

BIPOSA Annual Meeting



Abstract Booklet

Wednesday 30th September – Friday 2nd October 2026

Titanic Hotel, Liverpool, UK

Oral Presentations • Posters • Electronic Posters

ABSTRACT ID-130040

Retinopathy of Prematurity in a Multiethnic UK Population: Impact of Ethnicity on Severity, Treatment and Discharge

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Low gestational age (GA) and birth weight (BW) are well-established risk factors for retinopathy of prematurity (ROP); the role of ethnicity remains uncertain. The diverse population of the West Midlands provides a unique opportunity to explore the impact of ethnicity on ROP. 346 infants screened for ROP over three years at Birmingham Women's Hospital were studied retrospectively. Data collected included ethnicity, corrected gestational age (CGA) at maximum ROP stage and at discharge, maximum ROP stage, and need for treatment. Multivariable regression analysis was performed adjusting for GA and BW. Five ethnic groups were studied: White (40.8%), Asian (33.5%), Black (18.4%), Mixed White and Black (4.8%), Mixed White and Asian (2.4%). After adjustment for GA and BW, no significant differences were observed across ethnic groups for CGA at ROP onset ($p=0.607$), CGA at maximum stage ($p=0.944$), maximum ROP stage ($p=0.300$), CGA at treatment ($p=0.107$), treatment requirement ($p=0.086$), and CGA at discharge ($p=0.984$). Although a higher proportion of White infants required treatment (13.3%) compared to Asian (7.2%) and Black (6.6%), statistical significance was not reached. Earlier studies suggested that Black ethnicity may protect against ROP, while Asian children may have lower incidence of treatment compared to Caucasians. Inter-ethnic variation in treatment requiring ROP is suggested but did not reach statistical significance in this cohort. Advances in neonatal care may have resulted in more uniform outcomes across ethnic groups. Ethnicity does not appear to independently influence disease severity or follow-up duration in our study. A larger cohort is required to conclude impact of ethnicity."

ABSTRACT ID-130141

Automated Detection of Plus Disease in Retinopathy of Prematurity: Validation of ROP.AI Against Expert Consensus

Elewys Hearne, Amelia Bai, Shuan Dai, Jacky Hung, James E Elder, Shaheen Shah, Heather Russell, Aditi Kirpalani, Christopher Carty, Zachary Tan
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Detection of pre-plus and plus disease is central to retinopathy of prematurity (ROP) screening and clinical decision making. This study evaluated a deep learning algorithm (ROP.AI) for detecting pre-plus and plus disease against a multicentre expert consensus gold standard. In this retrospective validation study, 219 widefield fundus images from five Australian centres were independently graded by six ROP experts as normal, pre-plus, or plus disease. A reference standard required agreement of four or more experts. Images without consensus or deemed ungradable were excluded. Pre-plus and plus disease were combined as a screening outcome. ROP.AI generated probability scores without image preprocessing. Diagnostic performance was assessed using receiver operating characteristic analysis, with sensitivity, specificity, and predictive values at a prespecified threshold of 0.38. A total of 182 images met consensus criteria, including 44 (24.2%) pre-plus/plus and 138 (75.8%) normal. The area under the curve was 0.84 (95% CI 0.76–0.91). At the prespecified threshold, sensitivity was 98% (95% CI 88–100), specificity 56% (95% CI 47–64), and negative predictive value 99% (95% CI 92–100). One false negative represented a borderline pre-plus case with mixed grading. ROP.AI demonstrated high sensitivity and negative predictive value, supporting its potential as a screening and decision support tool. Further prospective validation across broader populations is required to confirm clinical utility.

