual function than that of V pattern exotropia.

PU-226

儿童 A 型斜视的临床分析

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目的：探讨 A 型斜视临床特征和手术方法和疗效。

方法：回顾分析我院诊治疗资料齐全的A型斜视患儿共69例，其中男6例，女33例，年龄小者4岁，最大者16岁，平均8.1岁，A 型内斜 29 例，A 型外斜 40 例，所有患者行常规视力、眼位、眼外肌功能、双眼视功能检查如同视机检查，5 米和 33CM 的三棱镜加遮盖检查，眼底照像检查眼球旋转情况，51 例患儿上斜肌亢进，根据水平斜视大小、上斜肌亢进程度眼球旋转程度确定手术 , 水平斜视按常规手术量设计 ,A 征伴上斜肌亢进明显或内旋明显者行上斜肌断腱 , 上斜肌亢进和内旋不显著者选择水平直肌移位

结果：45 患儿行上斜肌切断术，24 例行水平直肌移位术，术后第一眼位正位 61 例 , 术后 A 征消失 55 例 ,6 例行二次手术 ,A 征患儿术后三级功能有不同程度改善，47 例术后获三级功能

结论：A 型斜视是水平斜视存在垂直方向非共同性，主要有上斜肌功能异常引起，需手术治疗 , 上斜肌功能明显过强者和眼底像内旋明显时行上斜肌断腱术 , 应根据患儿双眼视功能及旋转情况慎重选择上斜肌手术，内外斜视常规按水平斜视矫正，充分的术前准备，详细的术前眼肌功能评判和合理的手术设计是疗效的保证 .

Clinical analysis of children strabismus type A

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OBJECTIVE: To investigate the clinical features, surgical methods and therapeutic effects of strabismus type A

METHODS: retrospective analysis of the diagnosis and treatment of complete data of children with strabismus type A were 69 cases, including 6 cases of male, 33 cases of female , for those age from 4 to 16 years old , the average age of 8.1, esotropia type A in 29 cases, exotropia type A in 40 cases . All patients underwent routine visual acuity, eye position, extraocular muscle function and binocular visual function, such as visual inspection machine inspection, 5 m and 33 cm triple prism cover test, fundus photography examination cycloduction, 51 cases with superior oblique overaction, according to angle of horizontal strabismus, superior oblique overaction and eyeball rotation degree to determine the surgery, horizontal strabismus according to the conventional model for design, A character with oblique hyperfunction significantly or internal rotation obviously on the oblique muscle tendon broken, superior oblique muscle hyperfunction and internal rotation not remarkableness choose horizontal rectus muscle shifting.

RESULTS: 45 children with oblique muscle amputation, 24 horizontal rectus muscle transposition, the postoperative primary position of eye on the right position was 61 cases, A sign disappeared in 55 cases postoperative, 6 cases underwent secondary surgery, A sign in children postoperative triple vision function improved to varying degrees, 47 cases of postoperative obtained triple vision function.

CONCLUSION: strabismus type A is the vertical direction of horizontal strabismus of commonality, mainly caused by abnormal function of the superior oblique muscle, require surgical treatment, superior oblique muscle function obviously stronger and fundus as its internal rotation obviously, superior oblique muscle tendon surgery should be based on binocular visual function in children with oblique muscle and rotation of discreet choice, esotropia and exotropia according to horizontal strabismus correction, sufficient preoperative preparation, detailed preoperative eye muscle function evaluation and reasonable operation design is the assurance of curative effect.

PU-227

先天性内斜视的手术治疗

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目的：探讨先天性内斜视的手术时机、手术方法及手术效果。

方法：回顾性分析手术治疗的先天性内斜视 46 例。内斜视 + 50△以内，行单眼或双眼内直肌后徙；+ 50△～ + 70△行单眼内直肌后徙加外直肌截除术，内斜视大于 + 70△且年龄较大患儿，采用双眼内直肌后徙加单眼外直肌截除术。术后同视机训练三级功能。

结果：术后眼位正位 38 例，欠矫 5 例，过矫 3 例。术前斜视角在 + 30△～ + 60△，术后眼位正位率 82．35%(28 /34) ; 术前斜视角大于 +60△，术后眼位正位率 66．67% (8 /12) 。

结论：先天性内斜视患儿应早期手术治疗，双眼内直肌后徙术为首选术式，术后的随访对于远期眼位正位非常重要。

The surgery of congenital esotropia

BaiYu

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OBJECTIVE: To investigate the time methods and results of the surgery of congenital esotropia.

METHODS: Retrospective analysis was made of surgical treatment of 46 cases of congenital esotropia. For whthin + 50△esotropia, the inner rectus of monocular or binocular were resettled backward , For + 50△～ + 70△esotropia , the inner rectus resettled backward plus the treatment of cutting the external rectus away in their one eyes; For beyond + 70△esotropia, a small number of older children were treated with the inner rectus resettled backward in both their eyes plus the treatment of cutting the external rectus away. After treatment, three- level-function training was carried out on synoptophore.

RESULTS: 38 patients'eye positions were corrected after orthotopic, 5 cases undercorrection, and 3 case overcorrection. For those with preoperative oblique angle at + 30△～ + 60△, the orthotopic rate of the eye position was 82．35%(28 /34) ; for those with preoperative squinting angle greater than + 60△, the orthotopic rate of the eye position was66．67% (8 /12).

CONCLUSION: The surgery of children with congenital esotropia should be done early, with the downward rectus re-settlement within eyes as the preferred surgical technique. The postoperative follow-up is very important for the long term eye position correction.

PU-228

间歇性外斜视的斜视类型对立体视功能影响的研究

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目的：分析比较不同类型的间歇性外斜视患者的远近立体视功能状况。

方法：将 224 例诊断为间歇性外斜视需要接受手术治疗的患者按照斜视类型分为集合不足型（78 例）、基本型（131 例）、分开过强型（15 例），对 3 种类型的患者的远立体视、近立体视情况进行分析比较。进一步将患者按照屈光状态分为远视组、正视组、近视组和屈光参差组，分析屈光状态对间歇性外斜视分型的影响。

结果：（1）集合不足型、基本型和分开过强型间歇性外斜视患者保留远立体功能的比率分别为 24.4%、15.3%、33.3%，这三种不同类型的间歇性外斜视患者保留远立体视功能没有统计学差异；保留近立体视功能的比率分别为 87.2%、67.9%、93.3%，三种不同类型的间歇性外斜视患者近立体视功能有统计学差异（P=0.002），分开过强型间歇性外斜视患者的近立体视功能保留率最高。（2）不同屈光状态与间歇性外斜视的分型之间没有相关性。

结论：斜视类型不影响间歇性外斜视患者的远立体视状况，对近立体视有影响，分开过强型间歇性外斜视患者的近立体视功能保留率最高；斜视类型对间歇性外斜视患者近立体视的影响与屈光状态无关。

The effects of classification on stereoacuity in patients with intermittent exotropia

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PURPOSE: To evaluate and compare stereoacuity with respect to classification in intermittent exotropia(IXT).

METHODS: 224 patients with IXT undergoing strabismus surgeries in Beijing Tongren Hospital were involved. All patients were divided into three groups according to near and distant deviation: convergence insufficiency (78 cases), basic (131cases) and divergence excess (15 cases). The stereoacuity at distance and near were compared among the three groups. Furthermore patients were divided into four groups according to preoperative refractive error: hyperopia, emmetropia, myopia, anisometropia. The effects of refractive error on the classification of IXT were analyzed.

RESULTS: (1) The ratio of having distance stereoacuity in IXT with convengence insufficiency, basic and divergence excess were 24.4%、15.3% and 33.3%. There was no significant difference in distance stereoacuity among the three groups. The ratio of having near stereoacuity in IXT convengence insufficiency, basic and divergence excess were 87.2%、67.9% and 93.3% . There was significant difference in near stereoacuity among the three groups (P=0.002). The near stereoacuity was best reserved in IXT with divergence excess. (2)

there was no correlation between refractive errors and IXT type.

CONCLUSION: For the IXT patients, IXT type has little effect on distance stereoacuity, however it affected the near stereoacuity. The near stereoacuity was best reserved in IXT with divergence excess. There was no correlation between refractive errors and IXT type.

PU-229

视感知觉训练对共同性外斜视术后患者立体视功能缺损的修复研究

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目的：研究共同性外斜视术后患者双眼动态和精细立体视生物模型，了解该类患者视觉中枢高级通道层面的残留双眼关系，探讨视感知觉学习在术后患者立体视修复中的表现与特性。

方法：2015 年 1 月至 12 月我院行共同性外斜视矫正术后患者 210 例，于术后 1 周至 3 月行常规三级视功能及生物模型立体视检查，记录两种模型下残留双眼立体视情况并进行分析。使用双眼视平衡噪声训练、双眼整合中枢控制的协调训练及多维空间立体视训练，根据逆分级理论模型，以从高级到低级的方式对缺损视功能区域进行修复，对比修复前后立体视变化，观察单双眼视功能的迁移性在立体视上的表现。

结果：210 例患者常规双眼三级视功能均缺失；生物模型检查 48 例存在残留动态立体视，65 例存在残留粗糙立体视，54 例存在残留动态及粗糙立体视，43 例无残留立体视。经 6-12 月视感知觉训练后，失访 18 例，随访的 192 例患者，立体视均有不同程度的修复。

结论：共同性外斜视患者双眼视功能缺损严重，术后是进行修复的有利时机。残留立体视生物模型可用于术后患者双眼间立体视能量关系的测量，视感知觉训练有效修复该类患者视功能，可能为个体化视感知觉靶向治疗开辟新途径。

The Study on the Repair of Concomitant Exotropia Postoperative Patients' Stereopsis Function Deficiency through Visual Perceptual Training

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OBJECTIVE: The study is to investigate concomitant exotropia postoperative patients' binocular dynamic and fine stereopsis biological model, knowing their visual cortex in advanced channel level of residue oculus uterque relations, and discussing the performance and character of postoperative patients' stereopsis restoration through visual perceptual learning.

METHOD: The hospital took the 210 cases of concomitant exotropia correction from January 2015 to December 2015. They underwent routine triple visual function check and stereoscopic check on biological model after the operation 1 week to 3 months, recording and analyzing the stereoscopic condition of residue oculus uterque among those two models. Binocular visual balance and noise training was used as well as coordinated training of binocular integrated central control and multi-dimensional stereopsis training. According to inverse classification theory model, we restored visual functional area deficiency from advanced to low level, comparing with stereo vision changes before and after repair, and observing single and binocular visual functional mobility which is based on the performance of stereopsis.

RESULT: 210 cases of routine binocular triple visual function were deficient; 48 cases existed residue dynamic stereopsis through biological model check; 54 got residue dynamic and rough stereopsis; 43 got no residue stereopsis. After 6-12 months of visual perceptual training, there were 18 missing cases and stereopsis was restored from different levels among the 192 follow-up cases.

CONCLUSION: The deficiency of concomitant exotropia patients' binocular visual function is severe. It is the good time for restoring afer operation. Biological model of residue stereopsis can be used as the measurement for the relation on the binocular stereopsis energy. Visual perceptual training can restore those patients' visual function effectively and may find new way to personalized target therapy of visual perception.

