



# ePoster Abstracts

## Pseudomyopia and its varied manifestations- a case series

Dr Shilpa Rao<sup>1</sup>, Dr Rajib Mandal<sup>1</sup>, Dr E Lakshmi<sup>1</sup>, Dr Krishna Prasad Kudlu<sup>1</sup>

<sup>1</sup>Prasad Nethralaya, Udupi, Udupi, India

**Purpose:** The findings of this prospective case series study underscores the importance of using cycloplegic refraction to detect patients with pseudomyopia, as well as the role of cycloplegia and vision therapy in its management. This study aims to describe a series of pseudomyopia cases and their management at our hospital.

**Setting/ venue:** Subjects presenting with pseudomyopia between February 2022 and March 2023 at Prasad Nethralaya, Udupi were included in the study.

**Methods:** The subjects of this prospective study (5 females & 1 male) reported blurred vision over a few weeks duration and their symptoms worsened with prolonged close work and stressful conditions. Initially, their refraction indicated myopia, but a hyperopic shift was observed after inducing cycloplegia. Post cycloplegic refraction with proper distance correction and a near add of +2.50DS. Best Corrected Visual Acuity at distance and near was 0 log unit. Based on these findings, a diagnosis of pseudomyopia was made, and the patients were prescribed bifocal glasses and cycloplegic eye drops and advised to avoid exacerbating factors.

**Results:** The average pre and post cyclorefraction visual acuity at distance was 0.81 and 0 as per LogMAR chart (ranging from 1.30 to 0.60 log unit). After confirmation of diagnosis all patients underwent a short course of cycloplegic therapy followed by vision therapy. Over the course of one to three months, the patients were gradually tapered off the treatment to prevent recurrence and were followed up for six months, during which no recurrence was observed. Once cycloplegia ceased, the patients were referred for visual therapy to balance their accommodation status. After completing the cycloplegia and vision therapy treatment, all patients had their complaints resolved.

**Conclusions:** Without proper cycloplegic refraction, pseudomyopia can be misdiagnosed. In most cases there are triggering factors, but sometimes there the triggering factors are not easily identified; hence reaching the final diagnosis may take longer. Slow weaning of cycloplegics along with binocular vision therapy prevents the recurrence of pseudo-myopia. Overall, this study highlights the importance of accurate diagnosis and individualized management for patients with pseudomyopia, using a combination of cycloplegia, appropriate corrective lenses, and vision therapy.

**Financial disclosure:** The study's author and co-authors do not have any financial stake or affiliation with the companies involved in the production of vision therapy equipment or pharmaceuticals.

## Unilateral epicapsular stars and lenticular pigmentation presenting with esotropia and amblyopia in a 9-year-old female: a case study

M.D. Phd Judit Körtvélyes<sup>1</sup>, Johanna Barbarics<sup>2</sup>, Katalin Varga<sup>2</sup>, M.D. Jeannette Tóth<sup>1</sup>, M.D. Patricia Domsa<sup>1</sup>

<sup>1</sup>Non Plus Ultra Visioncenter, Budapest, Hungary, <sup>2</sup>Hungarian Charity Service of the Order of Malta, Budapest, Hungary

Purpose: We present a 9-year-old female patient with unilateral lenticular stars and congenital lenticular pigmentation of her left eye, resulting in mild amblyopia and esotropia.

Setting/Venue: Case study

Methods: The patient was screened within the Paediatric Ophthalmology Screening Program of Hungarian Charity Service of the Order of Malta.

Results: The right eye had a best-corrected visual acuity (BCVA) of 1.0, while her left eye had a BCVA of 0.7. Cycloplegic automated refractometry showed +0.75Dsph+0,5Dcyl 56° on the right side and +1,5Dsph on the left side. The patient had esotropia of the left eye, the angle of deviation was 4-5 prism diopters. Slit lamp examination revealed epicapsular stars and spindle-shaped brownish pigmentary deposits in a smaller patch above the centre and an 'Australia-shaped' bigger patch slightly temporally and below the centre on the anterior lens capsule. Axial length measurement was 23.15 mm and 22.56 mm for the right and left eye, respectively. The eyeballs were otherwise normal, no other abnormalities were seen.

Conclusion: Congenital epicapsular stars and lenticular pigmentation are rare ocular abnormalities. They do not usually affect visual acuity, but there may be ametropia and/or amblyopia on the affected side, as seen in our case. In extreme conditions, surgical intervention may be necessary to improve visual acuity.

In our case, considering the age of the child and the very mild amblyopia, we did not prescribe glasses and did not start patching.

Financial Disclosure: Authors have no conflict of interest to declare

## Electroretinograms in patients with albinism reveal two different phenotypic groups

MD Elena Franco<sup>1</sup>, PhD Alkiviades Liasis<sup>1,4,5</sup>, Mrs Hannah L Scanga<sup>1</sup>, MD, FAAP, FRCOphth Ken K Nischal<sup>1,4,6</sup>

<sup>1</sup>Division of Paediatric Ophthalmology, Strabismus, and Adult Motility, UPMC Children's Hospital of Pittsburgh, Pittsburgh, USA, <sup>2</sup>Department of Translational Medicine, University of Ferrara, Ferrara, Italy, <sup>3</sup>Istituto Internazionale per la Ricerca e Formazione in Oftalmologia (IRFO), Forlì, Italy, <sup>4</sup>UPMC Eye Center, University of Pittsburgh Medical Center, Pittsburgh, USA, <sup>5</sup>University College London, Great Ormond Street Institute of Child Health, London, UK, <sup>6</sup>University of Pittsburgh School of Medicine, Pittsburgh, USA

Purpose: Flash electroretinograms (fERGs) have been variably reported in patients with albinism. We describe fERG in children with albinism and compare them to patients with congenital stationary night blindness (CSNB) and controls.

Setting: Division of Pediatric Ophthalmology, Strabismus, and Adult Motility, UPMC Children's Hospital of Pittsburgh (Pittsburgh, PA, USA).

Methods: A retrospective chart review was conducted to identify patients with albinism or CSNB seen from January 2019 until December 2021. We identified 15 patients with albinism and 5 with CSNB. The ERG values of these 2 groups were compared to those of 10 age-matched normal control subjects.

Results: There was no significant difference in the mixed rod-cone a-wave amplitude across all groups. The b:a ratio of the mixed rod-cone ERG revealed two distinct patterns in albino patients: in 10 children (Alb[A]) it was similar to controls, in 5 (Alb[B]) it was reduced. The implicit time of the cone a- and b-wave and 30Hz flicker was reduced in all albino patients compared to controls. There was no difference in the cone a-wave or 30Hz flicker amplitude. The cone b-wave amplitude was reduced in the Alb[B] compared to controls and Alb[A], whilst no difference was evident between Alb[A] and controls.

Conclusion: Patients with albinism have reduced implicit time of photopic ERG components. Moreover, it is possible to detect two groups based on the mixed rod-cone b-wave amplitude, which can be either similar to controls or reduced and resembling that observed in CSNB, in the presence of comparable a-wave amplitudes across all groups. Further studies are warranted to determine the anatomical reasons for these findings.

Elena Franco: no financial interests to disclose.

Alkiviades Liasis: no financial interests to disclose.

Hannah L Scanga: no financial interests to disclose.

K. K. Nischal: Santen - honoraria, Graybug - advisor, GMAC – advisor, Recordati Rare Diseases - honoraria.

## A Prospective Trial to Assess the Efficacy of Eye-Tracking-Based Binocular Treatment Versus Patching for Children's Amblyopia: A Pilot Study

Wenqing Zhu<sup>1,2</sup>, Tamara Wagnanski-Jaffe<sup>3,4</sup>, Avital Moshkovitz<sup>5</sup>, Oren Yehezkel<sup>5</sup>, Rui Liu<sup>1,2</sup>

<sup>1</sup>Department of Ophthalmology, Eye and ENT Hospital of Fudan University, Shanghai, China, <sup>2</sup>NHC Key Laboratory of Myopia (Fudan University), Shanghai, China, <sup>3</sup>Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, <sup>4</sup>Goldschleger Eye Institute, Tel Hashomer, Israel, <sup>5</sup>Novasight Ltd., Airport City, Israel

**Purpose:** To assess visual acuity (VA) and stereoacuity (SA) improvements in children with amblyopia treated with either binocular dichoptic treatment or patching treatment.

**Setting :** Binocular cortical mechanisms remain intact with unilateral amblyopia and a binocular approach to treating amblyopia is feasible. CureSight™ (NovaSight, Israel) is an eye-tracking-based, dichoptic system designed to treat amblyopia under dichoptic conditions.

**Methods:** In this pilot prospective coherent study, 34 participants between 4 and 9 years of age with unilateral anisometropic amblyopia and without history of prior amblyopia treatment were enrolled into three groups. Full treatment group (FTG; n=12): participants were prescribed the binocular dichoptic treatment to watch for 90 minutes per day, 5 days a week. Part-time treatment group (PTTG; n=8): participants were prescribed the same binocular treatment as FTG, 90 minutes per day, 3 days per week. Patching treatment group (PTG; n=14): participants wore an adhesive patch over the dominant eye for 2 hours per day, 7 days per week. Amblyopic-eye distance visual acuity (DVA), near visual acuity (NVA) and SA were evaluated at baseline, 4, 8, and 12 weeks.