ABSTRACT ID-130355

The Liverpool ROP Score: Development and Independent Validation of a Novel Predictive Model to Safely Optimise Retinopathy of Prematurity Screening

Bernardo Lopes, Carolyn Armstrong, Sarah Tyson, Hannah Triggs, Rutika Dodeja, Natalie Gallagher, Nihal Kenawy, Damien Yeo

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Background: Current Retinopathy of Prematurity (ROP) screening yields low positivity rates, unnecessarily burdening clinical resources and subjecting non-at-risk neonates to stressful examinations. **Purpose:** To develop and externally validate the "Liverpool ROP Score", a machine learning model predicting Type 1 ROP to safely reduce unnecessary diagnostic screenings. **Methods:** A 650-neonate cohort was partitioned into 70% training and 30% testing sets. Predictors included Gestational Age, Birth Weight, 4-week weight alongside weight-gain (Z-score), and log-transformed mechanical ventilation days. A strict probability threshold was applied to the model's output, aiming for $\geq 98\%$ sensitivity. Two independent clinical validations subsequently followed at Ormskirk Eye Hospital ($n=25$) and Liverpool Women's Hospital ($n=47$). **Results:** In primary testing, the model achieved 100% sensitivity and 100% Negative Predictive Value (NPV) for both Type 1 and Type 2 ROP, yielding a specificity of 51% (95% CI: 44%-58%). Overall, 48% (312/650) of the initial cohort exams could be safely omitted. Furthermore, independent validations retained 100% sensitivity for all true ROP cases (Ormskirk: 3/3 detected, including 1 Type 1; LWH: 11/11 detected). Validation specificities were 36% (8/22 true negatives) and 30.5% (11/36 true negatives), respectively. **Conclusion:** The Liverpool ROP Score demonstrates absolute sensitivity and 100% NPV for treatment-warranted ROP across internal and independent cohorts. Clinical implementation could potentially safely mitigate the ROP screening burden by approximately 30% to 50%.

ABSTRACT ID-130232

Feasibility of Nurse-led Retinal Imaging for Retinopathy of Prematurity (ROP) Screening Employing the Optos California

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We aimed to assess the feasibility of a trained neonatal nurse acquiring retinal images of sufficient quality for retinopathy of prematurity (ROP) screening using the Optos California, and the accuracy of grading these images to detect ROP. A consecutive series of premature infants undergoing ROP screening at the Royal Derby Hospital were imaged by trained neonatal nurses with the Optos California. The digital images were stored separately with all identifiers removed. A same-day, detailed ophthalmological evaluation was performed by an experienced paediatric ophthalmologist using the gold-standard binocular indirect ophthalmoscopy (BIO) with scleral depression. Two masked expert retinal graders evaluated the fundal images to identify the presence of ROP, zonal location of disease, stage of disease, presence of plus disease, and quality of images. These findings were compared with the BIO examination results to determine sensitivity, specificity, and positive and negative predictive values (PPV and NPV). 100 Optos and BIO examinations were performed on 100 eyes of 50 premature infants. Grader 1 and Grader 2 found image quality to be good/fair in 94% and 98% of images respectively. Sensitivity and specificity of ROP detection on Optos imaging was 66.7% and 96.9% for Grader 1, and 61.1% and 96.9% for grader 2. Sensitivity was lower than prior wide-field retinal imaging studies, though specificity remained high, supporting a complementary role in screening. Nurse-led Optos photoscreening had insufficient sensitivity to be a substitute for BIO in ROP screening. Optos imaging should be considered an adjunct to, rather than replacement for BIO in ROP screening.

ABSTRACT ID-130313

Optic Nerve Head Morphology in Premature Infants from 30 weeks to 5 years Post Menstrual Age Using Hand-Held Optical Coherence Tomography

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Premature infants are at risk of reduced visual function, however longitudinal optic nerve head (ONH) development remains unclear. Using ultra-high resolution handheld optical coherence tomography (HH-OCT), we characterise ONH development from 30 weeks to 5 years postmenstrual age (PMA) in preterm infants screened for retinopathy of prematurity (ROP) and compare with full-term infants. 141 premature infants (<32 weeks gestational age at birth or <1500 g birth weight)