PU-230

13 例 Duane 眼球后退综合征的临床特征和手术治疗

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目的：探讨 Duane 眼球后退综合征的临床特征和手术治疗效果。

方法：回顾性分析 13 例 Duane 眼球后退综合征病例的临床资料。主要包括：年龄、性别、视力、立体视、眼球运动、头位，分型及第一眼位斜视类型，手术方式、术后眼球运动、头位、第一眼位斜视度等。

结果：13 例患者中男 8 例，女 5 例。年龄 4-39 岁，平均 16.4 岁。裸眼视力或矫正视力正常（＞=0.8）8 例 15 眼，不能达到正常（＜ 0.8）6 例 11 眼。11 例为 Duane 眼球后退综合征 I 型，患眼外转受限，期中第一眼位内斜视 10 例、外斜视 1 例；2 例为

Duane 眼球后退综合征 III 型，患眼内、外转都受限，第一眼位均为外斜视。伴异常头位者 10 例，伴眼球震颤者 1 例。根据第一眼位行患眼内直肌后退或外直肌后退术。术后第一眼位斜视矫正、异常头位消失，3 例患者部分恢复立体视。

结论：Duane 眼球后退综合征 I 型常见，常合并弱视和屈光不正，第一眼位常存在斜视，并伴有异常头位。直肌后退术可有效改善Duane眼球后退综合征第一眼位斜视及异常头位，有利于立体视的恢复。为了矫正第一眼位存在外斜视，即使外转受限，手术后外转进一步受限，也需减弱外直肌．以期获得良好效果

Clinical features and surgical treatment of 13 cases with Duane′s retraction syndrome

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PURPOSES: to discuss the clinical features and the effect of surgical treatment of cases with Duane′ s retraction syndrome.

METHODS: the clinical data of 13 patients with Duane's retraction syndrome were analyzed retrospectively. Mainly include: age, sex, visual acuity, stereopsis, eye movement, head position, type and type of strabismus in primary position, surgical methods, postoperative eye movements, head position and the degree of strabismus in primary position.

RESULTS: of the 13 patients, there were 8 males and 5 females. Ages were from 4-39 years old, average was 16.4 years old. Uncorrected visual acuity or corrected visual acuity (>=0.8) in 15 eyes of 8 cases, uncorrected visual acuity and corrected visual acuity in 6cases (11 eyes) could not reach normal (< 0.8). 11 cases were Duane retraction syndrome type I, suffering from abduction deficits, 10 case had esotropia in primary position, 1 cases had exotropia in primary position; In 2 cases with Duane retraction syndrome type III, patients had adduction and abduction deficits and extropia in primary position. There were 10 cases with abnormal head position and there was nystagmus in 1 case. According to the primary position, the rectus recession or lateral rectus recession was conducted. The strabismus in primary position was corrected and the abnormal head position disappeared after surgery, also the stereopsis was partially restored in 3 patients.

CONCLUSIONS: Type I of Duane syndrome is common, which often combines with amblyopia and ametropia. The patients often have strabismus in primary position and abnormal head position. Rectus recession can effectively attenuate the strabismus in primary position and the abnormal head position of Duane's retraction syndrome type I, which is beneficial to the recovery of stereopsis. In order to correct the first eye position are exotropia and obtain good results, the lateral rectus muscle should be weaken even the existence of abduction deficits before surgery and further abduction deficits after surgery.

PU-231

双眼视功能训练对治疗间歇性外斜视的有效性评估

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目的：研究间歇性外斜视患者的双眼视功能缺损状态，并通过与该检查相匹配的视知觉学习方法，配以虚拟现实光学工具来对其检测出的视功能缺损进行修复，根据知觉学习迁移性在双眼视功能缺损修复后的表现，探讨间歇性外斜视双眼视缺损模型与知觉学习迁移性的关系。

方法：采用回顾性研究，收集 2016 年 1 月至 2016 年 6 月在我院进行视感知觉长期神经可塑性训练的间歇性外斜视 20 个病例并进行随访，其中成人 4 例，儿童 16 例；以角膜映光 -10 度为界，按斜视度大小分为 2 组，比较训练前、训练后 1 个月及训练后 3 个月的的屈光矫正视力、斜视度、知觉眼位、立体视等参数。采用 SPSS 软件进行统计分析。

结果：3 例训练前无 0 阶立体视，该 3 例可检出 1 阶和 / 或 2 阶立体视，2 例为 0 阶立体视 3 级，15 例为 0 阶立体视 4 级。训练 3 个月后，19 例有 0 阶立体视，并比未训练前均有提高级别，1 例未检出 0 阶立体视，可检出 2 阶立体视。训练 3 个月后与训练前的立体视结果、角膜映光斜视度、知觉眼位比较差异均有统计学意义。训练后 1 个月与 3 个月相比差异无统计学意义。

结论：间歇性外斜视患者可通过视感视知觉学习移除可塑性的障碍，双眼视功能的缺损得到修复。

The Effectiveness of Visual Perceptual Learning to the Intermittent Exotropia

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OBJECTIVE: The project uses the new screening system to understand multi-stage stereoscopic perception of intermittent exotropic patients or other patients who have visual defects.Two virtual-reality instruments are used to compare the efficiency in repairing binocular integration under the biological model of plastic repairmen of damaged nerves among intermittent exotropic patients.,To explore the relationship between intermittent exotropic binocular integration model and perceived learning migration.

METHODS: 20 patients were recruited in this retrospective study. 20 cases were followed-up，of them 4 persons are adults and 16 persons are children.The patients were divided into 2 groups by 10° according to the light reflection on corneal(Hirschberg method),to

study the correction of anisometropia , the degree of strabismus, perceptual eye positions and recovery of binocular vision.The data were analyzed by SPSS.

RESULTS: 3 cases had no 0 order stereopsis, but had 1 order or 2 order stereopsis ,2 cases had 0 order stereopsis with 3 level,15 cases had 0 order stereopsis with 4 level before visual perceptual learning.3 months after learning,19 cases had 0 order stereopsis ,and it was higher than those before training. One patient had no 0-order stereopsis ,but had 2 order stereopsis. Compare the stereopsis results of 3 months after learning and the results before learning(P<0.001),but the data collected between 1 and 3 months after learning had no statistical meaning.

CONCLUSION: Intermittent exotropia belongs to visual perception defects, by using personalized visual perception measurement to quantify the basic condition of visual perception channel in intermittent exotropic patients, and with the targeted plastic therapy to eliminate noises in visual perception processing channel.It is expected to strengthen binocular integration, restore binocular visual function and normal eye position. To built up theoretical basis of non-surgical treatment for intermittent exotropia.

PU-232

外斜视手术治疗后出现连续性内斜视的临床过程与发病相关因素

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目的：分析手术成功矫正儿童间歇性外斜视后出现的连续性内斜视的发生情况与发生率同时探讨与该疾病发生的相关因素。

研究对象与方法：我们对 2009-2017 年在上海新华医院施行过外斜视纠正手术的 1366 名患者进行了回顾性探究，所有的患者在最初或者再次手术后，他们的眼轴都达到 10PD 以内的斜视。我们系统性回顾了该群患者的病例，包括了起病年龄，手术进行时年龄，临床治疗过程以及手术结果。

结果：在该人群中连续性内斜视的患病率为 4.2%。进行过多次手术的患者有更高可能发生连续性内斜视与那些只进行过一次手术变取得理想的术后视轴重合的患者相比。分开过强型外斜视，A 或 V 征，DVD，DHD，弱视，诊断或手术时的低年龄被认为是连续性内斜视的危险因素，连续性内斜视的患病率不会因为手术眼视力的不同而发生改变。

结论：本次对于进行过儿童外斜视矫正手术的患者进行长达 8 年的随访探究表明多次手术以及分开过强型外斜视类型，A 或 V 征，DVD，DHD，弱视，诊断或手术时的低年龄被认为是连续性内斜视的诱因。

The clinical course and risk factors of consecutive esotropia after surgery for exotropia

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OBJECTIVE: To analyse the risk factors related to the onset of consecutive esotropia after surgery for exotropia in children.

METHODS: we retrospectively reviewed the medical record of all the patients who had undergone extropia surgery in Shanghai Xinhua hospital between 2009-2017. After primary operation or reoperation(s)，all the patients were successfully aligned to exotropia within 10 prism diopter. We defined the esodeviation ≥10 prism diopters at postoperative month 1 or later as consecutive esotropia. We evaluated the clinical course, age at diagnosis, age at surgery and surgery success.

RESULTS: The incidence of consecutive esotropia in this cohort was 4.2%. Patients who had undergone multiple surgeries had a higher risk of developing consecutive exotropia. Divergence excess type, A or V symptoms, DVD, DHD, amblyopia, younger age at surgery were risk factors for consecutive esotropia. There is no relation between the incidence of consecutive esotropia and visual vision.

PU-233

下斜肌前转位治疗上斜肌麻痹性上斜视

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目的：评价不同程度的下斜肌前转位对在原位存在上斜视的上斜肌麻痹性斜视的治疗效果

方法：收集自 2010 年 6 月到 2016 年 6 月在我院就诊的上斜肌麻痹原位有眼位上斜的患者 ,32 例，其中，男性 14 例，女性 18 例，平均年龄 12 ± 3.2 岁 . 根据上斜视度数和下斜肌转位的位置把研究对象分为 3 组：第一组：下斜肌肌止端转位到下直肌肌止端下方 2mm，第二组：下斜肌肌止端转位到下直肌肌止端平行；第一组：下斜肌肌止端转位到下直肌肌止端上方方 2mm。合并水平性斜视者常规行水平性斜视矫正术。观察术后患者眼位恢复的情况。术后随访 6-24 个月，平均 11.0 ± 4.24 月

结果：术前一二三组平均垂直斜视度数分别为 12.16 ± 4.9, 17.18 ± 3.02, 和 24.0 ± 2.35 PD, 手术后三组残留垂直性斜视度分别为 1.0 ± 1.24, 3.16 ± 2.4, 4.19 ± 2.27. 手术前后斜视度差别有明显统计学意义（$P < 0.01$）。

结论：下斜肌转位手术对原位存在垂直性斜视的上斜肌麻痹的患者有良好的矫正作用和预测性。

Inferior oblique anterior transposition on the treatment of superior oblique paralytic strabismus

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PURPOSE: To evaluate the effect of different degrees of inferior oblique anterior transposition on the treatment of superior oblique paralytic strabismus in orthotopic presence

METHODS: From June 2010 to June 2016 in our hospital on the treatment of superior oblique muscle paralysis in situ oblique patients, 32 cases, of which 14 males and 18 females, the average age of 12 ± 3.2 The subjects were divided into three groups according to the position of the oblique transposed: the first group: the inferior oblique muscle was transposed to the 2mm below the insertion of the inferior rectus muscle, and the second group muscle transposition to the position that parallel the insertion of the inferior rectus muscle; the third group: the inferior oblique muscle transposition to the upper 2mm to insertion inferior rectus muscle. Patients combined with horizontal strabismus received horizontal strabismus correction . Observation of postoperative eye position ,and all patients were followed up for 6-24 months with an average of 11.0 ± 4.24 months.

RESULTS: The average vertical strabismus was 12.16 ± 4.9, 17.18 ± 3.02 and 24.0 ± 2.35 PD respectively in the three groups before operation. The residual vertical oblique degrees were 1.0 ± 1.24, 3.16 ± 2.4, 4.19 ± 2.27 in three groups respectively .There was significant difference in three groups before and after operation (P <0.01).

CONCLUSION: The inferior oblique muscle transposition has a good correction and predictability in patients with orthotropic oblique paralysis.