**Results:** At 12 weeks, mean amblyopic-eye DVA improved 1.8 lines (95% CI, 1.1-2.5) in FTG, 1.5 lines (95% CI, 0.4-2.7) in PTTG and 3.0 lines (95% CI, 2.0-4.0) in PTG. The amblyopic-eye NVA improved 2.9 lines (95% CI, 2.4-3.5) in FTG, 1.7 lines (95% CI, 0.5-3.0) in PTTG and 2.8 lines (95% CI, 1.8-3.9) in PTG. The SA improved 0.38 log-arcseconds (95% CI, 0.24-0.53) in FTG, 0.59 log-arcseconds (95% CI, 0.36-0.82) in PTTG and 0.40 log-arcseconds (95% CI, 0.13-0.67) in PTG. No significant differences were found in DVA, NVA or SA improvement between FTG and PTG at 12 weeks.

**Conclusions:** VA and SA after binocular dichoptic treatment produced a similar therapeutic outcome to patching, suggesting a potential value for binocular therapy when treating anisometropic moderate degree of Children's amblyopia.

**Financial Disclosure:** The authors declare that they have no conflicts of interest.

## Oral Valacyclovir Treating Childhood Herpes Zoster Ophthalmicus

Dr Vitor Mendonça<sup>1</sup>, Dr Elvio Ferreira Jr<sup>1,2</sup>, Dr Mario Lima<sup>1,2</sup>

<sup>1</sup>Complexo Hospitalar Padre Bento de Guarulhos, Guarulhos, Brazil, <sup>2</sup>Universidade Santo Amaro, Guarulhos, Brazil

**PURPOSE:** To present a case report in which oral valacyclovir proved to be a good alternative for the treatment of pediatric Herpes Zoster Ophthalmicus (HZO) in a previously healthy 12-year-old boy after worsening of the condition following initial use of intravenous acyclovir.

**SETTING/VENUE:** Complexo Hospitalar Padre Bento de Guarulhos – Guarulhos, SP, Brazil.

**METHODS:** A previously healthy 12-year-old boy presented at the ophthalmology emergency department with a 3-day history of an erythematous-papular rash on the left side of his forehead associated with vesicular skin eruption, local pain and ocular discomfort. The lesions were affecting the dermatome of the ophthalmic division of the trigeminal cranial nerve. The patient had no history of previous infection with varicella zoster virus (VZV), but had been vaccinated (2 doses) against VZV in the past.

He was hospitalized and treated with intravenous acyclovir and oral prednisone. However, despite starting treatment with acyclovir early in the clinical course, the lesions, as well as the pain, increased. 48 hours after the admission, the vesicular lesions were abundant, coalescent, covering all his left forehead, swollen eyelids and extended to the tip of his nose (Hutchinson's sign).

Oral valacyclovir was then initiated with systemic antibiotics (vancomycin and ceftriaxone) to treat superimposed bacterial infection.

**RESULTS:** Two days after the introduction of oral valacyclovir, the patient presented a marked improvement. The vesicles were gone, and the skin had only crusted lesions. He finished the 7-day course of medications and was discharged.

**CONCLUSION:** HZO is rare in children and is usually treated with acyclovir. As early and effective treatment not only reduces symptom duration but also prevent both visual and neurological sequelae, an alternative therapeutic regimen is needed when the first line treatment fails. In this case, oral valacyclovir associated with acyclovir has show to be effective drug in the treatment of pediatric HZO.

**Financial Disclosure:** the authors have no financial interests to disclose.

## Pediatricians' Knowledge Regarding Treating Children With Red Eye Disease.

Dr. Dina Mostovoy<sup>1</sup>

<sup>1</sup>Barzilay Medical Center, Ashkelon, Israel, , Israel

### Introduction:

Pediatricians play an important role in the early detection and prompt treatment of ocular disorders in children, including red eye disease. Red eye is one of the most common complaints among children. The disease usually results from conjunctivitis, but it might also be a clinical indication of several systemic diseases that may be evidence of a grave condition.

### Purpose:

To examine the knowledge level of pediatricians regarding treating children with red eye disease, as well as the factors that affect the knowledge level, and the potential implications of a low level of knowledge.

### Setting/Venue:

Two-hundred digital questionnaires were sent via e-mail to 200 expert pediatricians via the e-mail list of the professional association.

### Methods:

In this correlational quantitative study, 152 expert pediatricians completed a questionnaire that included questions on knowledge, attitudes, and experience in treating red eye disease.

### Results:

Respondents' mean level of knowledge was moderate. Most of the respondents (89.5%) knew that the most likely diagnosis for a child with red eyes and a discharge is viral conjunctivitis, 14.5% (n=22) of the pediatricians were found to subscribe antibiotics. Of all respondents, 71.7% said that they would refer a child with red eye to an ophthalmologist in any case of disrupted or blurred vision. A negative association was found between the pediatrician's age and years of experience. More than half the pediatricians reported that during their residency they had not received the necessary tools for treating pediatric eye disorders.

### Conclusions:

The research findings indicate a moderate level of knowledge among pediatricians. Lack of knowledge was more conspicuous among pediatricians with more experience. Knowledge appears to be critical both for readiness to treat red eye and for proper treatment. Hence, it is necessary to provide pediatricians with tools for treating eye disorders in children and to refresh their knowledge on red eye, particularly among pediatricians with more years of experience.

There is no financial disclosure

## The relationship between corneal diameter, age, and axial length in pediatric patients with congenital cataract

MD Luca Schwarzenbacher<sup>1</sup>, MD Lorenz Wassermann<sup>1</sup>, MD Sandra Rezar-Dreindl<sup>1</sup>, MD Thomas Neumayer<sup>1</sup>, MD Eva Stifter<sup>1</sup>

<sup>1</sup>Medical University of Vienna, , Austria

**Purpose:** To investigate the relationship between corneal diameter, age, and axial length in pediatric patients with congenital cataract.

**Setting:** Department of Ophthalmology and Optometry, Medical University of Vienna.

**Methods:** A retrospective analysis of biometric data of pediatric patients with congenital cataract was performed. Preoperative corneal diameter measurements (white-to-white distance) were obtained using a surgical caliper. The results were correlated with patient age and axial length. Surgical outcomes were assessed including intraocular lens (IOL) positioning and keratometry.

**Results:** The study included 135 eyes of pediatric patients (54 female and 52 male) with a mean age of  $3.5 \pm 4.3$  years (range: 0.1-15 years). The average preoperative corneal diameter was  $11.56 \pm 1.24$  mm (range: 8-15 mm), and the mean axial length was  $19.55 \pm 2.77$  mm (range: 13.3-26.55 mm). Pearson's correlation revealed a significant positive relationship between age and corneal diameter, as well as between axial length and corneal diameter.

**Conclusions:** Accurate assessment of corneal diameter is crucial for successful surgical planning in femtosecond laser-assisted cataract surgery, particularly in pediatric patients with congenital cataract. Understanding the relationship between age, axial length, and corneal diameter can aid in optimizing surgical outcomes.



## Bilateral Posterior Subcapsular Cataract Caused by Topical Corticosteroid Abuse in a 7-Year-Old Boy: A Case Report

João Alves Ambrósio<sup>1</sup>, Vítor Miranda<sup>1</sup>, João Cardoso Costa<sup>1</sup>, Cláudia Costa Ferreira<sup>1</sup>, Lúgia Figueiredo<sup>1</sup>

<sup>1</sup>Centro Hospitalar de Entre o Douro e Vouga, Santa Maria da Feira, Portugal

**Purpose:** To present a case report of a 7-year-old boy who developed bilateral posterior subcapsular cataract due to abuse of topical corticosteroid drops and to highlight the importance of raising awareness about the potential side effects of steroids.

**Setting/Venue:** Centro Hospitalar de Entre o Douro e Vouga (CHEDV), Santa Maria da Feira, Portugal.

**Methods:** Clinical case report.

**Results:** The patient first presented with adenoviral conjunctivitis treated with topical gentamicin and dexamethasone. He developed diffuse corneal subepithelial deposits, and he was treated with tapered dexamethasone phosphate eye drops. He presented 2 years later with right eye (OD) best corrected visual acuity (BCVA) of 1/10 and left eye (OS) BCVA of 6/10. Biomicroscopy examination revealed bilateral posterior subcapsular cataracts. The presumptive diagnosis of overuse of medication was made based on the clinical context and exclusion of systemic risk factors. He was then submitted to OD cataract phacoemulsification and presented with OD BCVA of 8/10 postoperatively.

**Conclusions:** Abuse of topical corticosteroid drops can have serious side effects, including cataract formation, especially in children. It is important to educate patients and healthcare providers about the recommended dosage and duration of treatment and the potential risks of using these medications without medical supervision. Early diagnosis and prompt intervention can improve the visual outcome in such cases.

**Financial Disclosure:** No financial conflicts of interest to disclose.

## Congenital aniridia – functional evaluation and association with genetic background: a case series

Aikaterini K. Seliniotaki<sup>1</sup>, Athina Ververi<sup>2</sup>, Argyrios Tzamalidis<sup>1</sup>, Nikolaos Ziakas<sup>1</sup>, Asimina Mataftsi<sup>1</sup>

<sup>1</sup>2nd Department of Ophthalmology, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece, <sup>2</sup>Genetic Unit, 1st Gynecological & Obstetrics Department, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece

**Purpose:** To present clinical and laboratory features of children diagnosed with congenital aniridia at a tertiary center in Greece.

**Setting:** 2nd University Department of Ophthalmology, at a tertiary General Hospital in Northern Greece.

**Methods:** A retrospective file review of all outpatient children diagnosed with congenital aniridia, from 2005 to 2022, was conducted. Data on demographic characteristics, genetic analysis, visual acuity, refractive error, as well as the presence of ocular conditions including keratopathy, nystagmus, strabismus, cataract, and glaucoma were extracted. Genetic analysis included molecular karyotype (array-CGH) followed by direct sequencing of PAX6. Measurements of visual acuity were conducted on logMAR scale with Kay's, HOTV or ETDRS optotypes, and refractive status was assessed with retinoscopy after cycloplegia. The therapeutic interventions were also recorded.