and 198 full-term infants (37-42 weeks gestational age at birth) were recruited. Premature infants were grouped by highest grade of ROP; none, regressed without treatment, or treated. ONH images were analysed using a customised ImageJ macro. Developmental trajectories of diametric and peripapillary parameters were compared using fractional polynomial modelling. Before 40 weeks PMA, infants who go to develop ROP requiring treatment show smaller disc and cup diameters and larger rim measurements at 32 weeks PMA ($p<0.001$). At 40 weeks PMA premature infants were found to have smaller rim measurements, larger cup and larger cup-to-disc ratio compared to full-term children ($p<0.001$). During the first two years these parameters became closer to full-term children and subsequently follow similar developmental trajectories. Premature children treated with laser for ROP were found to have thicker temporal RNFL throughout early childhood ($p<0.001$). This is the first in-vivo HH-OCT study of ONH development of premature infants from the neonatal period to five years of age. The developmental differences in optic nerve head structure highlights the potential for ONH parameters to help understanding of abnormal visual function in premature infants.

Abstract ID-130207

A Vitreous State of Affairs: Ten Years of Paediatric Vitreoretinal Surgery at a Tertiary Children's Hospital in the UK

Tracie Liu, Jessy Choi, Raquel Garcia-Cabrera
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Paediatric vitreoretinal (VR) surgery is rare (incidence of rhegmatogenous retinal detachment (RD) 0.38/100,000 children and young people (CYP) compared with 12.4/100,000 adults) and technically challenging. Paediatric VR surgical workload is weighted towards trauma and congenital anomalies, whereas adult-VR is dominated by myopia, age-related changes, iatrogenic and diabetic retinal disease. This study reviews paediatric VR surgical activity and outcomes at a tertiary care centre over a 10-year period. A retrospective review was conducted on consecutive VR surgical procedures performed in patients aged <16 years at Sheffield Children's Hospital between 2015-2025. Theatre procedure codes were screened and data extracted from the Electronic-Document-Management-System. 244 coded procedures were reviewed. 24 CYP met inclusion criteria, underwent 49 VR procedures, performed by a team of 6 out of 7 adult VR-surgeons. CYP undergoing VR surgery resided in areas more deprived than 66.9% of neighbourhoods in England. Mean age at referral was 10.1 years, 66.7% were male. The most common indications were rhegmatogenous RD (54.2%) and ectopia lentis (16.7%). 37.5% of CYP had trauma associated pathology, of which 77.8% were male. 45.8% had congenital anomalies. 45.8% required multiple VR interventions. 69.2% of patients with rhegmatogenous RD had successful VR surgery characterised by reattachment after single intervention. Post-operatively, vision improved in 54.2%, remained unchanged in 25.0%, and worsened in 20.8%. Paediatric VR surgery at a tertiary centre involves a socially deprived population and significant re-intervention. Despite this, VR surgery can deliver meaningful visual improvement. These findings highlight the importance of integrated paediatric VR pathways for outcome optimisation.

Oral rapid-fire presentations
Wednesday 30th September 2026
Free paper session 15.20 pm

Abstract ID-130241

Corneal and Refractive Properties and Correlation to Clinical Measures in Patients with Congenital Nystagmus Syndrome

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To describe the corneal and refractive findings and explore the correlations between refractive findings to visual acuity and other clinical measures in patients with congenital nystagmus syndrome compared to healthy subjects. In this comparative cross-sectional observational study, a Scheimpflug imaging tomography was conducted on eyes of congenital nystagmus syndrome patients and compared with those of healthy individuals (control group). Corneal astigmatism prevalence, corneal astigmatic power, maximal keratometry, mean keratometry and pachymetry values were obtained and compared between the groups. Correlations between the different variables were examined. 212 eyes of 126 congenital nystagmus syndrome patients and 212 eyes of 106 healthy individuals were included in the study. All nystagmus patients (100%) had astigmatism of at least 1 diopter compared to 11 subjects (34.375%) in the control group ($P<0.001$). The average astigmatic power in the patient's group was 3.383 ± 1.135 diopters compared to 0.8281 ± 0.5854 diopters in the control group ($P<0.001$). 53%, 36%, 11% of nystagmus group had hyperopic astigmatism, myopic astigmatism and astigmatism only,

respectively. The maximal keratometric power in the patient's group was 44.16 ± 2.444 diopters compared to 42.88 ± 2.052 diopters in the control group ($P=0.027$). Pearson correlation demonstrated a moderate-to-strong negative association between VA and corneal astigmatism grade ($r = -0.658$ $p < 0.001$). All patients with congenital nystagmus syndrome have visually significant astigmatism. The higher corneal astigmatism grade the lower is the visual acuity.