PU-234

患眼联合四条肌肉手术矫正大角度废用性外斜视疗效观察

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目的：观察患眼外直肌后退加内直肌缩短合并上、下斜肌减弱术治疗大角度废用性外斜视的手术效果。

方法：回顾性病例分析。2004 年 8 月 ~ 2016 年 1 月期间，斜视度大于 50PD 且于我院行单眼外直肌后退加内直肌缩短合并上、下斜肌减弱术治疗的患者 38 例。所有患者术前斜视度测量采用三棱镜加角膜映光法测量患者注视 33cm 视标时第一眼位的斜视度。根据所测斜视度定量行外直肌后徙及内直肌缩短，并视术前眼球运动情况决定是否同时行内、外直肌下移，且一并将上、下斜肌行减弱处理。术后随访时限 ≥6 个月，观察不同时期的眼位、眼球运动及睑裂大小情况。

结果：1 ）38 例患者术后 1 周内随访正位率为 92.1%，术后 ≥6 个月随访正位率为 84.2%。2 ）术后远期观察，有 7 例患者出现轻度外转不足，1 例患者轻度内转和外展不在。其余 30 例患者眼球运动基本正常。3) 末次随访观察测量，24 例患者术眼睑裂大小较对侧眼无差异，12 例患者术眼睑裂较对侧眼减小不超过 1mm,2 例患者睑裂减小 2 ~ 3mm。

结论：患眼四条眼外肌手术，是安全有效的矫正大角度废用性外斜视的治疗方法。

The outcome of four-muscle surgery on the visual poor eye for treatment of large-angle exotropia

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OBJECTIVE: This study was to observe the application of horizontal rectus recession/resection plus weakening of both obliques on the poorly seeing-eye in large-angle sensory exotropia and assess the postoperation outcome.

METHODS: Thirty eight cases with large angle sensory exotropia (≥50PD) who underwent unilateral horizontal rectus recession/resection plus weakening of both obliques from August 2004 to January 2016 were retrospectively reviewed. Before the operation, best corrected visual acuity (BCVA), strabismus angle, eye movement, slit-lamp, and direct fundus examinations were performed. The angle of exotropia is measured by Hirschberg test and prism alternate cover test at the degree of 33cm. According to the distance of deviation, the lateral rectus recession ranged from5 ~ 9mm, the medial rectus resection ranged from 5 ~ 11mm, with broking tendon of both obliques. The post-operative eye position/eye movement and Palpebral fissure size were observed with a minimum follow-up of 6 months.

Anatomical success was defined as the residual deviation less than 10 prism diopters (PD). Limitation on abduction and adduction in extreme horizontal gaze positions were regarded as ocular motility disorder.

RESULTS: 1) The correction rate of 38 patients was 92.1% in the follow-up period of 1 week and was 84.2% in the follow-up of

more than 6 months. 2) Postoperative long-term observation of 7 patients showed limitation on abduction within 1~3mm. Only one person showed limitation on adversion of 1mm and limitation on abduction of 4mm. The remaining 30 patients with internal and external rotation ranged from +1 to -1. 3) At the last follow-up observation, 24 patients had no difference in the size of palpebral fissure, and the vertical palpebral fissure width in 12 patients was less than that of the contralateral eye, and the palpebral fissure width in 2 cases decreased by 2 ~ 3mm. 3 patients were conscious of the small palpebral fission.

CONCLUSION: 1) The surgery of horizontal rectus recession/resection plus weakening of both obliques was done on the poorly seeing-eye for patients with large-angle sensory exotropia (over 50PD). The correction rate in alignment at postoperative less than one week and final follow-up periods was 92.1% and 84.2%. 2) Four-muscle surgery on the visual poor eye can effectively improve the appearance of patients，and does not cause significant ocular motility disorder. 3) There is a slight disparity of vertical palpebral fissure width between the eyes at final follow-up, which had little effect on appearance. Therefore four-muscle surgery on the disadvantage eye is a safe and effective treatment for large-angle sensory exotropia.

PU-235

鼻内窥镜联合计算机导航下内直肌复位术治疗内直肌断裂 3 例

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目的：报道 3 例鼻内窥镜联合计算机导航下内直肌复位术治疗鼻窦术后内直肌断裂的病例。

方法：我们收集了 3 例鼻窦术后内直肌断裂的患者（其中 2 例同时合并上斜肌损伤），平均年龄 41.6 岁，均因鼻窦术后外斜视入院 , 眼球内转受限，不能过中线，平均斜视度：-96.7△，眼眶 MRI 示均示内直肌离断。患者分别于伤后 2W,9d,3d 进行了鼻内窥镜联合计算机导航下内直肌探查复位术。术中见内直肌完全断裂 , 断端位于肌止点后 20mm 左右，肌肉全部离断并伴有不同程度缺失。

结果：三位患者均成功进行了内直肌复位，术后第一眼位明显好转，内直肌悬吊联合外直肌后徙效果优于单纯内直肌吻合术。

结论：随着鼻内窥镜技术的广泛应用，其并发症也越来越多 , 眼部最常见的并发症是眼外肌和视神经损伤。由于鼻窦手术常位于眶中后部，肌肉断裂后断端太后，无法从眶内行复位术。我们联合鼻内窥镜及计算机导航技术进行内直肌的探查复位术，能清晰显示损伤的眼外肌，术后斜视矫正明显，但因为损伤肌肉肌弹性变差，内直肌直接吻合术后常常容易回退，而行内直肌远端悬联合外直肌后徙术，术后眼位恢复佳。尽早行内直肌复位可以为病人争取内直肌功能恢复的机会，值得进一步探讨和观察

Retrieval of broken Medial Rectus Muscles With endoscopic endonasal combined computer navigation systerm in 3 ruptured medial rectus muscle cases

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PURPOSE: To report retrieval of a totally broken medial rectus muscle during paranasal sinus surgery in three patients' eyes with nasal endoscopic and computer navigation system.

METHOD: We collected 3 patients with paralytic exotropia induced by rupture of the medial rectus muscle during paranasal sinus surgery from 2016.03 to 2016.11 (including 2 patient with superior oblique muscle injury and paralytic rotating strabismus), and the 3 patients received surgery of retrieval medial rectus muscle under nasal endoscopic and computer navigation system in Tongji hospital，HuaZhong university of science and technology. We reported the 3 cases as follows (table 1): the mean age of patients was 41.6 years. All of them are exotropia which resulted from complications of sinus surgery with endoscopic surgery. The mean preoperative angle of exotropia was 93 prism diopters. All three patients' eyes were fixed in the abduction position and had a 100% adduction deficit. Visual acuity in the damaged eyes ranged from 12.5/25 to light perception. Magnetic Resonance Imaging (MRI) revealed a medial orbital wall fracture and the medial rectus muscle interrupted. Two patients suffered from the super-oblique rupture and resulted in rotational strabismus. Three patients respectively received the retrieval of medial rectus muscle with nasal endoscopic combined computer navigation system 2 w, 9days, 3days after injury. We found that the medial rectus muscles were totally ruptured, the proximal end of broken muscle was about 20 mm distance from insertion point. The distal end is invisible in intraorbital. However, it can be found under nasal endoscope in the nasal cavity clearly. All three patients received the surgery of retrieval medial rectus muscle with nasal endoscopic and computer navigation system.

RESULTS: The broken medial rectus muscle was successfully retrieved in all three patients，and the deviation significantly corrected after surgery, the medial rectus muscle suspending combined lateral rectus muscle recession is much better than medial rectus muscle anastomosis simply. Patient 1 received medial rectus muscle anastomosis with nasal endoscopic, and the deviation was 10 prism diopters

exotropia at 1 day postoperation. The deviation angle became turn back after 1 week, and reached to 60 prism diopters exotropia at half a year, and then the patient accepted the secondary Hummelsheim and lateral rectus muscle 8.0 mm recession surgery. The deviation is 8 prism diopters esotropia on first postoprative day and 5 prism diopters exotropia 3 months later. Patients 2 received surgery of suspending the medial rectus muscle at 15 mm distance from insertion point. And the ocular alignment angle of 5 prism diopters exotropia and 16° extorsion on first postoperative day and 20 prism diopters exotropia and 20° extorsion at 6 month later. And then the patient accepted the secondary Harada-Ito and lateral rectus muscle 8.0 mm recession surgery. the ocular alignment angle was 5 prism diopters esotropia and 5° estorsion on first postoperative day and 6 prism diopters exotropia and 4° extorsion 3 months later. The medial rectus muscles of patient 3 were suspended at 16 mm distance from insertion point combined the ipsilateral antagonist lateral rectus muscle was recessed 8.0 mm. The ocular alignment angle of patient 3 was 8 prism diopters esophoria on first postsurgery day and 5 prism diopters exophoria 3 months later.

CONCLUSION: With the widely use of nasal endoscopic technology, complications of surgery with nasal endoscopic became more and more. The most common complication of eye are extraocular muscles and optic nerve injury. Medial rectus and superior oblique muscles are the easiest muscle to damage. Because sinus surgery often located in the deep orbit, the broken muscle is too deep to detect and retrival. However, the lesion of extraocular muscle can be clearly shown under nasal endoscope especially with the navigation system. In our cases, the broken medial rectus muscle was successfully retrieved in all three patients with nasal endoscopic combined computer navigation system. At the same time, we found the effect of the medial rectus muscle suspending combined the recession of lateral rectus muscle is much better than the medial rectus muscle anastomosis surgery. For superior oblique muscle injury patients, The Harada-Ito surgery has the effect on correcting rotating strabismus if the deviation angle is stable. In addition, if we are good at nasal endoscopic operation, it will not induce secondary injury on the optic nerve and orbital tissue and will not affect vision. Retrieval of broken medial rectus muscles with endoscopic endonasal combined computer navigation system is a workable method.

PU-236

双眼外直肌后徙联合下斜肌断腱术治疗集合不足型外斜视临床分析

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目的：观察双眼外直肌后徙联合下斜肌断腱术矫正集合不足型外斜视合并下斜肌功能亢进的手术效果。

方法：对 2013 年 1 月 ~ 2014 年 6 月我院行双眼外直肌后徙联合下斜肌断腱术的 44 例患者术前术后的远近眼位、双眼视功能进行回顾性分析，随访至少 6 个月。

结果：44 例患者术后 1 天 ~3 天正位率 88.6%，术后 6 个月正位率 77.2%。术后的视近、视远斜视度与术前比较，均明显减小，差异有统计学意义（$P < 0.05$）。术后 6 个月获得同时机 I、II、III 级功能及动态立体视人数较术前均增加，差异有统计学意义（$P < 0.05$）。< 12 岁组患者立体视恢复明显优于 ≥12 岁组，差异有统计学意义（$P < 0.05$）。

结论：双眼外直肌后徙联合下斜肌断腱术可有效矫正集合不足型外斜视，通过斜视矫正术后患者的融合功能及立体视功能得到明显改善，越早手术治疗，术后远期效果恢复越好。

The clinical analysis on bilateral lateral rectus recession and inferior oblique tenotomy for the treatment of convergence insufficiency type exotropia merge inferior oblique overaction

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OBJECTIVE: To determine the efficacy of convergence insufficiency type exotropia with inferior oblique overaction treated by surgery of combination of bilateral lateral rectus recession and inferior oblique tenotomy.

METHODS: In this retrospective study ,all 44 patients with convergence insufficiency type exotropia and inferior oblique overaction underwent bilateral lateral rectus recession and inferior oblique muscle tenotomy and then followed at least 6 months from January 2013 to June 2014.Before operation,some examinations would be performed, such as visual acuity, fixation, refractive state , extropia angle on 33cm and 6m,dynamic stereoscopic vision, simultaneous perception, fusion and stereopsis. Follow-up examinations ocular alignment, stereopsis, strabismus degree.