**Results:** Five females and two males were diagnosed with sporadic congenital aniridia and followed-up six-monthly (median age at last follow-up: 8.0 years). All patients presented iris hypoplasia, aniridia-associated keratopathy (grade 1 or 2), and nystagmus. During a median follow-up of 76months, none developed glaucoma. Median best-corrected visual acuity was 0.7logMAR.

Molecular analysis revealed deletion of bases containing PAX6 (28.6%), or deletion of PAX6 and WT1 (WAGR syndrome) (14.3%), or heterozygous point (missense) mutations in PAX6 (42.9%). All cases were treated conservatively. Full correction of refractive error with spectacles was prescribed, along with the use of dark glasses, and preservative-free lubricants.

**Conclusions:** This series of patients demonstrates preserved visual function in the first decade of life, after timely diagnosis of aniridia and appropriate medical management, including artificial tears and correction of refractive errors. The main goals of management were a) to investigate the genetic cause and exclude the need for renal monitoring, b) to fully correct refractive errors as early as possible and avoid amblyopia, c) to minimize exogenous insults and complications of the cornea by keeping it lubricated, d) to monitor the potential occurrence of glaucoma, e) to support the family in adopting a positive attitude towards the child's disease.

**Financial Disclosure:** None to declare.

## Success rate of probing in toddlers with congenital nasolacrimal duct obstruction (CNLDO) because of delayed referral due to the COVID-19 pandemic

Evgenia Bourouki<sup>1</sup>, Anna Mourgela<sup>1</sup>, Margarita Papadopoulou<sup>1</sup>, Chrysanthi Kafkala<sup>1</sup>, Agathi Kouri<sup>1</sup>  
<sup>1</sup>General Childrens' Hospital of Athens "Pan. And Aglaia Kyriakou" , Athens, Greece

Purpose: CNLDO is a common cause of tearing in infants. Although probing of the nasolacrimal duct (NLD) is considered a first-line approach in the management of CLNDO that does not resolve spontaneously, time of intervention is still controversial. Aim of this study was to determine the success rate of probing in correlation to the age of children and the time of referral.

Setting: General Childrens' Hospital of Athens "Pan. And Aglaia Kyriakou"

Methods : This is a retrospective study of a total of 30 children with a mean age of 21 months (range, 12 months to 42 months) underwent nasolacrimal duct probing under general anaesthesia in a time period of 9 months. Outcome measures included an ophthalmologic examination plus a parental history of residual symptoms at one and 3 months after surgery.

Results: 93% of treated patients had a successful outcome. In 22/30 children (73%) full resolution of symptoms was documented, while 6 of them (20%) reported improvement but not complete resolution of epiphora. 2 children (7%) referred no resolution of tearing at the end of the first month and underwent a second procedure.

CNLDO occurred bilaterally in 7 out of 30 children whereas the majority of children (23/30) demonstrated unilateral symptoms.

Conclusions: Our results suggest that probing is a viable solution and hence should not be withheld in children who are referred late. The high success rate of probing in children older than 12 months, similar to what is reported for those treated promptly, confirm that probing should be the first intervention before considering more complex methods such as balloons or silicon intubation.

## Comparison of functional, psychosocial and emotional aspects of strabismus before and after corrective surgery

Dr Deepti Joshi<sup>1</sup>, Dr Isha Gupta<sup>1</sup>, Dr Krishnaprasad R<sup>1</sup>, Dr Kiran Kamath<sup>1</sup>

<sup>1</sup>M M Joshi Eye Institute, Hubli, India

**Purpose-** The visual implications of manifest squint are many, and have been studied and described in great detail over the years. A change in squint-related quality of life has often not been given due importance in considering a patient for corrective surgery. Through this study we have assessed the effects of strabismus on psychosocial and emotional health of patients and determined the change in health-related quality of life (HRQOL) index in patients of strabismus, before and after corrective surgery.

**Setting-** Tertiary Eye care centre in South of India

**Methods-** 91 patients with mean age of 8-45 years were included in the study. They were subjected to modified Adult Strabismus 20 (AS-20) is questionnaire that contains 20 strabismus-specific questions, divided into two domains. The first 10 questions are focussed on psychosocial aspects of strabismus and the next 10 questions are related to its functional aspects. Each question uses a five-point Likert

scale. The responses are scored as follows: Never (100), Rarely (75), Sometimes (50), Often (25),

Always

(0). Mean Overall scores (OASs), psychosocial subscale scores (PSSs) and functional subscale scores (FSSs) are calculated.

**Results-** Scores were significantly lower for strabismus subjects ( $P < 0.001$ ). Postoperative scores for all 91 patients improved post operatively ( $P < 0.01$ ). There was a significant improvement in the functional subscale score as well as psychosocial subscale score ( $P < 0.01$ ).

**Conclusion-** Squint patients demonstrated significantly lower scores than controls. Strabismus surgery had a significant effect on quality-of-life scores in this group of patients.

## A comparison of different clinical trials investigating the efficacy of myopia control with an age-matched physiological axial growth pattern

Kai Neller<sup>1,2</sup>, Birte Graff<sup>1,2</sup>, Machteld Devenijn<sup>1</sup>, Hartmut Schwahn<sup>1</sup>, Hakan Kaymak<sup>1,2</sup>

<sup>1</sup>Internationale Innovative Ophthalmochirurgie GbR, Duesseldorf, Germany, <sup>2</sup>Institute of Experimental Ophthalmology, Saarland University, Homburg, Germany

**Purpose:** As patient's final level of myopia may be lowered by treatment options such as low-dose atropine, orthokeratology- and multifocal contact lenses and specially designed lenses, it is the doctor's task to choose the right treatment, where the decision is often based on clinical trial results of such therapies. The efficacy of a treatment over an untreated group does not allow for a comparison of different treatment options. The authors developed a method that allows an age dependent method to compare axial length growth rate called AMMC (Age-Matched-Myopia-Control) and classify it into highly excessive, moderately excessive and physiological axial length growth rate.

**Methods:** A literature review for clinical trials investigating treatment options of myopia progression in children was performed. Analysis of the data did also include the results of a possible placebo group. Children's mean annual axial length growth was calculated and plotted with respect to patients mean age after one year of therapy using the AMMC.

**Results:** According to the classification of the AMMC, children treated with atropine 0.01% and 0.025%, medium addition contact lenses and spectacle lenses with slightly aspherical lenslets had highly excessive axial growth. Atropine 0.05% and high addition contact lenses led to moderately excessive axial growth. Spectacle lenses with defocus incorporated multiple segments (DIMS), highly aspherical lenslets and dual-focus contact lens resulted in physiological axial growth after the first year of therapy, but only DIMS and dual-focus contact lens stayed in the same category for the following years. The analysis of the clinical data using AMMC© is congruent with the data in the corresponding literature: The dose dependency of low dose atropine on axial growth as well as the efficacy of different optical interventions on axial growth can be seen. We noticed that mean children's baseline ages in clinical trials with optical interventions were about 10, while children's baseline age in the reviewed atropine study was about 2 years lower.

**Conclusion:** As children's physiological axial growth declines with age, the evaluation of clinical trial results need to be interpreted with respect to the cohort's age. When comparing the efficacy of myopia treatments, the results need to be evaluated considering the underlying age matched physiological axial growth.

**Financial Disclosure** of all authors: none

## Longitudinal Clinical Characteristics of Patients with Neurofibromatosis Type 1

Dr.med.univ. Lorenz Wassermann<sup>1</sup>, Msc. Victoria Voith-Sturm<sup>1</sup>, Priv.-Doz.DDr. Gregor Reiter<sup>1</sup>, Priv.-Doz.DDr. Sandra Rezar-Dreindl<sup>1</sup>, Assoc.Prof.PD.Dr. Eva Stifter<sup>1</sup>

<sup>1</sup>Medical University of Vienna, Vienna, Austria

**Purpose:** This study reports on longitudinal clinical characteristics of patients with neurofibromatosis type 1 (NF1) in a follow-up period of mean 8 years in a cohort of children from 0-14 years (median 1,5 years).

**Setting:** Retrospective study.

**Methods:** This study included children diagnosed with neurofibromatosis type 1, clinical characteristics were evaluated. The outcomes were evaluated at the first visit and the last visit of the follow-up period: visual acuity (VA) was tested monocular or binocular (including different tests as Cardiff, Lea, Numbers or Snellen), characteristics like the presence of optic nerve abnormalities (irreversible optic nerve atrophy or nerve head pallor in fundoscopy or OCT), the presence of OPG (optic pathway glioma) in MRI, Lisch nodules, cafe au lait stains and genetic verification were obtained. Furthermore, the influence of the different characteristics on the VA at baseline (logMAR) as well as the VA change at the last visit (= VA change to follow-up, logMAR) was analysed by using a linear mixed model (backward elimination).

**Results:** A total of 85 children (168 eyes) were included, two eyes were excluded (no fixation possible and prothesis), followed for a mean of 8 years (range, 2-19 years). Mean best corrected VA at baseline was mean  $0,2 \pm 0,2$  logMAR (VA Snellen at baseline was mean  $0,69 \pm 0,24$ ). The age of the patients at baseline was mean  $3,14 \pm 2,57$  years. 16,5% patients showed a presence of optic nerve abnormalities, in 54,1% patients genetic verification was positive, 18,8% had a therapy, 32,9% of the patients had cafe au lait stains and 37,1% had Lisch nodules in the eye examination. Furthermore in 43,5% of the cases OPG was detected during the follow-up.