Abstract ID-130227

Evaluating the Diagnostic Contribution of Clinical Measures for Albinism in Infantile Nystagmus

Gail Maconachie, Callum Hunt, Abdullah Aamir, Helen Kuht, Jinu Han, Line Kessel, Richard Hertle, Sasha Strul, Jing Jin, Vasily Smirnov, Karen Gronskov, Mies van Genderen, Fred Chen, Irene Gottlob, Mervyn Thomas
University of Leicester, Leicester, UK and University of Sheffield, Sheffield, UK

Children and adults presenting with infantile nystagmus often undergo multiple assessments to distinguish albinism from other genetic causes. While iris transillumination (TID), foveal hypoplasia (FH), and fundus hypopigmentation (FHP) provide immediate information, visual evoked potentials (VEP) require additional time, expertise, and patient cooperation. This study quantifies the added diagnostic benefit of VEP compared with routine examinations. Participants with infantile-onset nystagmus from a multinational cohort were included; albinism was defined genetically. Nested binary logistic regression models (with/without VEP) were compared to estimate the incremental diagnostic contribution. Predictors included VEP, FH grading, TID, FHP, visual acuity (VA), age, and gender. Model performance was assessed using 5-fold stratified cross-validation and area-under-the-curve (AUC). The full model, including VEP ($n=160$), yielded an AUC of 0.967 (95% CI: 0.933–0.992), while the model excluding VEP ($n=253$) yielded 0.955 (95% CI: 0.927–0.978), a marginal Δ AUC of 0.012 (95% CI: –0.032–0.060). Significant predictors were TID (OR=6.97), FH (OR=2.31), and FHP (OR=2.93) (all $p<0.01$). Other factors contributed minimally. Variable-importance analysis confirmed TID and FH as the primary diagnostic drivers. These results indicate that VEP provides negligible incremental value when structural markers like TID and FH are available. The lack of significance between models suggests that routine clinical assessments are sufficient for a reliable diagnosis. Routine VEP testing may be unnecessary in most cases where other clinical features strongly support albinism. Given the burden, cost, and specialist expertise required, clinicians should prioritise routine assessments of FH, TID, and FHP, reserving electrophysiology for cases where clinical findings remain equivocal

Abstract ID-130050

Long Term Incidence and Progression Rate of Glaucoma in Patient with Nance-Horan Syndrome in a Tertiary Centre Hospital

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The aim of this study was to evaluate the incidence, progression, and potential risk factors for glaucoma in patients with Nance–Horan syndrome. A retrospective review was conducted of patients diagnosed with Nance–Horan syndrome who underwent ophthalmic assessment at Great Ormond Street Hospital between 2019 and 2026. A total of 24 eyes from 12 patients with genetically confirmed Nance–Horan syndrome were identified. Two carrier females were excluded, leaving 10 male patients (mean age 9.1 ± 4.2 years). All patients had undergone bilateral lensectomy for congenital cataract. Glaucoma developed in 7 patients (13 eyes; 65%, $p=0.01$). Mean intraocular pressure (IOP) was 18.1 ± 3.4 mmHg at baseline and 17.2 ± 3.3 mmHg at final follow-up. In glaucomatous eyes, mean peak IOP was significantly higher compared to the overall cohort (28.4 ± 3.7 mmHg vs 22.1 ± 2.3 mmHg, $p=0.05$). Glaucoma onset demonstrated a bimodal distribution, within 18 months post-lensectomy in 7 eyes (53.8%) and within 10 years of age in 6 eyes (46.1%) ($p=0.04$). Microcornea was present in all glaucomatous eyes, while microphthalmos was identified in 10 eyes (50%), including 6 with glaucoma ($p=0.07$). Eight patients (61.5%) required glaucoma surgery, with 2 (25%) undergoing additional procedures for refractory disease ($p=0.04$). The mean number of topical hypotensive agents was 1.3 ± 0.7 . Visual acuity declined from a mean of 0.47 LogMAR at baseline to 0.62 LogMAR at final follow-up ($p=0.05$). Patients with Nance–Horan syndrome appear to be at high risk of developing glaucoma, so long-term surveillance is needed."