RESULTS: The success

rates of postoperative 1~3days and 6months was respectively 88.6 %and 77.2%.Compard with preoperative group , exotropia degree decreased significantly in both near and far distance in postoperative group($P < 0.05$).Additionally ,after postoperative 6months,dynamic stereoscopic vision, simultaneous perception, fusion and stereopsis were significantly improved when compared with that of preoperation

group ($P < 0.05$).However, the stereoscopic vision recovery rate in low 12years group was significantly higher when compared with that high12years group($P < 0.05$).

CONCLUSION: The combination of bilateral lateral rectus recession and inferior oblique tenotomy is a safe and effective procedure in the treatment of convergence insufficiency type exotropia. Fusion and senior stereoscopic vision can be improved obviously after surgery. In addition, the earlier operative age,the better recovery to be gotted.

PU-237

共同性外斜视术后复视的临床研究

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目的：探讨共同性外斜视术后复视的相关因素及降低复视发生率的方法。

方法：选取 2012 年 5 月至 2016 年 4 月手术治疗的 350 例共同性外斜视患者进行临床回顾性分析研究。

结果：年龄大、双眼视觉功能较差的患者术后复视发生概率大。

结论：共同性外斜视术后复视主要原因为矛盾性复视、斜视过矫或欠矫所致的复视、融合无力，尽早手术、术后早期进行立体视觉训练有利于建立正常的双眼视功能、消除复视。

Clinical study of diplopia of post-operation in concomitant exotropia surgery

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OBJECTIVE: To study for the related factors of diplopia, reduce the incidence of diplopia concomitant exotropia surgery.

METHODS: 350 cases of patients with concomitant exotropia of surgical treatment were analyzed retrospectively.

RESULT: Older patients, binocular vision function were related with diplopia probability.

CONCLUSIONS: The main reason is abnormal retinal correspondence and fusion weakness. Surgery and stereovision training postoperative as early as possible is helpful to establish normal retinal correspondence and eliminate diplopia.

PU-238

固定性内斜视不同手术方式疗效观察

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目的：观察不同手术方式治疗固定性内斜视的疗效。

方法：回顾分析 2008 年 5 月至 2013 年 12 月在我院就诊的 18 例固定性内斜视的手术效果。根据术前眼球运动及斜视度采用不同的手术方式：内直肌超常量后徙、内直肌超常量后徙联合外直肌缩短、内直肌超常量后徙联合上直肌与外直肌联结和内直肌断腱联合外直肌硅胶条固定术，观察术后 3 个月、6 个月，1 年，2 年的眼位及双眼视功能的变化。

结果：术后眼位（斜视度）：术后 3 个月，12 例 <+10 △（66%），3 例 +15 △到 +20 △（17%），3 例 +25 △到 +30 △（17%）。术后 6 个月，10 例 <+10 △ (55%)，4 例 +15 △到 +20 △（22%），4 例 +25 △到 +30 △（22%）；术后 1 年，9 例 <+10 △（50%），5 例 +15 △到 +20 △（28%），4 例 +25 △到 +30 △（22%）；术后 2 年 1 例失访（6%），8 例 <+10 △（44%），5 例残留内斜 +15 △到 +20 △（28%），4 例 +25 △到 +30 △（22%）。所有患者均未发现感染，硅胶条排斥等并发症，所有患者均未恢复双眼单视功能。

结论：采用不同手术方式治疗不同程度的固定性内斜视，近期可达到较理想的眼位，远期眼位稍有回退。

Curative Effects of Fixed Esotropia with Different Surgical Procedures

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PURPOSE: To observe the curative effects of of fixed esotropia with different surgical procedures.

METHODS: Curative effect was retrospectively analysed in 18 eyes of 16 patients with fixed esotropia from May 2008 to December 2013.Surgical procedure was determined depending on the extent of motility impairment and the angle of deviation. Surgical procedures were:excessive medial rectus recession, excessive medial rectus recession and lateral rectus resection, excessive medial rectus recession combined with superior rectus and lateral rectus joint, excessive medial rectus recession and lateral lateral rectus fixation with silica gel. Alignment of the eyes and binocular visual function were observed 3 months, 6 months, 1year and 2 years after the surgeries respectively.

RESULTS: Post operative deviation was less than +10 △ in 12 cases (66%) and +15 △ to +20 △ in 3 cases (17%) and +25 △ to +30 △ in 3 cases(17%) 3 months after the surgery..And the deviation was less than +10 △ in 10 cases (55%) and +15 △ to +20 △ in 4 cases (22%) and +25 △ to +30 △ in 4 cases(22%) 6 months after the surgery .The deviation was less than +10 △ in 9 cases (50%) and +15 △ to +20 △ in 5 cases (28%) and +25 △ to +30 △ in 4 cases(22%) 1 year after the surgery. One case(6%) was lost to follow up 2 years after the surgery and the deviation was less than +10 △ in 8 cases(44%) and +15 △ to +20 △ in 5 cases (28%) and +25 △ to +30 △ in 4 cases(22%). Serious complications such as infection and rejection to silica gel were not found in any of the cases. But no one restored binocular vision fuction.

CONCLUSIONS: Ideal outcome can be attained in fixed esotropia treated with different surgery procedures in a short time, while long-term alignment of the eyes may revert back a little.

PU-239

间歇性外斜视术后代偿头位

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目的：报道间歇性外斜视术后出现代偿头位的病例，并分析这些少见术后并发症的临床特点及手术治疗。

方法：回顾分析 15 例间歇性外斜视术后出现代偿头位的病例临床资料。

结果：15 例间歇性外斜视术后出现代偿头位的患者中，男性 4 例，女性 11 例，第二次手术时年龄 7-13 岁，在第一次手术前平均外斜度数为 32.8 △，且均不伴 V 征。其中 12 例接受了双眼外直肌后徙术，1 例接受了双眼外直肌后徙术及右眼内直肌缩短术，1 例接受了左眼外直肌后徙术及内直肌缩短术，1 例接受了双眼外直肌后徙术及右眼外直肌上转位术。其中 6 例患者在术后第二天出现内斜视，所有患者在术后 1-4 年随访期内均出现继发性内斜视 V 征（向下方注视时斜视度大于向上方注视时斜视度至少 15 △）伴代偿头位，第一眼位平均内斜度数为 21.5 △。其中 12 例患者于第一次手术后 1-4 年内接受了第二次手术，主要手术方式为外直肌前徙术伴或不伴上移。所有患者在第二次手术后第二天代偿头位改善，第一眼位正位且 V 征消失。

讨论：间歇性外斜视术后继发性内斜视 V 征伴代偿头位的患者中，外直肌前徙术伴或不伴上移是解决术后并发症的有效手术方式，但仍需术后长期随访评估远期效果。

Compensatory Head Posture after Surgical Treatment in Patients with Intermittent Exotropia

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PURPOSE: To report cases that had compensatory head posture in postoperative patients with intermittent exotropia (XT) and to analyze the clinical features and surgical managements for these infrequent postoperative complications.

METHODS: The medical records of 15 cases with intermittent XT that had compensatory head posture after surgical treatment were retrospectively reviewed.

RESULTS: Among 15 cases of compensatory head posture after surgical treatment in intermittent XT, 4 cases are male, 11 cases are female, and ages at second surgery are between 7 to 13. The average exodeviation was 32.8 PD without V-pattern. The binocular lateral rectus recessions (LR Rec) were operated in 12/15 of the patients with intermittent XT, binocular LR Rec and medial rectus resection (MR Res) in right eye were in 1/15, both LR Rec and MR Res in left eye were in 1/15, and binocular LR Rec and upward transposition of lateral rectus in right eye were in 1/15. 6/15 of the cases appeared esodeviation on the day after surgery, and all of the cases presented consecutive V-pattern ET (at least 15 PD greater in downgaze than in upgaze) with compensatory head posture in the follow-up period between 1 to 4 years after surgery, and the average esodeviation was 21.5 PD in primary gaze. 12/15 of the cases underwent second surgeries 1-4 years after the first surgery, and the main operation was advancement of lateral rectus with or without upward transposition. The compensatory head posture were improved in all of these cases, and ocular alignment returned to normal in primary gaze without both V-pattern.

CONCLUSION: Advancement of lateral rectus with or without upward transposition is effective in the correction of postoperative complications including consecutive V-pattern ET and compensatory head posture in patients with intermittent XT, but postoperative long-term follow-up is needed to evaluate effect.

PU-240

水平斜视矫正术后的双眼视功能研究

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目的：改善患者双眼视功能是斜视手术的首要目标。本研究观察水平斜视矫正术后患者双眼视功能状况。

方法：应用双眼相位融合检测程序定量检测 30 例水平斜视矫正术后患者双眼视觉相互作用。应用同视机和立体视图检测患者立体视觉。

结果：水平斜视矫正术后大部分患者（23/30 例）双眼视觉相互作用异常（平衡点 <0.9），在部分有立体视的患者中仍然存在双眼视觉相互作用异常。

结论：水平斜视矫正术后患者仍存在双眼视觉相互作用异常，需要进一步治疗以重建双眼视觉平衡。

Sensory eye balance in surgically corrected exotropes and esotropes

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OBJECTIVE: Surgery to align a deviated or strabismic eye is often done for both functional as well as cosmetic reasons. Binocular function, including a balanced ocular dominance, could be expected to be normal after surgical correction. It was to evaluate the binocular function in the surgically corrected exotropes and esotropes.

METHODS: We used a binocular phase combination paradigm to quantitatively assess the ocular dominance in a group(n=30) of surgically corrected exotropes and esotropes who have normal visual acuity.

RESULTS: It was found that significant interocular imbalance (balance point< 0.9) in most of the surgically treated patients (23 out of 30) athough some of them had some degree of stereopsis.

CONCLUSIONS: We conclude that the two eyes may still have a residual sensory imbalance in surgically corrected strabismus. A further treatment aimed at re-balancing the ocular dominance might be necessary in surgically treated exotropia and esotropia to provide more efficient binocular processing in the long term.

PU-241

不同麻醉方式对患儿斜视手术眼心反射的影响

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目的：探讨不同麻醉方式对患者斜视手术眼心反射的影响，评估其有效性及安全性。

方法：选择 2016 年 6 月 -2017 年 3 月于我院全麻下行斜视矫正手术的患儿 86 例纳入研究。随机分为两组，一组为全身麻醉组，给予丙泊酚 2mg/kg，芬太尼 1ug/kg，罗库溴铵 0.6mg/kg 麻醉诱导，术中持续静脉泵注丙泊酚 3-7mg· kg^{-1} · h^{-1}，间断给予芬太尼维持麻醉；另一组为全身麻醉复合球后麻醉组，全身麻醉后，球后注射 2% 利多卡因 2ml，术中丙泊酚、芬太尼维持麻醉。观测指标：术中牵拉眼外肌所造成的最低心率低于心率基线值的 10% 以上或出现心律失常即为眼心反射阳性。记录术前心率基线值，手术时间、麻醉时间及术中牵拉首条眼外肌时眼心反射发生的例数。

结果：两组患者术前基础心率及血氧饱和度无统计学差异（p>0.05），手术及麻醉时间无统计学差异（p>0.05）；全身麻醉组眼心反射发生例数显著高于全身麻醉复合球后麻醉组（p<0.05），阿托品用量也显著增加（p<0.05）。

结论：与单纯全身麻醉比较，全身麻醉复合球后麻醉能有效降低眼心反射的发生率，减少阿托品用量，为患儿斜视矫正手术提供安全保障。

Effects of different anesthesia methods on oculocardiac reflex in children undergoing strabismus surgery

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OBJECTIVE: Investigate the effects of different anesthesia methods on the oculocardiac reflex in strabismus surgery and evaluate the efficacy and safety.