In the linear mixed model, a significant deterioration of VA at baseline was associated with the presence of severe optic nerve abnormalities (mean  $0,21 \pm 0,141$  logMAR,  $p < 0,01$ ), compared to patients without optic nerve abnormalities (mean  $0,14 \pm 0,13$  logMAR). Additionally, VA at baseline was dependent on the visual test (from mean  $0,04 \pm 0,19$  logMAR to mean  $0,3 \pm 0,16$  logMAR,  $p < 0,01$ ). The other characteristics showed no significant effect on the VA at baseline. Furthermore, the analysis showed a significant improvement of VA change to follow-up for VA at baseline (mean  $-0,33 \pm 0,09$ ,  $p = 0,001$ ) and for Lisch nodules (mean  $-0,19 \pm 0,15$ ,  $p < 0,0001$ ). Whereas the performance of therapy showed a non statistically significant trend towards less negative values in VA change to FU (mean  $-0,06 \pm 0,155$ ,  $p = 0,061$ ), the other parameters showed no influence to the VA change to follow-up.

**Conclusion:** Optic nerve glioma is a sight threatening finding in patients with NF1 and a close follow-up is recommended, including MRI as gold standard and OCT imaging of the optic nerve.

## Optimization of the use of neuro-radiological studies in children with suspected papilloedema, a sample of Norfolk and Norwich University Hospital (NNUH) patients as an example.

Dr Ali Arfa<sup>1</sup>, Dr Simin Arfa<sup>1</sup>, Mr Anas Injarie<sup>1</sup>

<sup>1</sup>Norfolk and Norwich University Hospital, , United Kingdom

Purpose:

To optimise the use of neuro-radiology investigations in children with suspected papilloedema.

Setting:

All paediatric patient referred from Ophthalmology Team for neuro-imaging at Norfolk and Norwich University Hospital.

Methods:

The study was a retrospective review of all paediatric patients referred for neuro-imaging studies with suspected papilloedema from April 2018 to December 2022 at NNUH. The following data is collected for each patient: demographic information, presenting symptoms, past medical history, ophthalmic imaging and radiology reports. The data was analyzed to identify the most common causes of papilloedema in this age group. All paediatric patients who had a head scan for papilloedema was included in the study, however patients who had scans for any other reasons were excluded.

Results:

This study included a total of 20 paediatric patients who underwent head scans as a part of the investigation for papilloedema. The result showed that one patient (5% ) had intracranial mass. This patient was subsequently diagnosed with pilocytic astrocytoma in the posterior fossa. Only two patients (10%) had radiological features of papilloedema, among them one had idiopathic intracranial hypertension (IIH). One patient had incidental finding of a small arachnoid cyst. 16 patients (80%) had unremarkable imaging findings. All these 4 patients with positive features either had OCT changes, or signs and symptoms strongly suggestive of increased Intracranial HTN.

Conclusions:

Neuro imaging should possibly be reserved for patients with either definite worsening of OCT disc imaging or worsening neurological or ophthalmological findings.

No financial interest of any authors

## Optical coherence tomography in optic disc oedema and optic disc drusen

MD Cláudia Costa Ferreira<sup>1</sup>, MD Inês Carrilho<sup>2</sup>, MD Maria da Luz Freitas<sup>1</sup>

<sup>1</sup>Department of Ophthalmology, Hospital Luz-Arrábida, Vila Nova de Gaia, Portugal, Vila Nova de Gaia, Portugal, <sup>2</sup>Department of Neuropediatric, CMIN - Centro Materno Infantil do Norte. CHUdSA, Porto, Portugal

**Purpose:** A wide range of clinical presentations can be found in patients with papilledema. The challenge is to define the etiology of optic disc elevation when the manifestations are relatively mild. The authors describe one case aiming to emphasize the role of optical coherence tomography (OCT) in differentiating optic disc drusen (ODD) from optic disc oedema (ODE) in children.

**Setting/Venue:** Department of Ophthalmology, Hospital Luz-Arrábida, Vila Nova de Gaia, Portugal

**Methods:** Clinical evaluation of a 10-year-old female, otherwise healthy, presented with a low degree bilateral papilledema in a routine ophthalmological appointment.

**Results:** The clinical investigation, with cranial magnetic resonance and lumbar puncture show that the girl fulfilled the diagnosis criteria for optic disc oedema and disc swelling improved after treatment. However, the serial analysis of OCTs performed over time, using high definition scans (HD) allowed that the diagnosis of ODD wasn't rule out in the presence of increased intracranial pressure.

**Conclusions:** OCT could play a crucial role in guiding diagnosis in ODD. Is a non-invasive, readily accessible and cost-effective ocular imaging technique that can improve the diagnosis accuracy for detecting ODD, avoiding more invasive techniques. The HD allows a better evaluation of the inner sclera introducing a better evaluation of the buried ODD.

No Financial Disclosure



## A rare case of unioocular high myopia associated with an intracranial arachnoid cyst.

Doctor Sheetal Kale<sup>1</sup>, Doctor Rupali Maheshgauri<sup>1</sup>, Doctor Prachi Bakare<sup>1</sup>, Doctor Mahesh Tikekar<sup>1</sup>

<sup>1</sup>Department of Ophthalmology, Postgraduate Institute, Yashwantrao Chavan Memorial Hospital, Pimpri Chinchwad, Pune, India

Purpose - To highlight the probable association of unioocular high myopia with intracranial arachnoid cyst and the need to study the nature of the association.

Settings and Methods - A 12-year-old boy was accompanied by his father with complaints of mild pain, redness and decreased vision in his right eye following blunt trauma due to a fall two days back. He had a history of few non-specific falls over two years. His best corrected visual acuity was 6/36 in the right eye with an - 11 dioptre spherical lens and 6/6 unaided in the left eye. The Hirshberg cornea reflex showed 5 degrees of right eye exo-deviation with normal extra-ocular movements. The prism alternate cover test showed orthotropia. The color vision was normal.

The slit lamp bio-microscopy revealed an anterior chamber reaction of grade +2 and mild circumcorneal congestion in the right eye. The pupil in right eye was mid-dilated and sluggishly reactive. A large disc with peripapillary posterior staphyloma was seen. All the findings in left eye were essentially normal. The axial length of right eye was 28.08 mm while the left eye was 25.22 mm. The patient was diagnosed as right eye traumatic uveitis, high myopia, and anisometropic amblyopia. A topical low-potent steroid eyedrop was started in tapering doses. Considering the history of frequent falls with unioocular high myopia, we advised a magnetic resonance imaging(MRI) brain and orbit with contrast.

Results - The child followed up with the MRI reports two days later. The right eye best-corrected visual acuity remained the same. The anterior chamber inflammation was reduced. Surprisingly, the MRI reports of the brain and orbit were suggestive of the left retro cerebellar cystic lesion indenting the left cerebellar hemisphere - most probably an arachnoid cyst. The neurosurgeon suggested observing the intracranial cyst and repeating the imaging after six months. An electroencephalogram (EEG) was advised to rule out any association with absent epilepsy. The EEG reports are still awaited.

Conclusion - The case report throws light on multiple research areas. First is the intracranial pathology, which may be abnormally stimulating the excess growth of the eyeball leading to unioocular high myopia. Second is the possibility of a trauma-induced intracranial arachnoid cyst due to multiple blunt trauma on frequent falls due to poor binocular vision in patients with dense anisometropic amblyopia. On reviewing the literature, this is the second case of its kind reporting the rare association. Hence, the importance of further detailed studies cannot be stressed additionally.

Financial disclosures of all authors- NIL.

## “NUT CARCINOMA PRESENTING AS RETROBULBAR NEURITIS: A LETHAL MASQUERADE!”

Dr NEENA R<sup>1</sup>, Dr Stephanie Sebastian, Dr Mathew Dominic, Dr Ranjima Abraham

<sup>1</sup>Giridhar Eye institute, Kadavanthara, Kochi, Kerala, India, Kochi, India

Purpose : NUT Carcinoma (NC), a potentially lethal tumor with a grim prognosis and no standard-of-care therapy at present; may not be a familial entity to many an ophthalmologist. Previously known as NUT midline carcinoma due to propensity for midline structures; NC does not refrain from arising in other body sites. NUT stands for Nuclear protein in Testis (NUT); a mammalian-specific protein, having a histone-binding domain in its structure; expressed in normal spermatocytes and the ciliary ganglion. This is probably the first reported case of NC presenting as isolated retrobulbar neuritis.