Occurrence of Juvenile Idiopathic Arthritis-Associated Uveitis over 15 years in a contemporary UK screening cohort

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Juvenile idiopathic arthritis-associated uveitis (JIA-U) remains a major cause of preventable visual-loss in children. Its often asymptomatic presentation makes screening critical. Historically, up to 45-57% of high-risk subgroups of JIA reported developing JIA-U. This service evaluation aims to analyse the cumulative risk of JIA-U. Clinical data of JIA-U screening service were reviewed over a period of 15 years (2011-2025) at Sheffield Children's Hospital, UK, with screening in-line with Royal College of Ophthalmologists recommendations. Of 918 reviewed logbooks, 580 JIA met the diagnosis criteria. Over 15 years, JIA-U was detected in 57/580 patients (9.8%, 91 eyes). Children with JIA-U showed the expected higher-risk profile: younger age (3.5 vs 10 years), female sex (78.9% vs 58.9%), and ANA-positivity (70.2% vs 32.1%). Oligoarticular-JIA was the commonest subtype, with 14.6% (41/281) developed JIA-U, accounting for 71.8% (41/57) of JIA-U cases. 47.4% (27/57) JIA-U was present at first screening, while 52.6% (30/57) was diagnosed during surveillance. Time from JIA diagnosis to uveitis diagnosis was much shorter in first-screen cases (1.6 [0.5-2.8] vs 23.4 [7.5-33] months). First-screen JIA-U were diagnosed younger (4.5 vs 5.3 years), more advanced baseline ocular complications (9/27 vs 1/30), worse visual acuity ($>0.5 \log \text{MAR}$) (6/44 vs 1/48 eyes), and more active, ≥ 2 cells (73.2% vs 41.3%). Among those detected at follow-up, 17/30 had established exposure of >12 weeks of systemic Disease-modifying anti-rheumatic drugs (DMARDs) at diagnosis of JIA-U. Despite this, final visual outcomes were favourable in both groups. In this contemporary 15-year screened cohort, JIA-U occurrence was lower than previously reported. Nearly half of JIA-U was detected at first screening, with more structural complications, indicating occult inflammation before pathway entry, highlighting the importance of timely initial screening.

Universal Relapse Following Treatment Reduction in JIA-Associated Uveitis: Real-World Outcomes

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Juvenile idiopathic arthritis (JIA)-associated uveitis is a chronic inflammatory condition requiring prolonged immunomodulatory therapy, and optimal strategies for treatment reduction remain unclear. We conducted a single-centre retrospective study of all paediatric patients with JIA-associated uveitis in South East Scotland managed jointly by ophthalmology and rheumatology services from 2015 to present. Among 92 paediatric uveitis patients, 40 had JIA-associated uveitis. Nineteen patients on systemic immunomodulatory therapy underwent planned treatment reduction following a period of clinical remission, including step-down to monotherapy or complete withdrawal. Time to flare was analysed using Kaplan-Meier survival methods. Relapse was defined as recurrence of inflammatory disease requiring treatment escalation, including uveitis, synovitis, or both. All patients experienced relapse following treatment reduction. Median time to flare was 6 months after complete withdrawal and 5 months after step-down, with no significant difference between groups ($p=0.33$). Duration of remission prior to withdrawal (<24 vs ≥ 24 months) did not significantly influence time to flare (median 5 vs 6 months; $p=0.63$). Relapse most commonly manifested as uveitis (54%), followed by synovitis (29%) and combined disease (17%). The majority of patients were ANA positive, and no meaningful difference in time to flare was observed between ANA-positive and ANA-negative groups (median 5.5 vs 6 months), although subgroup sizes were small. In this cohort of JIA-associated uveitis, treatment de-escalation was uniformly followed by early relapse, regardless of withdrawal strategy, remission duration, or ANA status. These findings suggest that prolonged clinical remission may not reflect durable immunological quiescence and highlight the challenges of achieving safe treatment reduction in this population.