METHOD: A total of 86 children with strabismus surgery under general anesthesia in our hospital from June 2016 to -2017 in March were enrolled in the study. They were randomly divided into two groups. One group was general anesthesia group, given propofol 2mg/kg, fentanyl 1ug/kg, rocuronium 0.6mg/kg to induce anesthesia, intraoperative continuous intravenous infusion of propofol 3-7mg - kg-1 - H-1, the intermittent injection of fentanyl to maintain anesthesia; another group of was general anesthesia combined with retrobulbar anesthesia group. Retrobulbar injection of 2% lidocaine 2ml after general anesthesia , intraoperative propofol and fentanyl to maintain anesthesia. Observation indexes: the lowest heart rate caused by the traction of extraocular muscle during the operation was lower than 10% of the baseline value of heart rate, or the occurrence of arrhythmia was positive for oculocardiac reflex. The baseline values of preoperative heart rate, operation time, anesthesia time and the number of cases of oculocardiac reflex occurred in the first extraocular muscle were recorded.

RESULT: The basis of heart rate and blood oxygen saturation had no significant difference between the two groups of patients before

surgery (p>0.05), and surgery and anesthesia time had no statistical difference (p>0.05); the incidence of oculocardiac reflex of general anesthesia group was significantly higher than that of general anesthesia combined with retrobulbar anesthesia group (p<0.05), dosage of atropine also significantly increased (p<0.05).

CONCLUSION: Compared with general anesthesia, general anesthesia combined with retrobulbar anesthesia can effectively reduce the incidence of oculocardiac reflex , reduce atropine dosage and provide security for children with strabismus surgery.

PU-242

水平斜视穹窿部结膜切口间断缝合针数对切口愈合情况的影响

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目的：探讨水平斜视穹窿部结膜切口间断缝合不同缝合针数对切口愈合情况的影响及对比

方法：对住院 64 例 (64 只眼) 水平斜视患者 , 施行水平眼肌后徙及截除手术，其中 A 组 32 例 (32 只眼，包括后徙肌肉切口 32 个，截除肌肉切口 32 个) 结膜切口均采用 1 针间断缝合；B 组 32 例 (32 只眼，包括后徙肌肉切口 32 个，截除肌肉切口 32 个) 均采用 2 针间断缝合。缝线均采用 6/0 可吸收缝线。观察术后 5 天各切口愈合情况。

结果：(1)A、B 两组患者术后 5 天截除肌肉切口均Ⅰ / 甲愈合，无切口开裂；(2)B 组患者术后 5 天后徙肌肉切口均Ⅰ / 甲愈合，无切口开裂；(3)A 组患者术后 5 天后徙肌肉 20 例切口Ⅰ / 甲愈合，无切口开裂；12 例切口仍有超过 3mm 长度范围未完全愈合，术后 10 天此 12 例切口Ⅰ / 甲愈合，无切口开裂。

结论：1 针间断缝合后徙肌肉切口，可能因截除肌肉张力过强原因引起后徙切口愈合延迟。水平斜视穹窿部结膜切口间断缝合针数选择，以后徙肌肉切口 2 针，截除肌肉切口 1 针为宜。

Effect of interrupted stitch number at the conjunctival incision of horizontal strabismus fornix on the healing condition

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OBJECTIVE: To explore the effects of different interrupted stitch numbers at the conjunctival incision of horizontal strabismus fornix on the healing condition and compare them.

METHODS: 64 hospitalized patResults: (1) The incisions of amputated muscles in both groups had Stage Ⅰ Class-A healing five days after operation, with no cracking. (2) The incisions of recessed muscles in group B had Stage Ⅰ Class-A healing five days after operation, with no cracking. (3) 20 incisions of recessed muscles in group A had Stage Ⅰ Class-A healing five days after operation, with no cracking; more than 3mm in length of 12 incisions were still not completed healed, then these 12 incisions had Stage Ⅰ Class-A healing 10 days after operation, with no cracking.

RESULTS: (1) The incisions of amputated muscles in both groups had Stage Ⅰ Class-A healing five days after operation, with no cracking. (2) The incisions of recessed muscles in group B had Stage Ⅰ Class-A healing five days after operation, with no cracking. (3) 20 incisions of recessed muscles in group A had Stage Ⅰ Class-A healing five days after operation, with no cracking; more than 3mm in length of 12 incisions were still not completed healed, then these 12 incisions had Stage Ⅰ Class-A healing 10 days after operation, with no cracking.

CONCLUSION: One interrupted stitch for incision of recessed muscle may delay the incision healing of recession operation because of hypertension of amputated muscle. When selecting interrupted stitch number at the conjunctival incision of horizontal strabismus fornix, it is better to make two stitches for incision of recessed muscle and one stitch for incision of amputated muscle

PU-243

非肌电图下肉毒毒素治疗先天性内斜视的疗效观察

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目的：探讨非肌电图下肉毒毒素治疗先天性内斜视的临床疗效，为其作为斜视手术的替代疗法进行推广。

方法：对 2015 年 3 月至 2016 年 6 月在我院确诊的 20 例先天性内斜视儿童患者应用直视 Tenon 囊下注射 A 型肉毒毒素进行治疗，每次注射 2.5 u。在注射 A 型肉毒毒素后对患儿视力、屈光度、斜视度、双眼视觉功能等项目进行检查。

结果：对 20 例患儿治疗 6 个月后的治愈情况进行考察，总治愈率为 75.00%（15 例），而治疗 3 个月后的治愈率为 55.00%（11 例）。年龄 <3 岁的患儿治愈率为 77.78%，3~6 岁的患儿治愈率为 71.43%，>6 岁的患儿治愈率为 75.00%。。

结论：非肌电图下采用肉毒毒素对先天性内斜视患儿进行治疗的疗效良好。患儿年龄为 1.5~3 岁治疗效果更好，多次注射可

提高严重斜视患儿的治愈率。

Efficacy of Botulinum Toxin Therapy in Congenital Esotropia without Electromyograph

Abstract

AIM: In order to investigate the clinical efficacy of botulinum toxin in the treatment of congenital esotropia without Electromyograph.

METHODS: From March 2015 to June 2016, 20 patients with congenital esotropia were treated with direct injection of botulinum toxin A in our hospital, each injection of 2.5 u. The average age of children was 4.23 ± 1.31 years old, including 11males and 9 females. Visual acuity, diopter, strabismus, binocular visual function and other projects of children were observed after the injection of botulinum toxin type A, the follow-up periods were in 1 weeks, 2 weeks, 1 months, 2 months, 3 months and 6 months after treatment.The degree of strabismus was ≤10 △ as a standard, when the degree of strabismus was >20 △ after 3 months of treatment, the children were given the second injection.

RESULTS: The cure rate of 20 cases after treatment for 6 months was observed, the total cure rate was 75.00% (n = 15), and the cure rate after treatment for 3 months was 55.00% (n = 11). The cure rate of children aged <3 years was 77.78%, aged 3~6 years was 71.43%, and aged >6 was 75.00%. Children with singly injection were 12cases, the average degree of strabismus before injection was 43.56 △ , 6 months after treatment was 6.89 △ . Children with biphasic injection were 8cases, the average degree of strabismus before injection was 51.75 △ , 6 months after treatment was 11.29 △ . The degree of strabismus in children with 20~40, 40~60 and >60 were 11, 6 and 3 cases, the average degree of strabismus after 6 months follow-up were 5.34, 11.27 and 18.46, respectively.

CONCLUSION: The application of botulinum toxin in the treatment of congenital esotropia in children without electromyograph had good curative effect. The treatment effect was better when children were 1.5~3 years, and the multiple injection could improve the cure rate of children with severe strabismus.

PU-244

显微镜下眼外肌超常量后徙加调整缝线术在复杂斜视治疗中的应用

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目的：研究显微镜下眼外肌超常量后徙加调整缝线术在复杂斜视手术治疗中的应用效果。

方法：对 2014 年 9 月 -2017 年 4 月我院收住的 94 例复杂斜视患者，其中成年人 68 例、15 岁以上青少年 26 例，其中炎性假瘤继发性外上斜视 1 例，外伤继发性斜视 23 例（其中外伤继发性完全性动眼神经麻痹伴神经迷路 1 例），急性共同性内斜视 5 例，高度近视性固定性内下斜视 3 例，眼球后退综合征 3 例，双上转肌麻痹性斜视 4 例，分离性垂直性斜视 13 例，分离性垂直性斜视伴共同性外斜视 26 例，知觉性外斜视 12 例，知觉性内斜视 4 例，行显微镜下眼外肌超常量后徙加调整缝线术，待全麻苏醒后手术室或第 2 天（青少年）观察眼位及有无复视，如果需要调整缝线则在局麻下调整，术后第 1 天、第 7 天、1 个月、3 个月、半年、1 年观察眼位、结膜切口愈合情况、有无并发症。

结果：94 例患者全部一次性眼位矫正良好、复视消失，疗效满意，无一例出现肌肉滑脱等并发症。

结论：对复杂斜视患者行显微镜下眼外肌超常量后徙加调整缝线术，可显著增加一次性手术成功率，减少手术次数，减轻手术反应，减少患者的经济及思想压力，有临床推广应用价值。

Extra large recession of extrocular muscle under microscope cmbined with adjustable suture in the treatment of complex strabismus

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OBJECT: To object the effect of extra large recession of extrocular muscle under microscope cmbined with adjustable suture in the treatment of complex strabismus.

METHOD: We operated extra large recession of extrocular muscle under microscope cmbined with adjustable suture to the patients in my hospital from Sep.2014 to Apr.2017, who suffered from complex strabismus. We observed the patients in deferent period after operation.

RESULT: All the patients were cured one-off, whose diplopia disappeared and eye position became right whithout long-term problems and complications.

CONCLUSION: Extra large recession of extrocular muscle under microscope cmbined with adjustable suture in the treatment of complex strabismus is an effective method and worth clinical promotion ,with low complication rate and small trauma.

PU-245

上斜肌不全麻痹 224 例临床分析

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目的：探讨上斜肌不全麻痹例临床特点

方法：回顾性收集 2010 年 1 月至 2016 年 12 月我院眼科诊断上斜肌不全麻痹病例，分析病例年龄、性别、合并水平或垂直斜视情况、手术治疗及治疗效果。

结果：共收集上斜肌不全麻痹病例 224 例，主诉歪头 124 例、眼位不正 76 例，复视 24 例。男性 121 例，女性 103 例。年龄 1~60 岁，平均 10.27~10.09 岁。单眼发病 192 例（占 85.7%），双眼发病 32 例（占 14.3%），单纯上斜肌不全麻痹 42 例，合并内斜视 19 例，合并外斜视 25 例。根据病情给予下斜肌断腱术、下斜肌移位术、上斜肌折叠术、上斜肌移位术，或联合对侧眼下直肌后徙术或患眼上直肌后徙术。歪头患者术后代偿头位消失 89 例，改善 36 例，复视患者术后复视完全消失 17 例，改善 7 例。术前 Bielschowsky 歪头试验阳性 172 例，术后转阴 108 例，改善 64 例。

结论：先天性上斜肌不全麻痹患者通常以眼性斜颈就诊，易漏诊，临床需仔细甄别。手术以减弱亢进的下斜肌、加强麻痹的上斜肌为主，目的为改善头位或消除复视，对于年幼的患者以期能够恢复立体视。手术治疗效果确切。

Clinical analysis of 224 cases of superior oblique paralysis

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OBJECTIVE: To investigate the clinical features of superior oblique paralysis

METHODS: From January 2010 to December 2016, we collected the cases of the diagnosis of superior oblique paralysis in our hospital, and analyzed the age, sex, level or vertical strabismus, surgical treatment and therapeutic effect.