KEYWORDS: NUT Carcinoma (NC), Magnetic Resonance Imaging (MRI), Retrobulbar neuritis (RBN), Immunohistochemistry (IHC)

- Setting/Venue : NC is a rare and invasive subtype of squamous carcinoma with a median survival of <1 year; characterized by translocations involving the NUT gene (15q14), most commonly with BRD4 (19p13) with frequent squamous differentiation, and a propensity to form necrotic metastatic lesions by invading neighboring structures.
- Methods : A young girl with sudden vision loss left eye, left relative afferent pupillary defect and normal fundus both eyes. MRI Brain & Orbits showed a heterogenous enhancing mass in the left posterior ethmoid sinus with bony invasion and crowding of the optic canal. She underwent left optic nerve decompression and removal of the mass. Antibiotics, analgesics and methyl prednisolone 500 mg IV BD for 5 days were given; followed by tapering dose of oral steroids. Biopsy showed poorly differentiated neoplasm with the possibility NC. IHC confirmed the same; showing moderate to strong speckled nuclear positivity with CK & p-63 positivity.
- Results : Parents and the patient were explained the grave nature of the tumor and counselled for surgical exenteration but they opted for primary chemotherapy. The tumor progressed rapidly in six months invading the left orbit, extending to right side of the midline, left anterior cranial fossa, with subsequent complete loss of vision of right eye also. A globe sparing orbital exenteration with anterior cranial base resection along with postoperative radiotherapy was eventually done. A month later, patient developed extensive skeletal and hepatic metastasis and succumbed to the disease; 11 months after the initial diagnosis.
- Conclusions : Our patient presented with retrobulbar neuritis with no clinical signs of orbital or sino-nasal disease. Imaging picked up the lesion in the posterior ethmoid sinus, but it was histopathology and immunohistochemistry which clinched the diagnosis. Despite undergoing orbital exenteration subsequently, followed by radiotherapy, patient succumbed to the disease within a year of diagnosis; revealing the aggressive and lethal nature of the tumour. This case report aims to highlight the crucial role of imaging, histopathology and immunohistochemistry in confirming the diagnosis as well as alert the clinicians about the rare but lethal possibility of NUT Carcinoma masquerading as optic neuritis.
- Financial Disclosure: Nil

## Two Rare cases of Juvenile double seronegative Ocular Myasthenia Gravis.

Dr Isha Gupta<sup>1</sup>, Dr. Deepti Joshi<sup>1</sup>, Dr. Krishnaprasad R<sup>1</sup>, Dr Raghavendraswami Amoghmath<sup>1</sup>

<sup>1</sup>Mm Joshi Eye Hospital, Hubli, India

Purpose- Juvenile myasthenia gravis is a rare autoimmune disorder affecting neuromuscular junction resulting in muscle weakness in children < 18 years of age. While clinical presentation is similar to adults, there are few peculiar features which influence early diagnosis and management. Through this case series we report two children with double seronegative ocular myasthenia gravis.

Cases- Ptosis was predominant symptom of first case but strabismus remained the principal presenting complain in second case. A diagnosis of Juvenile Ocular Myasthenia gravis was made when symptoms improved with pyridostigmine stimulation test. They were commenced on oral pyridostigmine at a dose of 0.5 mg/kg/dose every 6 hours, are on regular follow up and have a good response.

Conclusion- Juvenile Ocular Myasthenia gravis (OMG) is a rare disease in itself. Double seronegative subtypes need a high index of suspicion as these children need to be initiated on appropriate treatment early to avoid generalization and long-term physical morbidity.

## Management of a large lid hemangioma in an infant

Dr Priyanka Singh<sup>1</sup>, Dr Gaurav Arya<sup>1</sup>, Dr Dilpreet Singh<sup>2</sup>

<sup>1</sup>Rukmini Child And Eyecare Centre, Kanpur, India, <sup>2</sup>Angel eyes hospital, Kanpur, India

Purpose : To present a case report of 8months old boy who was managed using intralesional steroid injection.

Setting : Patient was seen and managed in a private tertiary care ophthalmic setup.

Method : 3 months old baby came to the opd with a large lid mass causing complete ptosis of left upper lid thus obscuring visual axis. For the risk of vision deprivation amblyopia, patient was started on oral steroid, oral propranolol and topical timolol. After follow up of 3 months patient did not have significant reduction in size of mass and also started developing systemic side effects of steroids and beta blockers. Thus at the age of 6 months intralesional triamsinolone was injected at the dose of 4mg/kg bwt.

Results : The mass showed significant reduction in size with clearing of visual axis in 2 weeks. Patient is on regular follow ups and tapered of all systemic medications. He has been continued with topical timolol 0.5% and responding well to it.

Conclusion: Sight threatening large hemangioma is rare to present. There are many treatment options available and prolonged steroid and propranolol therapy carries risk of systemic side effects. Intralesional steroids give prompt results with minimal side effects and therapy can be combined with topical timolol for maximum benefits.

Financial disclosure: none

## A stitch in time saves eye and lives, in case of neonatal ophthalmic emergencies.

Dr Isha Gupta<sup>1</sup>, Dr Deepti Joshi<sup>1</sup>, Dr. Krishnaprasad R<sup>1</sup>

<sup>1</sup>Mm Joshi Eye Hospital, Hubli, India

Purpose- Neonatal ophthalmic emergencies can be daunting for both the ophthalmologist and the parent as they have utmost sense of urgency and can progress to sight threatening or fatal outcomes. Here we describe three interventional ophthalmic cases in early neonatal period from presentation within 6 hours of birth to 6 days of birth.

Cases- Case 1 describes a full thickness iatrogenic accidental lid laceration in a neonate during elective C-section child birth and outcome of its timely repair within 6 hours of birth. Case 2 describes acquired panophthalmitis in a neonate due to superstitious practice of milk instillation into the eye in rural India. The sight was lost but life was saved in this case by intra-vitreous antibiotics and NICU care. Case 3 describes endogenous orbital abscess in a neonate extending into the anterior fossa of brain. Expedite surgical drainage and NICU care was able to save both sight as well as life in this case.

Conclusion- These clinical scenarios reaffirm the need for high index of suspicion and prompt intervention when dealing with neonatal ophthalmic infections for optimal patient outcomes. It requires collaborative effort of ophthalmologist, neonatologist and anaesthetist. Neonatal ophthalmic infection can prove fatal if treatment is delayed.

## The use of Anterior Segment OCT (AS-OCT) in screening, diagnosing and follow up for Anterior Uveitis in paediatric patients with Juvenile Idiopathic Arthritis (JIA)

Dr Ali Arfa<sup>1</sup>, Mr Anas Injarie<sup>1</sup>

<sup>1</sup>Norfolk and Norwich University Hospital, , United Kingdom

### Purpose:

To compare the diagnostic and monitoring accuracy of Anterior Segment OCT (AS-OCT) with clinical slit lamp examination in detecting anterior uveitis in children with Juvenile Idiopathic Arthritis (JIA). Also, to develop AS-OCT grading system comparable to the Standardisation of Uveitis Nomenclature (SUN) Uveitis activity scale.

### Setting:

Paediatric patients with JIA attending Norfolk and Norwich University Hospital (NNUH) Paediatric Uveitis Clinic for Screening or follow up in 2022 and 2023.

### Methods:

AS-OCT obtained for JIA children attending paediatric Uveitis clinic. Each patient underwent both slit lamp evaluation by ophthalmologists and AS-OCT examination. The results of the two examinations were then compared to assess the diagnostic accuracy of AS-OCT. Eyes without uveitis were considered as a control group.

### Results:

20 children with JIA were enrolled (40 eyes, 50 episodes of scanning): 15 scans had uveitis and 25 had no uveitis (control group). The use of AS-OCT was found to have a sensitivity and specificity of 100% in diagnosing anterior uveitis in paediatric patients with JIA. Additionally, AS-OCT was found to be an effective tool in grading the severity of uveitis in comparison to SUN scale. In the control group, AS-OCT was able to successfully rule out the presence of anterior uveitis.

### Conclusions:

The results of this study suggest that AS-OCT is a highly accurate, useful and child friendly diagnostic tool for anterior uveitis in paediatric patients with JIA. It is likely to be a powerful tool in grading and screening for the disease, even in less experienced hands. A larger sample size studies, however, would be necessary to confirm these findings and to generalise them to a larger population of JIA patients.

No financial interest of any authors

## Post-infectious Non-neoplastic Autoimmune Retinopathy in Pediatric age group: A High index of suspicion, Multimodal Imaging and Early treatment can restore vision.

Dr NEENA R<sup>1</sup>, Dr Ashapurna Borgohain, Dr Neena Baby, Dr Giridhar Anantharaman

<sup>1</sup>Giridhar Eye institute, Kadavanthara, Kochi, Kerala, India, Kochi, India

• Purpose : Auto-immune retinopathy (AIR) is an immune-mediated condition presenting as bilateral painless, progressive loss of vision. We present a case of non-neoplastic AIR (npAIR) in a previously healthy, five-year old girl with bilateral sudden, progressive loss of vision, following an episode of high fever, wherein vision was restored with prompt treatment.

Key words: Auto-immune retinopathy (AIR), Non-paraneoplastic Autoimmune Retinopathy (npAIR), Optical coherence tomography (OCT), Electroretinogram (ERG), Post infectious, Paediatric age group

• Setting/Venue : AIR is a rare immunologic process with development of circulating auto-antibodies cross-reacting against retinal antigens causing photoreceptor dysfunction, wide range of clinical manifestations and ERG abnormalities. It is classified as Neoplastic and Non-neoplastic based on its association with any neoplasm in any part of the body.

• Methods : A five-year old girl with bilateral sudden, progressive vision loss, following an episode of high fever. Fundus both eyes had a faint hypopigmented mottled appearance, normal appearing discs, mildly attenuated arterioles and normal foveal reflex. Autofluorescence showed hyper-autofluorescence along the vessels corresponding to the mottled appearance. OCT showed diffuse ellipsoid zone loss, hyper-reflective deposits over retinal pigment epithelium and thinning of outer retinal layers. ERG showed extinguished photopic and scotopic responses both eyes. Systemic evaluation, vasculitis workup and serum anti-recoverin antibody were negative. Neurology evaluation was normal. Intravenous (IV) methyl prednisolone followed by tapering dose of oral steroids was given.

• Results : Based on absence of any significant family history of eye disease and drug history, with no definite evidence of underlying malignancy and with a recent history of fever, we presume our case to be post-infectious npAIR. Treatment with intravenous steroids was started urgently after a negative extensively performed systemic work-up. Visual acuity gradually improved over a period of three months with gradual restoration of anatomy of retinal layers as assessed by OCT. There was progressive restoration of EZ and ELM layers with disappearance of the hyper-reflective deposits above RPE, however ERG remained extinguished in both eyes.