Prevalence of ocular and visual abnormalities following symptomatic and asymptomatic congenital CMV infection: a systematic review and meta-analysis

Naomi Tan, Tamar Schreiber, Alice Bellchambers, Sohaib Rufai, Nutifafa Adorkor, Umar Ahmed, Harry Petrushkin, Ameenat Solebo
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Cytomegalovirus (CMV), the most common congenitally acquired infection, can result in visual disability in affected children. We aimed to estimate the burden of eye and vision disorders amongst children with symptomatic and asymptomatic congenital cytomegalovirus infection (cCMV), to inform the development of guidance for the provision of care. We performed a systematic review and meta-analysis. PubMed, Embase, and CINAHL were searched up to 6/2/2025. We included studies reporting ocular or visual outcomes following cCMV diagnosis. Pooled prevalence was estimated by Restricted Maximum Likelihood Estimation. Studies at lower risk of bias were included in meta-analysis. 4488 articles were identified. 28 were eligible for inclusion. 15 were eligible for meta-analysis (total 858 children with symptomatic, 1176 with asymptomatic cCMV). Estimated pooled prevalence in symptomatic cCMV of visual impairment (VI) and ocular disorders 9% (95% CI, 5–14%, I² = 51.09%) and 14% (95% confidence interval, CI, 5–31%, I² = 93.2%) respectively. Cerebral visual impairment was the most commonly reported visual disability, with an estimated pooled prevalence of 10% (95% CI, 6–15%, I² = 24.9). Prevalence of ocular structural disorders was higher in studies with greater proportions of pre-term birth, hearing impairment, and those undertaken prior to 2017. Estimated pooled prevalence of VI and ocular disorders was 1% and <1% (95% CI, 0–2%, I² = 0%) respectively in asymptomatic cCMV. The low prevalence of sight-impairing disorders in asymptomatic disease suggests little benefit for ongoing ophthalmic surveillance, particularly in health settings with established whole population childhood eye and vision screening.

The Safety and Efficacy of Anti-Vascular Endothelial Growth Factor Biosimilars in Retinopathy of Prematurity

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Princess Alexandra Hospital NHS Trust, UK

Retinopathy of prematurity (ROP) remains a leading cause of preventable childhood blindness worldwide, with increasing reliance on anti-vascular endothelial growth factor (anti-VEGF) therapy. However, the high cost of originator biologics limits accessibility, particularly in low- and middle-income settings, prompting interest in biosimilars as cost-effective alternatives with comparable therapeutic potential. A systematic review was conducted following PRISMA guidelines, searching multiple databases to identify studies evaluating intravitreal anti-VEGF biosimilars in preterm infants with ROP. Eligible studies reported safety and/or efficacy outcomes. Data extraction and risk of bias assessment were performed independently, and outcomes including treatment success, retreatment, and adverse events were synthesised using a random-effects model where appropriate. Five retrospective studies comprising 382 eyes were included. The overall adverse event rate was low (0.5%), with no systemic complications reported. Pooled treatment success was 65% for bevacizumab biosimilars and 46% for ranibizumab biosimilars, while approximately 1% of eyes required surgical intervention. Retreatment rates were high across both groups, reflecting variability in disease severity and treatment response. These findings suggest that biosimilars demonstrate favourable short-term safety but variable efficacy compared to established outcomes from originator anti-VEGF trials. Heterogeneity in study design, small sample sizes, and lack of standardised protocols likely contribute to these differences, alongside limited long-term follow-up data. In conclusion, anti-VEGF biosimilars represent a promising, cost-effective option for ROP management, particularly in resource-limited settings. Their use may expand access to sight-saving treatment globally, though robust randomised controlled trials are needed to confirm equivalence and inform clinical practice.