RESULTS: A total of superior oblique paresis in 224 cases, 124 cases with head and eye position is 76 cases, 24 cases with diplopia. There were 121 males and females (n = 103). Age 1~60 years old, average 10.2710.09 years old. There were 192 cases (accounting for 85.7%), and there were two cases of binocular (accounting for 14.3%). There were only 19 cases of superior oblique paresis, and of the other, there were only two cases with concomitant esotropia and the other with exotropia in 42 cases (n = 25). According to the condition of the inferior oblique muscle tendon surgery, inferior oblique muscle transposition, superior oblique muscle folding operation, superior oblique muscle transposition, or combined with the right side of the rectus muscle recession or patients with superior rectus recession. Minow postoperative compensatory head disappeared in 89 cases, improved in 36 cases, diplopia in postoperative diplopia disappeared in 17 cases, improved in 7 cases. Preoperative Bielschowsky head tilt test was positive in 172 cases, 108 cases were negative after operation, 64 cases were improved.

CONCLUSION: Congenital superior oblique paresis were usually in ocular torticollis patients, manifested as oblique hyperfunction secondary, with intraocular transfer hyperfunction, in turn limited Bielschowsky head tilt test was positive, there is vertical strabismus, with horizontal strabismus, missed diagnosis, clinical need to be carefully screened. The main purpose of the surgery is to reduce the inferior oblique muscle and strengthen the superior oblique muscle. The purpose of this study is to improve the position of the head or eliminate diplopia. Surgical treatment effect.

PU-246

病例报道：改良斜视手术治疗伴有上直肌麻痹的上睑下垂

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目的：国内外报道中较少见伴有上直肌麻痹的上睑下垂的病例，在明确诊断的病例中 , 单纯矫正上睑下垂不能收到较好效果，且易加重斜视、复视等并发症。本次报道针对一例伴有上直肌麻痹的上睑下垂患者，排除其神经系统器质性病变后行改良的眼科斜视手术方式矫正上直肌麻痹，评估其术后效果。

方法：患者男性，12 岁，因“上直肌麻痹（左）、上睑下垂（左）”入院 (图 1), 行 MRI 排除颅脑神经损伤、占位病变 (图 2), 根据斜视度测定给予左眼外直肌和内直肌肌腹移位术及下直肌后徙术。

结果：术后进行眼位检查，Krimsky 法检查右眼注视正位，左眼注视。

结论：应用左眼外直肌和内直肌肌腹移位术及下直肌后徙术进行矫治上睑下垂伴有上直肌麻痹收到良好效果。

An unusual strabismus surgery for ptosis with superior rectus palsy: a case report

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OBJECTIVE: Several procedures have been developed to correct ptosis，but the treatment of ptosis with superior rectus palsy is less reported. Complications following the common ptosis surgery for it are reported in some literature. Herein, we report an unusual surgery for the disorder.

METHOD: A 12 year young male with left ptosis with superior rectus palsy，accepted left superior rectus and medial rectus transposition combined with inferior rectus recession.

RESULT: Postoperatively, Krimsky test shows the ocular position corrected well.

CONCLUSIONS: The superior rectus and medial rectus transposition combined with inferior rectus recession may be considered as a new surgery for ptosis with superior rectus palsy.

PU-247

垂直肌部分后徙术治疗小度数垂直斜视的临床观察

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目的：分析垂直肌部分后徙术治疗小度数垂直斜视的疗效。

方法：对 3 例小度数垂直斜视患者采用垂直肌部分后徙术治疗。小度数垂直斜视原在位斜视度数均小于 10Δ，垂直肌部分后徙术是将垂直肌的附着点处肌肉剪断大概 1/2 宽度，然后将肌肉缝合在附着点后需要后徙的相对位置的巩膜上。

结果：小度数垂直斜视的患者斜视度均得到了很好的矫正效果。

结论：垂直肌部分后徙术是一种新的手术方式，矫正小度数垂直斜视效果确切。垂直肌部分后徙术一般后徙 1mm矫正 1.5Δ。

Clinical observation on the treatment of Partial tendon recession for small-angle vertical strabismus

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OBJECTIVE: to analyze the curative effect of vertical muscle Partial tendon recession for small-angle vertical strabismus.

METHODS: 3 cases of small-angle vertical strabismus patients were treated with Partial tendon recession. Small degree of vertical strabismus strabismus in primary position were less than 10Δ, vertical muscle recession is part of the vertical muscle attachment point muscle cut about 1/2 width, then the muscle suture in the relative position of the attachment point after the recession of the sclera on the need.

RESULTS: the degree of strabismus in patients with small vertical strabismus was corrected.

CONCLUSION: the vertical muscle Partial tendon recession is a new surgical method to correct small-angle vertical strabismus . The amount of surgery is generally 1mm recession correct 1.5Δ.

列题交流 / Title Listed

LT-01

青少年及成人弱视治疗效果分析

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目的：探讨青少年及成人的弱视治疗效果。

方法：观察 13-25 岁的青少年及成人弱视 21 人 26 只眼，单眼弱视者 16 人，双眼弱视者 5 人，合并斜视者 4 人，初次治疗者 13 人 15 眼 ; 采用传统的屈光矫正、遮盖、精细目训练，每 3 个月进行 1 次视力检查，随访半年至 1 年。

结果：视力平均提高 2.55 行，其中单眼弱视者平均提高 3.56 行，双眼弱视者平均提高 1.8 行，单双眼治疗组间疗效有统计学差异（$P < 0.05$）；初次治疗者平均提高 3.82 行，既往有治疗者平均提高 1.23 行，两组间疗效有统计学差异（$p < 0.05$）；13-15 岁治疗组平均提高 2 行，16-18 岁治疗组平均提高 2.74 行，19-21 岁年龄组平均提高 3.4 行，22-25 岁治疗组平均提高 3.33 行 ,19-21 岁年龄组及 22-25 岁年龄组与 13-15 岁年龄组及 16-18 岁年龄组疗效两两比较均有统计学差异（$p < 0.05$）。

结论：青少年及成人弱视仍有治疗价值，尤其是既往未曾治疗的无合并斜视的屈光参差性弱视患者，合并斜视、双眼弱视、既往曾配镜、遮盖治疗是疗效的不利因素。高年龄组（19-25 岁）治疗效果优于低年龄组（13-18 岁）。

Analysis of therapeutic effect of amblyopia in adolescents and adults

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OBJECTIVE: s To observe therapeutic effect of amblyopia in adolescents and adults

METHODS: We observed 26 amblyopic eyes of 21 patients in adolescents and adults with age of 13ys to 25ys,the average age was 19.2 years.followe-up visited for 6 monthes to 12 monthes.

RESULTS: The visual acuity improved by an average of 2.55 lines.

CONCLUSIONS: There is therapeutic value of amblyopia in adolescents and adults.

LT-02

50 例弱视儿童治疗前后图形视觉诱发电位检查的对比分析

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目的：探讨弱视儿童治疗前后图形视觉诱发电位（P-VEP）P100 波的变化。

方法：对 50 例（78 眼）7~12 岁的弱视儿童在治疗前后分别进行 P-VEP 检测，同时对 30 例 7~12 岁正常儿童检测，将资料进行对比、分析。

结果：发现弱视儿童 P-VEP 的 P100 波振幅明显低于正常对照组，潜伏期则比正常对照组明显延长。结果差异有显著性（$P<0.01$）; 弱视经治疗后 P-VEP 均有改善，重度弱视治疗前后结果差异有显著性（$P<0.05$）。

结论：P-VEP 是诊断弱视的可靠依据。儿童弱视治疗过程中定期检查 P-VEP，能评价治疗效果，指导下一步治疗。

comparative analysis between pretherapy and post-treatment In P-VEP about 50 Amblyopic children

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PURPOSE: *To discuss P100 wave of pattern visual evoked potential(P-VEP) change In Amblyopic children pre-therapy and post-treatment.*

METHOD: 78 eyes of 50 children 7 to 12 year-old with amblyopia were examined using the P-VEP instrument before and after treatment. 30 eyes were also examined in normal group.The difference was assessed.

RESULTS: We Find that amplitude of P100 wave in amblyopia children significantly lower than that in the normal controled group. The incubation period is extended in amblyopia children group. The difference is significant（$P<0.01$）. P - VEP was obviously improved

after treatment in Amblyopia group. There are significant difference after treatment in serious amblyopia group（P<0.05）.

CONCLUSIONS: P-VEP is a reliable basis in the diagnosis of amblyopia. We can use P-VEP to evaluate the effect of the treatment and to Guide the next treatment in Amblyopia children's follow-up.

LT-03

强化遮盖综合治疗儿童单眼弱视疗效分析

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目的：探讨强化遮盖综合疗法治疗儿童单眼弱视的疗效。

方法：对确诊为儿童单眼弱视的 216 例 216 眼门诊儿童患者，按弱视病因，分别给予以强化遮盖治疗为主，联合屈光矫正、红光闪烁、后像等综合治疗，随访观察 12~36 个月，分析其疗效。

结果：216 例 216 眼，治愈者 67.13%，进步 28.70%，无效 4.17%：出诊年龄越小，治疗效果越好：屈光不正性弱视、轻度弱视、中心注视性弱视治疗效果更好。

结论：弱视的疗效与患儿的年龄、弱视的类型、弱视的性质、弱视的程度密切相关，强化遮盖综合疗法治疗儿童单眼弱视疗效显著。

LT-04

眼针为主联合补阳还五汤治疗难治性视神经病变疗效观察

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目的：观察眼针为主联合补阳还五汤治疗难治性视神经病变的疗效。

方法：本研究采用随机、对照的方法将 86 例难治性视神经病变患者随机分为 2 组，对照组 42 例 52 眼，予口服甲钴胺片、胞磷胆碱钠片、肌注维生素 B1、B12 等常规治疗；治疗组 44 例 56 眼，治疗组在对照组的治疗基础上加服补阳还五汤加减及行睛明、球后、上明等眼三针为主的特色眼针治疗。1 个疗程为 1 个月，1 个疗程结束后休息 3 天进入下个疗程。2 个疗程结束后进入统计。

结果：治疗组总有效率为 82.4%；对照组总有效率为 62.1%。两组疗效比较，差异有显著性意义（P<0.01）。

结论：眼针为主联合补阳还五汤治疗难治性视神经病变疗效满意。

LT-05

中医外治法治疗儿童弱视病例分析

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弱视是儿童常见眼病，无器质性病变，表现为功能性障碍。弱视的常规治疗方法有疗程长、视力回退现象明显，对于重度弱视办法不多、效果不佳缺憾。中医外治法治疗方法多样，操作简便，效果显著，运用到儿童弱视治疗中可取得良好效果。

The case analysis about external treatment of traditional chinese medicine treating children amblyopia

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Amblyopia is a common eye disease in children with no organic lesion，the conventional treatment course is long，the fallback phenomenon is obvious，not have too much ways and better effects for the severe amblyopia. The external treatment of traditional chinese medicine have many features such as various methods，easy to handle and remarkable effects. It can get a good effect in treating children amblyopia.