• Conclusions : Our case highlights the importance of considering npAIR as a differential diagnosis in paediatric patients presenting with sudden bilateral painless progressive loss of vision without prior visual difficulties and the role of multimodal imaging to aid in the diagnosis. The recovery of vision with restoration of photoreceptor layer also shows the nature of the disease to improve when intervened immediately despite a negative anti-retinal antibody test but with features highly suggestive of npAIR.

• Financial Disclosure: Nil

## testing poster

Danielle Maher<sup>1</sup>

<sup>1</sup>Wspos, , Ireland

Please submit your abstract under the following:

Purpose – max 100 words

Setting – max 50 words

Methods – max 100 words

Results – max 100 words

Conclusions – max 100 words

Financial Disclosure of all authors



## X-linked Retinoschisis in an 11-Year-Old Boy: A Case Report

João Alves Ambrósio<sup>1</sup>

<sup>1</sup>Centro Hospitalar de Entre o Douro e Vouga, Santa Maria da Feira, Portugal

**Purpose:** To report a case of X-linked retinoschisis (XLRS) in an 11-year-old boy and to highlight the clinical presentation, diagnostic methods, and treatment options for this rare inherited disorder.

**Setting/Venue:** Centro Hospitalar de Entre o Douro e Vouga (CHEDV), Santa Maria da Feira, Portugal.

**Methods:** Clinical case report of an 11-year-old boy who presented with complaints of decreased vision in both eyes (OU). His past medical history was significant for neuro psychomotor developmental delay. He underwent a comprehensive ophthalmic examination, including uncorrected visual acuity (UCVA), dilated fundus examination, and spectral domain optical coherence tomography (SD-OCT).

**Results:** Right eye (OD) UCVA was 3/10, and left eye (OS) UCVA was 2/10. The anterior segment was unremarkable. Fundoscopy OU revealed foveal schisis. The patient was presumptively diagnosed with XLRS based on clinical examination and SD-OCT findings. XLRS is caused by mutations in the RS1 gene, which encodes retinoschisin, a protein involved in intercellular adhesion and likely retinal cellular organization. Electroretinography (expected to show reduced rod and cone function) and genetic testing results are pending. He was started on dorzolamide eye drops, and after 4 weeks UCVA improved to OD 4/10 and OS 3/10.

**Conclusions:** XLRS is a rare inherited disorder that causes progressive vision loss in affected males. Diagnosis is based on clinical examination and SD-OCT findings. Treatment options are limited as there is currently no curative treatment for this condition, and management is focused on supportive care and regular monitoring. Carbonic anhydrase inhibitors may help to improve the schisis cavities seen on OCT. Early detection and management can help to preserve vision in affected individuals. Family history of childhood eye disease consistent with X-linked inheritance should be assessed. Male patients should be counseled that they will pass the mutation to all daughters.

**Financial Disclosure:** No financial conflicts of interest to disclose.

## PREPAPILLARY VASCULAR LOOP IN CHILDREN: WHAT CAN WE EXPECT?

Dr Olga Alvarez-Bulnes<sup>1</sup>, Dr Isabel Ayet-Roger<sup>2</sup>, Dr Joel Suárez-Jauregui<sup>1</sup>

<sup>1</sup>Hospital De Mataró, Mataró, Spain, <sup>2</sup>Hospital Sant Joan de Déu, , Spain

- Title: PREPAPILLARY VASCULAR LOOP IN CHILDREN: WHAT CAN WE EXPECT?
- Purpose: Present a clinical case series of children diagnosed with prepapillary vascular loop after a routine ophthalmological examination. Review the characteristics, differential diagnoses, and associations of this condition.
- Methods: Clinical case series of children from our Ophthalmology practice diagnosed with prepapillary vascular loop. Clinical history and imaging (retinography + OCT images) are presented to review this condition. Special attention paid to retinal vascular tortuosity, cilioretinal artery presence or absence, vitreous traction.
- Results: In our series, prepapillary vascular loop was a casual finding in the course of a routine ophthalmological examination in asymptomatic patients. All cases were arterial with no other pathological findings. However, these loops can associate vitreous hemorrhage or retinal vascular occlusion.
- Conclusions: Prepapillary vascular loop is a finding with uncommon complications. It is necessary to know it to avoid unnecessary studies.
- Financial Disclosure: None

## Atypical unilateral retinal findings in a 15-year-old patient with previously treated ROP.

Miss Elpida Kollia<sup>1</sup>, Mrs Eleni Patsea<sup>2</sup>, Mr Susmito Biswas<sup>1</sup>, Prof Jane-Louise Ashworth<sup>1</sup>

<sup>1</sup>Manchester Royal Eye Hospital, Manchester, United Kingdom, <sup>2</sup>Ophthalmiatreion Eye Hospital of Athens, Athens, Greece

### PURPOSE:

To describe a striking case of an ex-premature 15y.o boy with a history of bilaterally treated ROP and unusual clinical findings.

### SETTING:

Paediatric Ophthalmology Department, Manchester Royal Eye Hospital.

### METHODS:

A 15y.o, high-myope, patient attended the A n'E department, having noted sudden blurred vision in his Right Eye. On examination, there was a mild vitreous hemorrhage and hypotony with concomitant choroidal folds and marked disc oedema. He was referred to the vitreo-retinal team who subsequently referred him to the Paediatric Uveitis department on suspicion of a possible uveitic process. He had an ultra-sound (B scan) which confirmed 360 supraciliary effusion, choroidal thickness with serous detachment in the right eye. In view of possible uveitis with +2 AC and vitreous cells along with deteriorating disc swelling, he was commenced oral steroids. An FFA was also performed which showed inferior leakage over the areas of old laser scars. It is off-note that there was no evidence of anterior segment ischaemia whatsoever. Anterior segment OCT-A and UBM did not reveal any further abnormality. 3 weeks following close monitoring and after the vitreous had cleared up, he was found to have a retinal tear over the old laser scars, as well as localized anterior retinal elevation.

### RESULTS:

The patient finally underwent posterior vitrectomy with silicone oil insertion and choroidal drainage. His retinal anatomy has been restored and the hypotony reverted. He recovered well and his vision improved.

### CONCLUSION:

This case illustrates that late complications of laser treatment for ROP can occur and may present in an atypical way. The presence of hypotony and inflammation in a myopic eye with previous ROP should alert the treating clinician to the possibility of a retinal tear or localised detachment.

### FINANCIAL DISCLOSURE:

None

## Incidence of treatment-requiring Retinopathy of Prematurity in Greece: a prospective multicenter study

Dr Stella Moutzouri<sup>1</sup>, Dr Alexandros Charonis<sup>2</sup>, Dr Aikaterini K. Seliniotaki<sup>1</sup>, Dr Anna-Bettina Haidich<sup>3</sup>, Dr Elissavet Diamanti<sup>4</sup>, Dr Nikolaos Ziakas<sup>1</sup>, Dr Asimina Mataftsi<sup>1</sup>

<sup>1</sup>2nd Department of Ophthalmology, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece, <sup>2</sup>Retina Service, Athens Vision Eye Institute, Athens, Greece, <sup>3</sup>Department of Hygiene, Social-Preventive Medicine & Medical Statistics, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece, <sup>4</sup>2nd Department of Neonatology, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece

### Purpose

To report the incidence of treatment-requiring retinopathy of prematurity (ROP) in Greece for the first time and describe the infants' characteristics.

### Setting/Venue

2nd Department of Ophthalmology, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece

### Methods

Data on infants who received treatment for ROP from 1 June 2020 to 31 May 2021 were prospectively collected by all ophthalmologists who provide screening and/or treatment for ROP in Greece, using an active surveillance approach. Missing data were retrieved with participation from neonatologists from the respective neonatal intensive care units (NICUs). The following data were collected (gestational age (GA), birth weight (BW), sex, maximum stage and most central zone of ROP, presence of plus disease, treatment modality, date of treatment and need of re-treatment). The study protocol was published on [clinicaltrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT05099588) (NCT05099588).

### Results

During the 12-month study period, 43 infants underwent treatment for ROP (36 for type 1 and 7 for type 2 disease). This corresponds to a national incidence of 3.8% treatment-requiring ROP, given the national report on birth of infants with GA under 32 weeks or BW under 1501 grams in the same period (n=1133). Twenty-four infants were male (55.8%), median GA and BW were 26 6/7 weeks (range 23 3/7-33 0/7) and 850 grams (range 500-2370) respectively. Either laser photocoagulation (69.8%) or intravitreal anti-VEGF injection (30.2%) was performed at median 9 4/7 weeks postnatal age (range 5 4/7-21 2/7). Re-treatment was required in 13 infants at a median 7 weeks (range 1.9-11) after initial treatment.

### Conclusions

The incidence of treatment-requiring ROP in Greece appears to be similar with that reported in other countries of the developed world. Laser photocoagulation was the preferred method of first-line treatment during the study period.

### Financial Disclosure

None

## CROSS-SECTIONAL STUDY OF THE CHOROID IN HYPEROPIC CHILDREN

Dr Vanessa Gerena Arévalo<sup>1</sup>, Professor Jose-María Ruiz Moreno<sup>2,3</sup>

<sup>1</sup>Hospital Universitario Sanitas La Moraleja, Madrid, Spain, <sup>2</sup>Hospital Universitario Puerta de Hierro, Majadahonda, Spain, <sup>3</sup>Castilla de la Mancha University, Ciudad Real, Spain

**PURPOSE:** To evaluate the choroidal thickness (CT) in hyperopic and emmetropic children using swept-source optical coherence tomography (SS-OCT).