Abstract ID-130148

Habitual visual acuity and refractive error in children and young people in the Wandsworth Children's Eye Study

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We assessed children and young people (CYP) at 6 schools in Wandsworth, London. This analysis focuses on habitual visual acuity (VA) and refractive error. With UCL Research Ethics Committee approval, we measured monocular distance VA at 3 metres (Thomson), with habitual correction worn where applicable, and repeated with pinhole if VA was ≥ 0.2 . Refractive error was assessed using the PlenOptika QuickSee handheld open-field autorefractor with non-accommodative fixation target at 3 metres. Spherical equivalent refractive (SER) error was classified as emmetropia (+0.50D to -0.50D), myopia (≤ -0.50 D), hypermetropia ($\geq +0.50$ D); astigmatism as ≥ -1.00 DC, and anisometropia as ≥ 1.00 D interocular SER difference. Of 1,019 participants, 81 (8%) had VA worse than 0.2 LogMAR in both eyes, and 59 had VA worse than 0.2 and not wearing spectacles in both eyes. Of 2,353 eyes, 63% had SER between 0 and $< +3.00$ D. Higher hypermetropia was uncommon (1% $\geq +6.00$ D; 1% $+3.00$ to $< +6.00$ D). 35% of eyes had myopia, with 16% between -0.50 and < -3.00 D, 6% between -3.00 and < -6.00 D, and 1% ≤ -6.00 D. The proportion of participants with habitual VA worse than 0.2 LogMAR represents a significant burden of functional visual impairment, indicating gaps in detection of or access to appropriate refractive correction. Open-field autorefraction was feasible and well tolerated in this school-based setting. Missing data were primarily due to data-saving errors. Open-field device design reduces but does not eliminate instrument-induced accommodation and subsequent underestimates of hypermetropia and overestimates of myopia. Our findings support the value of school-based vision screening to identify and address unmet visual needs in CYP

Abstract ID-130025

Effectiveness of inferior plication of the medial rectus muscle in the management of near exotropia

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To evaluate the long term effectiveness of medial rectus muscle inferior plication in the management of near exotropia and to explore the relationship between surgical dosage and change in deviation. A retrospective cohort study was undertaken of patients who had undergone inferior plication of the medial rectus for near exotropia under the care of one single surgeon. Pre-operative variables included near and distance deviation in prism dioptres, number of muscles operated, and total surgical dosage. Primary outcomes were defined as numerical success (post-operative deviation < 10 prism dioptres) and subjective success (absence of symptoms without need for further treatment, including prisms). Secondary outcomes assessed the relationship between total muscle dosage and change in deviation by using linear regression models. Thirty-eight procedures were analysed with follow-up ranging from 1 to 24 months (mean 6 months). Numerical success was achieved in 24/38 patients (63.2%), while subjective success was achieved in 21/38 patients (55.3%). Linear regression demonstrated a statistically significant association between total surgical dosage and change in near deviation ($p = 0.018$), although the strength of correlation was modest ($R^2 = 0.145$). No significant effect was observed on distance deviation ($p = 0.448$). Two patients (5.3%) developed overcorrection at distance, both of whom remained asymptomatic. Inferior plication of the medial rectus is an effective surgical option for managing near exotropia, achieving favourable outcomes without significantly altering distance alignment. Further research is warranted to better define the dose-response relationship and optimise surgical planning.

Abstract ID-130123

A retrospective, observational study of the management of superior oblique myokymia at Moorfields Eye Hospital between 2020-2026

Elspeth Green, Varshie Jeyarajah, James Acheson, Ailbhe Burke, Aditi Das, Joanne Hancox, Neringa Jurkute, Heidi Laviers, Axel Petzold, Maria Theodorou, Ahmed Toosy, Katie Williams, Sui Hsein Wong
Moorfields Eye Hospital, London, UK