LT-06

成人斜视手术的半球后注射麻醉

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目的：探讨斜视手术的麻醉方法。目前儿童斜视手术普遍采用全麻手术方法。因全麻的诸多优点，一些医师也将全麻引入成人斜视手术中。但还有些医师仍用点眼局部麻醉和结膜下注射局部麻醉的方法。本文提醒鉴于点眼局麻 · 结膜下注射局麻在斜视手术牵拉肌肉时仍引起病人痛苦，甚至发生眼心反射问题，半球后注射麻醉仍不失为斜视手术中无痛苦的麻醉方法之一。不应被遗忘。

方法：准备好注射器，药物。患者取仰卧位，用 0.2% 的碘伏消毒下眼睑皮肤两次，患者双眼注视天花板，嘱其眼球不要转动，用 2.5 毫升注射器（针头长度不超过 2 厘米）于眼睑下缘中外 1/3 处垂直刺入，缓慢进针，针头全部刺入回抽无回血后，缓慢推药，注射完毕，拔出针头，闭合眼睑，以无菌棉球按压局部 3-5 分钟，以帮助药物吸收及预防出血和降低眼压。

结果：半球后注射是将药液注射到外直肌与视神经之间的睫状神经节旁。如注射的好，患者在斜视手术中确实没有痛苦，有利于斜视手术的顺利进行。

结论：在今天人们广泛认可手术矫正斜视的时代，半球后注射麻醉也仍然是免除病人术中痛苦的比较好的麻醉方法，应当灵活应用于临床。

Semiretrobulbar injection in adult squint surgery

Sunhong
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OBJECTIVE: Discussing anesthesia method in strabotomy.Semiretrobulbar injection is a way making no signs of distress in aduit strabotomy .

METHODS: Patient lied on his back.Disinfected skin in below eyelid maked use of 2% lodophor.Rushed into below eyelid the sino-foreign intersection point in 2.5 ml injector.Depth about 2 cm.Sucking have not blood.Injecting drug slowly.

RESULTS: Semiretrobulbar injection is jinjected drug into cilary ganglion nearby between external rectus and optic nerve.It is a way making no signs of distress in aduit strabotomy.

CONCLUSION: Semiretrobulbar injection is still a good way of avoided distress in aduit strabotomy.

LT-07

上转肌麻痹引起假性上睑下垂误诊一例

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合垂直斜视的上睑下垂患者，其眼睑下垂可能为垂直肌麻痹引起，贸然行上睑下垂手术，术后无效，引起医患矛盾。此类患者行垂直斜视矫正术后，上睑下垂自然好转。单眼上转不足（双眼上转肌麻痹）：是指同一眼的上直肌和下斜肌同时麻痹，患眼表现为下斜视，伴有假性上睑下垂，健眼表现为上斜视。但也有约半数患者存在真性上睑下垂，有高达 1/3 患者存在下颌瞬目综合征。

A case of superior oblique muscle palsy misdiagnosed as ptosis

Ping Wang
The fourth hospital of Xi'an

Patients with upper eyelid ptosis,ptosis may be caused by vertical muscle paralysis,need careful examination.Such patients after strabismus surgery,ptosis natural improvement.

LT-08

两种三棱镜检查斜视角的差异

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武汉爱尔眼科医院

目的：对比研究斜视术前检查中直角三棱镜与等腰三棱镜检查斜视角的差异性变化。

方法：对我院 2016.6-2016.9 期间明确诊断为“共同性外斜视”的 100 名患者分别用直角三棱镜及等腰三棱镜以交替遮盖法

进行斜视角检查测量。对数据结果进行相关性分析。

结果：1. 直角三棱镜检查出的斜视角为 50.65 ± 16.52 △ 时，等腰三棱镜检查出的斜视角为 41.38 ± 10.95 △，两者差值为 12.59 ± 2.38 △，差异有统计学意义，P ＜ 0.05；2. 当直角三棱镜检查值为 40 △、60 △、80 △、100 △时，等腰三棱镜的检查值为 36.45 ± 2.65 △、53.13 ± 2.04 △、65.28 ± 1.12 △、81.35 ± 0.78 △、差异具有统计学意义，P ＜ 0.05。

结论：直角三棱镜和等腰三棱镜在斜视术前检查中存在差异，其中等腰三棱镜检查的结果偏小，且斜度越小的患者，两者间差别越小。

The difference between two kinds of prisms in examing the oblique angle

Linmeng

Wuhan Aier Eye hospital

OBJECTIVE: Contrast study of the difference between right angle prism and isosceles angle prism in examing the oblique angle before strabismus surgery.

METHOD: Firstly, select 100 patients who was diagnosed as concomitant exotropia by Our hospital in the period of 2016.6 ~ 2016.9 . Then exam the oblique angle of these patients with right angle prism and isosceles angle prism respectively by using alternating cover test. Finaly, do the correlation analysis of the data result.

RESULT: When the result of the oblique angle examed by right angle prism was 50.65 ± 16.52 △ , the result examed by isosceles angle prism was 41.38 ± 10.95 △ . The difference between two of them was 12.59 ± 2.38 △ , which was statistically significant, P ＜ 0.05. When the result examed by right angle prism was 40 △、60 △、80 △、100 △ , the result examed by isosceles angle prism was 36.45 ± 2.65 △、53.13 ± 2.04 △、65.28 ± 1.12 △、81.35 ± 0.78 △. The difference between two of them was statistically significant, P＜ 0.05.

CONCLUSION: There is a difference between right angle prism and isosceles angle prism in examing the oblique angle before strabismus surgery. Generally speaking, the result of the oblique angle examed by isosceles angle prism is lesser than right angle prism. And the lesser the angle, the lesser the difference.

LT-09

眼肌直刺特色疗法治疗麻痹性斜视的即时疗效观察

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目的：观察眼肌直刺特色疗法对麻痹性斜视的即时疗效。

方法：将 120 例麻痹性斜视患者随机分为 3 组，分别采取不同的治疗方法。治疗 1 组（A 组）40 例：此组观察一般的针刺方法对麻痹性斜视的即时斜视度的影响；治疗 2 组（B 组）40 例：此组观察眼肌直刺特色疗法对麻痹性斜视的即时斜视度的影响；对照组（C 组）40 例：此组观察现代医学对麻痹性斜视的即时斜视度的影响。各组在治疗前使用同视机检测斜视度；治疗 1 组及治疗 2 组在治疗后 10 分钟内；对照组在口服维生素类药物 1 小时后使用同视机检测各组的斜视度。

结果：3 组患者治疗后即时斜视度比较，差异有统计学意义（P<0.05）。治疗 2 组的治疗前后即时斜视度比较，差异有显著性意义（P<0.01）。

结论：眼肌直刺特色疗法治疗麻痹性斜视的即时疗效明显。

LT-10

双眼均处于外斜位斜视一例

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河北省邢台市眼科医院

王海薇，女，14 岁，学生，河北省石家庄市元氏县因村人。主因双眼向外偏斜 14 年于 2017-03-06 入院。

查体：面部表情麻痹，无表情。眼部检查：视力右眼 0.25，左眼 0.4，验光：右眼 +5.50S/+3.00C × 75=0.3，左眼 +5.50S/+1.25C × 180=0.3。右眼睑轻度闭合不全。双眼睑缘位置正常，双眼角膜清，晶状体透明，眼底视盘边界清，颜色淡红，C/D 比约 0.6，视网膜血管走形及比例大致正常，黄斑区中心凹反光可见。

眼肌检查：双眼不能正视，双眼处于外转位。角膜映光：OD-50°，OS-50°，双眼可见水平样眼球震颤，双眼可轻微外转，余双眼球运动均受限。牵拉试验（+）。代偿头位：面向右，视线向左，头位扭转角 35°。

辅助检查：无。

既往史：体健。

Interventional case report

Huifang Han
HeBeiSheng Eye Hospital

A 14-year-old girl presented with constant exotropia at birth was admitted to hospital on Marth 6,2017.Physical examination showed stiff fa-cial expressions.

Ophthalmologic examination:

The uncorrected visual acuity was 0.4 left, 0.25 right eye.The results of optometry was +5.50S/+3.00C × 75=0.3 and +5.50S/+1.25C × 180=0.3 in her right and left eyes respectively. There was no obvious abnormality in anterior segment and posterior segment of eye. The position of both eyes were abduction.Ocular muscle examination showed that eyeball movement were limited in the nine diagnostic positions. The ocular muscle traction test was positive. Horizontal nystagmus could be revealed in both of the eyes.The compensatory head posture were facing to left and looking right.

LT-11

成人共同性斜视术后近立体视功能恢复的因素分析

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深圳市眼科医院

目的：探讨成人共同性斜视矫正术后近立体视功能恢复的影响因素。

方法：分析 35 例成人患者（21 例外斜视，14 例内斜视），Titmus 立体视图谱查术前近立体视功能均 ≥400 " 。术后 3 月测近立体视功能等，对患者术后眼位、斜视类型及斜视病程等影响因素进行分析。

结果：22 例术后眼位 ≤ ± 8 △患者，9 例（40.9%）获得立体视，13 例术后斜视度 > ± 8 △患者无人获得立体视；术后眼位对立体视功能提高影响明显（$P < 0.05$）。病程 < 10 年患者术后立体视（60.0%）较病程 ≥10 年患者术后立体视（20.0%）功能提高不明显（$P > 0.05$）。21 例外斜视患者术后立体视功能（38.1%）较 14 例内斜视患者术后（7.1%）明显提高 ($P < 0.05$)。

结论：成人共同性斜视术后立体视功能仍有可能恢复。术后视功能恢复情况主要取决于术后眼位及斜视类型。

Factors affecting improvement of near stereopsis following strabismus operation in adult concomitant strabismus

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OBJECTIVE: To evaluate the factors affecting improvement of near stereopsis following surgical correction of adult concomitant strabismus .

METHODS: In a prospective study, 35 patients (21 cases of exotropia and 14 cases of esotropia) with concomitant strabismus; near stereoacuity of more than 400 seconds of arc in Titmus tests were enrolled. The patients were aligned by surgery. Postoperative stereopsis testing was performed at 3 months after surgery. The postoperative position of eye, the type of strabismus, course of strabismus and the recovery of visual function post-surgery were analyzed.

RESULTS: 9 cases of 22 patients (40.9%) who had orthotropia(≤ ± 8 △) gained stereopsis, whereas none of 13 patients who had horizontal heterotropia (> ± 8 △,esotropia or exotropia) gained stereopsis Postoperative alignment had influence on improvement of stereopsis ($P < 0.05$). Misalignment of 10 years' duration or longer did not preclude the development of postoperative stereoacuity ($P > 0.05$). There was a statistically insignificant increase in improvement of stereopsis in 21 cases of exotropia (38.1%) compared with 14 cases of esotropia (7.1%) ($P < 0.05$).

CONCLUSION: The stereopsis of adult concomitant strabismus can be reestablished by surgery. Postoperative stereoacuity recovery mainly depends on the postoperative alignment and type of strabismus.

LT-12

双眼外直肌后退手术对间歇性外斜视的疗效观察

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阜阳市人民医院

目的：研究双眼外直肌后退术对各型间歇性外斜视的手术疗效。

设计：非随机性，回顾性研究

方法：收集我院 2014 年 7 月至 2015 年 7 月行双眼外直肌后退手术的 52 名间歇性外斜视患者进行回顾性研究，术后至少随访半年。记录比较每一位患者术前及术后的眼位及视功能，分别记录其术前及术后，看远和看近的平均斜视度，以及远近斜视度差值的改变。

结果：本次研究共 52 名患者，其中基本型 28 例，外展过强型 11 例，集合不足型 13 例，均行双眼外直肌后退手术，术前、术后斜视度数变化具统计学意义。

结论：双眼外直肌后退术是治疗各型间歇性外斜视的有效手术方式。

Bilateral Lateral Rectus Muscles Recession for Types of Intermittent Exotropia

LingMa

FuYang people's Hospital

PURPOSE: To evaluate the surgical efficacy of bilateral lateral rectus recession (BLRR) for the diffentent type of intermittent exotropia (IXT).