**METHODS:** This was a prospective, cross-sectional comparative study. Macular choroidal thickness and axial length of 62 eyes from hyperopic pediatric patients were studied. CT was determined at nine different macular locations. The results were compared to 66 eyes of healthy pediatric patients.

**RESULTS:** Study groups were classified as a hyperopic group ( $SE \geq 2D$ ) and an emmetropic group ( $SE < 2D$ ). The hyperopic group have shorter AL than the emmetropic group ( $p < 0.001$ ). The mean CT is greater in the hyperopic group ( $p = 0.039$ ), and there are no significant differences between CT and gender ( $p = 0.389$ ). Study participants were also classified by age (2–5 years old and 6–18 years old), and we observe differences in CT, but these differences are only significant for the 6–18 years old group ( $p < 0.05$ ).

**CONCLUSIONS:** CT in hyperopic pediatric populations is statistically thicker than in healthy pediatric patients. AL and SE have statistically significant correlations with CT values, and those correlations are seen in children in the ocular slow-growing phase (6–18 years old), and not in the early years (2–5 years old).

Author declares that there is no relevant or material financial interests that relate to the research described in this paper

## Have SARS-CoV-2 virus (COVID-19) lockdown restrictions impacted the prevalence and severity of retinopathy of prematurity in a London population?

Mr Marcus Posner<sup>1,2</sup>, Ms Kate Reed<sup>1</sup>, Ms Shehnaz Bazeer<sup>1</sup>, Ms Louise Brocklesby<sup>1</sup>, Mr Ibtesham Hossain<sup>1</sup>, Ms Doaa Al Fadaly<sup>4</sup>, Ms Maria Tsimpida<sup>3</sup>, Mr Himanshu Patel<sup>2,4</sup>, Mr Ayman Khaier<sup>1</sup>, Dr Ambalika Das<sup>1</sup>

<sup>1</sup>BHRUT, Romford, United Kingdom, <sup>2</sup>Moorfields Eye Hospital, London, UK, <sup>3</sup>Whipps Cross Hospital, London, UK, <sup>4</sup>Royal London Hospital, London, UK

### Purpose

During the COVID-19 lockdowns in 2020 numerous global neonatal intensive care units (NICU) reported reduced incidence of pre-term births. Retinopathy of prematurity (ROP) is a vision-threatening disease that affects premature infants. We hypothesised that there may be a corresponding reduction in incidence and severity of ROP.

### Setting

Three East London level 2 and 3 NICU

### Methods

Comparison of birth weight (BW), gestational age (GA) and ROP stage of babies screened during the UK lockdown period March to October 2020 matched with equivalent dates in 2019. Inclusion criteria; GA<32 weeks or BW<1501g.

### Results

264 ROP-screened pre-term babies included; 138 in 2019, 124 in 2020. 65 (46%) in 2019 and 46 (37%) in 2020 were diagnosed with maximal ROP grades 1-3. Babies were of similar GA ( $p=0.6$ ) and BW ( $p=0.9$ ) across the cohorts. There was, however, a statistically significant difference in the severity of ROP with 13 (9.4%) 2019 babies vs 5 (4%) 2020 babies diagnosed with stage 3 ROP requiring treatment ( $p<0.05$ ).

### Conclusions

Fewer pre-term babies were born in 2020 compared to the same time period in 2019. Of the pre-term babies that were born, fewer were diagnosed with ROP and fewer still had stage 3, treated ROP. The underlying reasons for this are uncertain and require further investigation but postulated suggestions include decreased incidence of maternal infections, decreased maternal activity and improved air quality.

This mirrors findings from a similar study in Japan indicating a reduction in sight-threatening ROP in babies born during Covid lockdown. Further investigation is required to determine a cause-effect relationship and to further inform expectant mothers.

The authors have no financial disclosures

## Logical solutions to complicated strabismus

Dr Maithri Arunkumar<sup>1</sup>, Dr Jyoti Matalia<sup>1</sup>

<sup>1</sup>Narayana Nethralaya, Bengaluru, India

**Purpose:** For many years, strabismus was thought to be untreatable till the physiology of extraocular muscles was understood. Now, not only do we treat strabismus, but we aim to give the best outcome in terms of binocular single vision and cosmesis. For any squint surgeon, the planning is more important than the surgery itself. While it is routine to operate on what we call virgin muscles, re-surgeries pose quite a challenge for even the most experienced strabismologists. We show you how one can approach complicated strabismus in a logical manner, thereby allowing easy surgical planning and predictable results.

**Setting:** Department of pediatric ophthalmology and strabismus of a tertiary eye hospital in South India

**Methods:** Understanding principles can achieve a successful outcome even in scenarios of 6th nerve palsy or post-orbital surgery induced strabismus. Some cases may require 2 surgeries and some even more. Three cases of complicated strabismus were chosen to discuss how a logical algorithm can be used to plan optimal correction and provide a successful outcome.

**Results:** Three cases – 1. Multiple cranial nerve palsy, 2. Iatrogenic strabismus post orbital surgery and 3. a case of Duane retraction syndrome post multiple surgeries underwent re-surgery. They were meticulously evaluated and a plan of surgery was created keeping in mind the complicated nature of strabismus and the muscles already operated upon. All patients who underwent re-surgeries had good alignment post-operatively.

**Conclusion:** Complicated strabismus and re-surgeries can be very difficult to approach for many ophthalmologists but once we understand the basic why's and how's of a muscle's behavior, it becomes less daunting. We hope to make strabismus surgery easy for everyone.

## Two-staged strabismus surgery under topical anesthesia with intraoperative comparison of ocular alignment in supine vs seated position

MD Elena Franco<sup>1,2</sup>, Ms Silvia Mancioffi<sup>2</sup>, Ms Elena Forini<sup>3</sup>, MD Maria Franco<sup>4</sup>, MD Filippo Franco<sup>2</sup>

<sup>1</sup>Department of Translational Medicine, University of Ferrara, Ferrara, Italy, <sup>2</sup>Operational Unit of Ophthalmology, St. Anna University Hospital of Ferrara, Ferrara, Italy, <sup>3</sup>Management Control, St. Anna University Hospital of Ferrara, Ferrara, Italy, <sup>4</sup>Division of Pediatrics, Department of Medical Sciences, University of Ferrara, Ferrara, Italy

Purpose: To evaluate the feasibility and outcomes of a 2-staged strabismus surgery under topical anesthesia, with intraoperative comparison of ocular alignment in supine and seated positions.

Setting: Ophthalmology Unit of St. Anna University Hospital of Ferrara (Ferrara, Italy) from June 2020 until June 2021.

Methods: This retrospective clinical investigation analyzed the data of patients who underwent a 2-staged strabismus surgery with fixed sutures under topical anesthesia. The 2 stages were spaced out with an intraoperative alternate prism cover test (performed in supine and seated positions): (1) surgery on one or two muscles; (2) if judged necessary, a further one-muscle surgery. Surgical success was defined as a residual angle of horizontal and vertical deviation  $\leq \pm 8\Delta$  and  $\leq 5\Delta$ , respectively, and the presence of single binocular vision in primary position in patients with preoperative diplopia. Follow-up visits were scheduled 1 day, 1 month, and 6 months post-operatively.

Results: Thirty-eight patients (age range: 10-80 years) were operated on with the staged approach. Surgery was well tolerated by all patients. Twelve (32%) required a second stage. No statistically significant differences were found for intraoperative angles of deviation in supine and seated positions. Surgical success was reached, respectively, in 88% and 87% of cases with horizontal and vertical deviation 6 months after surgery. No patients were reoperated during the follow-up period.

Conclusions: Two-staged strabismus surgery is a feasible technique for various types of strabismus in adults and children. This approach allows to analyze motor and functional results directly in the operating room and offers the option to increase the number of operated muscles in case of undercorrection. Secondly, intraoperative evaluation of ocular alignment can be performed either with the patient seated or supine, with the same accuracy in terms of surgical success.

None of the authors have financial interests to disclose.



## Right exotropia, amblyopia and coexisting pseudoexotropia in a 22-year-old female patient

M.D. Patricia Domsa<sup>1</sup>, Krisztián Szabó<sup>1</sup>, Dr. Jeannette Tóth<sup>1</sup>

<sup>1</sup>Non Plus Ultra Vision Centre, Budapest, Hungary

**Purpose:** This case study focuses on a 22-year-old female patient with exotropia, amblyopia, and pseudoexotropia of the right eye.

**Setting/Venue:** Case study

**Method:** The patient visited the office for consultation about surgical options for her cosmetically disturbing right exotropia.

**Results:** The patient has had right exotropia since childhood, treated by patching of the left eye. She has been wearing glasses since the age of 16.

Automated refractometry revealed a difference in refraction between the two eyes, with -2.50 Dsph - 1.75 Dcyl 107° in the right, and -2.25 Dsph -0.25 Dcyl 56° in the left. Her BCVA was 0.33 in the right eye and 0.8 in the left. The angle of deviation was 12 RXT and 4 RHT. Above 16 base in prism the patient reported double vision. Outwardly the deviation appeared larger than that shown by measurement. The fundus image explained the discrepancy. The right papillomacular distance (PMD) was found to be greater. Macular OCT showed a difference in the papillomacular distance between eyes, with PMD being 3.97 mm on the right and 3.52 mm on the left side.

In addition, the patient's facial shape and the unfortunate choice of spectacle frames also contributed to her unsatisfying cosmetic condition.

**Conclusions:** Considering that surgical treatment of a minimal true angle of strabismus would not have significantly improved the condition and could have risked chronic double vision, surgery was not recommended.

This case study illustrates the challenges encountered in strabology when treating adult patients with complex eye conditions, where careful consideration of the underlying causes is required to determine the most appropriate treatment plan.

**Financial Disclosure:** Authors have no conflict of interest to declare

## Cyclical esotropia following vaccination against COVID-19 virus

Dr Smita Kapoor

<sup>1</sup>Vision eye centre, New Delhi, India

Purpose - To present the case of a female who presented with acute onset double vision following vaccination against COVID-19 virus that was cyclical in nature.

Setting - The patient was observed and surgically treated by a fellowship trained pediatric ophthalmologist and strabismus surgeon at Vision Eye Centres, New Delhi.

Methods- A 16-year-old female presented 6 months after sudden onset diplopia. The onset of diplopia was 2 days after vaccination against the COVID-19 virus. She was asymptomatic before the vaccine and there was no other febrile illness or trauma before the onset of diplopia. The diplopia occurred after every 2-3 days and resolved after a 24 or 48-hour cycle. At the time of presentation, she had a face turn to the left with an esodeviation of the left eye. Extraocular motility was full. An MRI and complete blood count with ESR was performed. The cyclical nature of the deviation was documented with photographs and videos. She underwent Left eye medial rectus recession and lateral rectus resection following which she was orthophoric and diplopia free.

Results - The patient was orthophoric on day 1, at 1 month and 6 months postoperatively. There was no diplopia in primary gaze or dextroversion/levoversion. To the best of our knowledge, this is the first reported case of cyclical esotropia following vaccination against the COVID-19 virus that was successfully treated by strabismus surgery.

Financial disclosures - The author has no financial disclosures.

## Trochlea, Trochlea, Trochlea

Mr Marcus Posner<sup>1,2</sup>, Ms Kate Reed<sup>1</sup>, Mr Altaf Natha<sup>1</sup>, Ms Louise Brocklesby<sup>1</sup>, Ms Ruqiya Dahir<sup>1</sup>, Mr Ayman Khaier<sup>1</sup>

<sup>1</sup>Bhrut, 23 Essendine Road, United Kingdom, <sup>2</sup>Moorfields Eye Hospital, London, UK

We present a case series of unusual trochlear pathology in young males.

Three patients presenting to Queens Hospital Eye department across 2022-2023 with trochlear pathology.

Firstly an acquired Brown's precipitated by prolonged up-gaze during a triathlon. Resolution achieved with oral anti-inflammatories alone.

Secondly an acquired Brown's immediately following a heavy cocaine binge in a habitual user, recurrent sinusitis and rhinitis. Raised inflammatory and connective tissue markers found raising suspicion of SLE. No improvement with medical therapy.

Thirdly a case of trauma to the orbit resulting in unilateral superior oblique palsy and Brown's a few weeks prior to patient's wedding. A degree of spontaneous resolution, we discuss further management.

With excellent MRI imaging obtained we give pointers on imaging technique and modality.

Notably with the case of prolonged up-gaze we report a treatment regime of oral anti-inflammatory which rapidly diminished symptoms within 4 weeks, of which discussion very little exists in peer review.

## Inferior Rectus Palsy - When Faden comes to rescue

Dr Smita Kapoor

<sup>1</sup>Vision eye centre, New Delhi, India

Purpose - To report the case of a patient with binocular diplopia, who was treated with Faden of the inferior rectus of the normal eye.

Setting - The surgery was performed by a fellowship trained pediatric ophthalmologist and strabismus surgeon at Vision Eye Centres, New Delhi.

Methods -A 28-year-old gentleman presented with binocular diplopia in downgaze since 2 years following a road traffic accident. He had a blow out fracture for which he did not take any treatment. On examination, the visual acuity was 6/6, N6 (OU) with orthotropia in primary gaze and diplopia in downgaze. Cover test revealed (OD) hypertropia and (OS) hypotropia in depression, dextrodepression and levodepression. A computerized tomography showed a blow out fracture in the right eye with no muscle entrapment. Thus, the patient underwent (OS) Faden operation, following which, he was diplopia free in primary as well as downgaze on post operative day 1, at 1 and 6 months follow-up.

Results - The patient was orthophoric in primary and downgaze on day 1, at 1 month, 6 months and 1 year postoperatively. Hess chart revealed symmetric movements in dextrodepression, depression and levodepression.

Conclusion - The posterior fixation suture is highly useful in cases where the yoke of the underacting muscle has to be weakened to maximise the action of the weak muscle, thus reducing the action of the normal muscle. In our case, the inferior rectus of the right eye was paralysed, thus PFS was placed on the left IR to create a pseudoparalysis. This results in equal movement of both the eyes in downgaze thereby reducing diplopia. The ability of the posterior fixation suture to change the ocular alignment in only one direction of gaze is advantageous in cases where there is no diplopia in primary gaze.

Financial disclosure- The author has no financial disclosure.

## Botulinum toxin augmented strabismus surgery in large angle esotropia- A double edged sword

Dr Deepti Joshi<sup>1</sup>, Dr Isha Gupta<sup>1</sup>, Dr Krishnaprasad R<sup>1</sup>

<sup>1</sup>M M Joshi Eye Institute, Hubli, India

**Purpose:** To determine the effect of botulinum toxin augmentation on bimedial recession surgery in children with large-angle esotropia more than 50 PD.

**Setting:** Prospective interventional case series in a tertiary eye care centre in south of India.

**Intervention:** 25 children with large angle esotropia of greater than 50PD were recruited. They underwent bilateral MR recessions in both eyes augmented with 2-3.5 units of botulinum toxin to each medial rectus muscle intraoperatively. They were followed up for a minimum of two years.

**Surgery**

was considered successful if the patients did not require additional horizontal strabismus surgery and had less than 10 PD of horizontal deviation.

**Results:** The median preoperative deviation was 65 PD (range 50–80 PD). Successful outcome was seen in 20 of 25 patients (71.42%),  $p < 0.001$ . Of these 20, 15 demonstrated sensory fusion with worth four dot test. Of the rest 5 patients, 3 had residual small angle esotropia for whom repeat injections were done and 2 developed consecutive exotropia. These two children had inadequate amblyopia treatment pre surgery and had to undergo medial rectus advancement.

**Conclusions:** For children with large angle esotropia ( more than 50 prism diopters), surgery on two muscles may not be adequate. Rather than performing three muscle surgery, botulinum toxin augmentation is a safer alternative helping us to achieve satisfactory binocular alignment of the visual axis with preservation of third muscle for future need. But in presence of amblyopia it may result in consecutive amblyopia.

## Superior Oblique Incarceration Syndrome

Dr Heba Metwally<sup>1</sup>

<sup>1</sup>Magrabi eye hospital, cairo , Egypt, <sup>2</sup>Memorial Institute for Ophthalmic Research , Giza , Egypt

Purpose :

is to demonstrate the postoperative complication of Superior oblique incarceration and determine the importance of dissection of superior oblique frenulum in certain cases settings :

i have 2 cases demonstrating the clinical application of superior oblique frenulum in superior oblique surgery or superior rectus surgery .

Methods : case presentation

Conclusion : dissection of superior oblique frenulum is very important to avoid superior oblique incarceration syndrome

## Modified Yokoyama's technique in a challenge high myopia case

MD Cláudia Costa Ferreira<sup>1</sup>, MD Lígia Figueiredo<sup>1</sup>, MD João Alves Ambrósio<sup>1</sup>, MD Vítor Miranda<sup>1</sup>, MD João Chibante<sup>1</sup>

<sup>1</sup>CHED - Centro Hospitalar de Entre o Douro e Vouga, Santa Maria da Feira, Portugal

**Purpose:** Myopia is associated with ocular comorbidities such as retinal detachment, glaucoma, cataract, optic disc changes, subretinal neovascularization and maculopathy. However, it's also related to an abnormal ocular motility associated with strabismus. When these complications overlap the surgical options are challenging. The authors describe one case of strabismus fixus convergence or "heavy eye syndrome" (HES) treated surgically using a modified Yokoyama's technique.

**Setting/Venue:** Department of Ophthalmology, Centro Hospitalar de Entre o Douro e Vouga, Santa Maria da Feira, Portugal

**Methods:** Case-report of a 59-year-old male, otherwise healthy, presented with esotropia with a high angle of deviation, complete abduction restriction, and torticollis. Ophthalmologic antecedents include: primary open angle glaucoma in both eyes(OU), retinal detachment treated with a scleral buckle in the left eye(OS), and myopia of - 20 dioptres OU. He had no light perception on the right eye(OD) and his best corrected visual acuity on OS was 20/400. Axial length was undetermined in the OD and 33.55 mm in the OS. Orbital magnetic resonance imaging revealed superior rectus muscle(SR) nasal slide and lateral rectus muscle(LR) inferior slide in the OS.

**Results:** The primary goal of surgery was to improve the torticollis in the primary position of gaze. The surgical options were:(1) removing of the scleral buckle in the OS,(2) a 8 mm resection of the LR was performed in the OS,(3) along with an modified Yokoyama suture – hemi-transposition of the SR and the LR 15 mm behind the insertion, securing them 14 mm posterior to the limbus in the middle of the superotemporal quadrant using a scleral point. Four months postoperatively, the patient presented improvement in the torticollis, slight abduction, and a 15º OS esotropia.

**Conclusions:** In patients with strabismus associated with high myopia, a broad spectrum of clinical presentations can be found. The clinical presentation and imaging studies are used to confirm the diagnosis. The final surgical procedure could only be confirmed perioperatively after performing a forced duction test. Surgery remains a challenge and a thorough understanding of the pathophysiology, as well as a skilled surgeon and imagination are required for the success of these difficult cases of fixus strabismus.

No Financial Disclosure