Design: Nonrandomized, retrospective case series.

METHODS: Fifty-two patients between July 2014 and July 2015 were included.The medical records of the CI-type IXT patients who underwent BLRR and had been followed up half year were retrospectively reviewed. The ocular alignment and sensory status were evaluated pre- and postoperatively for each patient. The mean of the distance and near deviation as well as the near-distance difference were compared pre- and postoperatively.

RESULTS: The mean of exodeviations were significantly reduced from 32.5 PD preoperatively to 0.08 PD postoperatively ($P < 0.001$) at distance, and from 45 PD preoperatively to 2.4 PD ($P < 0.001$) postoperatively at near. The mean of the near-distance difference was collapsed from 16 PD preoperatively to 2 PD postoperatively ($P < 0.01$).

CONCLUSION：Bilateral lateral rectus recession is effective for treatment of all types IXT.

LT-13

斜视病人的心理问题需要关注

孙红

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目的：探讨斜视病人的心理问题的 严重性，斜视手术是解决方法之一。

方法：介绍一个 5 岁男孩自出生左眼无视力，角膜白斑，轻度眼球萎缩，大角度内斜视伴 DVD。他的父母一直转辗全国各大医院，寻求恢复视力，无果后，希望左眼无斜视，角膜无白斑，但因有眼球轻度萎缩，担心手术后加重眼球萎缩，并且不愿意行眼球摘除。而迟迟不敢手术。经我们检查后，给予左眼内直肌后退，下斜肌转位下直肌颞侧。术后一个月给予美容隐形眼镜佩戴。

结果：达到了患儿父母的要求，解决了他们的心理问题。

结论：在今天斜视医生更多关注儿童双眼视觉的同时，也不要忘记那些追求美容的心理述求。通过斜视手术等现代医学技术，同样能达到另一个更高医学价值，解决影响他们一生的心理需求。

Strabotomy doctor pay close attention psychological problems of strabismal patient.

Sunhong

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OBJECTIVE: Discussion of strabotomy aim.

METHODS: Introducing a case:A boy,five year.his right eye vision is 1.0,Left eye vision is not light sensation.His left eye cornea has great white spot from his birth and mild atrophy of eyeball,large angle esotropia.these are great psychological trauma for his parents. Ours strabolomy for his is recession of the medial and inferior oblique dislocation.He has gaved a beauty contact lens after a month.

RESULTS: This boy is not seen abnormal by stranger.his parents psychology shadow are discharged.

CONCLUSION: Pediatric ophthalmology doctor pay close attention children's psychological problems.

LT-14

Helveston 综合征一例

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本文汇报一例Helveston综合征患者手术疗效。患者，男,19 岁，眼科检查：眼位：角膜映光:OS:-15° 。三棱镜+交替遮盖：

REF：33cm :-50△ L/R4△，5m:-60△ L/R5△ ;LEF：33cm :-50△ R/L7△，5m:-60△ R/L7△ 。A 征 (+)。2016-10-19 在局麻下行“双眼上斜肌减弱 + 左眼外直肌后徙 6mm+ 内直肌缩短 4mm。

Helveston syndrome: a case report

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This paper reports the effect of surgical of a Helveston syndrome patient.The patient ,male,at the age of 19.Examination of the eyes:hirschberg test：-15 ° 。Prism plus cover test:REF：33cm : -50△ L/R4△，5m：-60△ L/R5△ ；LEF：33cm ： -50△ R/L7△，5m：-60△ R/L7△ .A-pattern(+).On October-19-2016,the patient underwent the weakening of bilateral superior oblique muscle and recession of rectus lateralis 6.0 mm and resection of rectus medialis 4.0 mm of the left eye,Under general anesthesia .

LT-15

单眼双上转肌减弱矫治先天性下直肌发育不良 1 例

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患者，女，2 岁，发现右眼向上偏斜 1 年余，随年龄增加，上斜加重，未经任何治疗，于 2017 年 2 月 15 日就诊我院。全身检查无异常发现。患儿不会测视力，阿托品散瞳验光：右眼 +2.50DS，左眼 +1.75DS，右眼角膜被上眼睑遮盖，仅露下方约 2mm 边缘。三棱镜 +Krimsky 检查：-10 △，R/L80 △，眼球运动：右眼上转亢进，下转不能达中线。眼眶 CT 示：右眼下直肌细小，右侧内直肌及左侧上直肌稍增粗。初步诊断右眼上斜视（右眼先天性下直肌发育不良）。在全麻下行右眼上直肌、下直肌牵拉试验无异常，先行右眼上直肌后徙 7mm，再探查下直肌，分离 Tenon 氏囊及周围组织，充分暴露下方巩膜，在 6 点的角膜缘后 6mm 处巩膜面上见一带状半透明纤维膜附着，牵拉无弹性，肉眼可见少许肌纤维。钩下斜肌，于下斜肌肌腹中央作套环缝线，不剪断斜肌，并将下斜肌转位固定于下直肌颞侧止点旁的浅层巩膜上，缝合球结膜。术后第一天复查眼位基本正位，外观满意，右眼能下转 15° 。

Turn on ocular elevator muscle weaken to treat congenital diseases of rectus muscle dysplasia , case report

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Patient, female, 2 years old, found in the right eye upward deflection more than 1 year, along with the age increase, the superior oblique is aggravating, without any treatment, clinic hospital on February 15, 2017. The whole body check no abnormal findings. Atropine mydriatic optometry：+ 2.50 DS in the right eye, left eye + 1.75 DS, right eye cornea is covered with upper eyelid, just below the dew about 2 mm edge. Prism + Krimsky : - 10 △ , R/L80 △ , binocular movement: the right eye superduction, turn not up to the midline. Orbital CT: right eye rectus muscle under the small, and the left rectus muscle of right medial rectus muscle enlargement. Primary diagnosis on right eye strabismus (right eye congenital inferior rectus muscle dysplasia). On a general downward in the right eye rectus muscle, the rectus muscle pull test no abnormalities, first on the right eye rectus migration after 7 mm, to probe the rectus, separation of Tenon’s capsule and the surrounding tissue, fully exposed the sclera, at 6 PM of 6 mm after corneal limbus see a translucent ribbon fiber membrane sclera surface adhesion, pull inelastic, visible to the naked eye a little muscle fibers. Hook under oblique muscle and the inferior oblique muscle muscle belly central as a set of circular seam line, don’t cut oblique muscle, and inferior oblique muscle transposition rectus muscle under fixed in the temporal side check the superficial sclera beside the point, closing a conjunctival. On the first day after review of the eye is a basic, satisfactory appearance, under the right eye can turn 15 ° .

LT-16

外伤性麻痹性斜视手术修复成功一例

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目的：撕裂伤引起的斜视手术中及时探查肌肉并复位是恢复眼位及肌肉功能的关键。

方法：视力：右眼 0.3（0.9）/-；左眼 0.3（0.3）/-。眼球运动：外上方运动可，余各方向运动明显受限。角膜映光：REF：-10° L/5° 。眼球运动：。单眼运动：左内下、外下转动不过中线，外转过中线 5° ，内转过中线 10° ；核磁共振：外直肌稍粗。因外院已注肉毒素，建议半年后复诊。半年后：视力：右眼 0.4；左眼 0.5。头位：面向右转，下颌轻度上举，交替遮盖：OU

由内→正。角膜映光：OS：+5° ，不可控正。眼球运动： ；单眼运动：左外转过中线 5° 。同视机：十字画片：REF：+9° ；LEF：+26° R/5° 。手术方法：术中左眼颞侧球结膜见纵行瘢痕，从颞上方做穹隆部切口，探查外直肌存在，肌束约 7-8mm，肌止端宽度 10mm，肌肉僵硬无弹性外直肌周围瘢痕化呈条索状改变，牵拉受限明显，故改行拮抗剂减弱手术，退内直肌 5mm 后观察：头位消失，角膜映光：正位，交替遮盖 OD：不动，OD：微外→正。单眼运动：左外转过中线 10° 。

结果：患者第一眼位斜视度治愈。

结论：外伤引起眼位改变时，手术中探查肌肉不能轻易放弃，应积极寻找肌肉复位。

Successful surgical repair for traumatic paralytic strabismus: a case report

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of bulbar conjunctiva. These tissues could not be clearly differentiated. Lateral rectus was detected through the fornix incision in the superior temporal, the muscle bundle was 7-8 mm and the width of apodeum was 10 mm. Lateral rectus was rigid without elasticity, and the scar around it became funicular, significantly restricting its stretch ability. Hence, antagonist weakening surgery was performed. Minus medial rectus for 5 mm, surgeons observed that head position was disappeared, corneal reflection was in frontal position, alternate occlusion (OD?) was stabilized, OD changed from slightly external to frontal position. The single eye movement for left obversion is 10° cross the midline. One week later, this patient was in stable condition.

RESULTS: The primary position of gaze of strabismus in this patient was cured.

CONCLUSIONS: During the surgery of trauma induced position of gaze changing, muscle detection should not be easily given up, but positively search for muscle recovery.

LT-17

显微镜下保留睫状血管直肌联结术治疗陈旧性外直肌麻痹一例

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目的：观察显微镜下保留睫状血管直肌联结术治疗陈旧性外直肌麻痹性内斜视的手术效果。

方法：右眼外直肌麻痹性内斜视患者 1 例，病程 10 年，内斜度数 >45° ，外转刚到中线。显微镜下分离出上下直肌的睫状血管，其颞侧肌束分别与外直肌上下半侧连接，同时行同侧内直肌后退，随访 2 年。

结果：手术后第一天正位，外转明显好转，内外转均欠 2mm。患者非常满意，未发现眼前节缺血等并发症。随访两年无复发，右眼外转大于 45° ，接近正常位置。

结论：显微镜下保留睫状血管直肌联结联合同侧内直肌后徙术治疗外直肌麻痹效果理想 , 显微镜下分离睫状血管降低了眼前节缺血发生的风险。

Jensen procedure with anterior ciliarly vessels reserved for the treatment of long -standing lateral rectus muscle paralysis

Wang Jianfeng
The first Affiliated Hospital of Bengbu Medical College

OBJECTIVE: To observe the effect of Jensen procedure with anterior ciliarly vessels with for the treatment of one case with the lateral rectus muscle paralysis.

METHODS: Jensen procedure preservating Anterior ciliarly vessels was performed on this case with the course of desease for 10 years, combined with a lateral rectus recession . This case was followed- up for 2 years.

RESULTS: The primary eye position was right and abduct function was most partially recovered at the first day after surgery. With the follow-up of 2 years, the abduction of over 45° was obtained. Anterior segment ischemia was not occurred.

CONCLUSION: Jensen procedure preservating anterior ciliarly vessels is an useful method for the treatment of the long -standing sixth nerve paralysis. Anterior ciliarly vessels sparing may reduce the risk of anterior segment ischemia.

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【用法、用量】
一般1天3次。每次滴眼1滴，根据症状可适当增减。对角膜炎的治疗在急性期每15~30分钟滴眼1次，对严重的病例在开始30分钟内每5分钟滴眼1次，病情控制后逐渐减少滴眼的次数。治疗细菌性角膜溃疡推荐使用高浓度的抗生素滴眼制剂。

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