Superior oblique myokymia is a rare condition causing monocular, torsional, involuntary contractions of the superior oblique. Various treatments have been described, including lifestyle modifications, drops, systemic medication, botulinum toxin and surgery. Case series report high success rates approaching 100%. This study investigated real-world practice and the longer-term effectiveness of treatments within a single trust. Methodology: This retrospective, observational cohort study identified eligible patients at Moorfields Eye Hospital. The electronic patient record was searched for the term "superior oblique myokymia" between January 2020 and January 2026. Digital records were reviewed to confirm the diagnosis. Data collected included demographics, date of diagnosis, and date of commencement and cessation of treatments. Results: 36 patients were included. MRI brain was performed in 28 (78%). Sixteen patients (44%) received no treatment, and lifestyle modifications were documented for 6. Other treatments included Timolol drops (0.25% and 0.5%) and gel (0.25%), levobutanol 0.5%, brinzolamide, carbamazepine and botulinum toxin. Treatment courses varied, with some patients trialling multiple options, and others few. Topical Beta-blockers were the commonest first line intervention (14 patients, 38%). Most patients discontinued treatment, only 1 due to full resolution of symptoms. Seven (19%) were still on treatment with ongoing symptoms at the study end. Side effects occurred with preserved Timolol 0.5%, carbamazepine, and botulinum toxin. This is the largest cohort of superior oblique myokymia patients described in the literature. It reflects current practice, including the uptake of Timolol gel since the early 2010s. The study shows much lower clinical effectiveness than previously reported.

Abstract ID-130117

Myopia prevalence among 1064 children and young people in the Wandsworth Children's Eye Study

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The Wandsworth Children's Eye Study measured ocular data in 1,064 children and young people (CYP) aged 8-18 years in three primary and three secondary schools across Wandsworth, London. This analysis focusses on prevalence of myopia. With UCL Research Ethics committee approval and informed consent from parents/CYP, we measured refractive error using the PlenOptika "Quicksee" device, a handheld monocular open-field autorefractor with a non-accommodative fixation target at 3m. We also measured axial length using the handheld Occuity AX1 Axiometer. "Myopia" is defined as a spherical equivalent refractive (SER) error of greater than -0.50D, and an axial length of greater than 24mm. Complete refractive data was available for 1,016 children, and axial length data for 869 children. 209 (21%) had myopia in both eyes and 184 (21%) had axial length of ≥ 24 mm bilaterally. 13.8% had low myopia (-0.50Ds to -3.00Ds), 4.5% moderate myopia (-3.00to -6.00Ds) and 2.2% high myopia (greater than -6.00Ds). We find a higher prevalence of myopia (21%) in CYP aged 8-18 years in a south London school cohort than the NICER (Northern Ireland Childhood Errors of Refraction 2016) study, where 16.4% of 12-13-year-olds and 18.6% of 17-year-olds had myopia. This agrees with a recent literature review of myopia prevalence in 15 to under 20-year-olds of 21.5%. Our data agrees with worldwide studies that the prevalence of myopia in CYP is increasing. Further analysis on this data set will explore at-risk groups.

Abstract ID-130217

Dose-response relationship and treatment efficiency for patching vs gaming therapy for amblyopia

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Erasmus MC University Medical Center, Rotterdam

To compare the dose-response rate and treatment efficiency between patching therapy and dichoptic action video gaming using virtual reality (VR) goggles in children with amblyopia. In this prospective Randomised Clinical Trial (NCT 03767985) newly diagnosed children with amblyopia were recruited. After 16 weeks of refractive adaptation they were randomised to

electronically monitored patching therapy: 2 hrs/day; or dichoptic video game therapy using VR goggles: 1 hr/wk under direct supervision. Primary outcome was visual acuity (VA) change from baseline to 24 weeks. Ninety-four children were recruited; 29 subjects refused, 9 were excluded. After refractive adaptation period, 23 subjects (24%) attained interocular VA <0.2 logMAR rendering them ineligible for the RCT. Thirty-three children were included; median age was 5.4 (IQR 4.5-6.7) years. Mean compliance with patching therapy was 81±42%. Nine (56%) dropped out of the gaming group compared to 3 (18%) in the patching group. Reasons for drop-out in the gaming group were primarily due to young age (i.e. difficulties comprehending the game settings and the game itself) and logistic problems. Median VA improved by 0.30 logMAR (IQR 0.20-0.40) after gaming, 0.20 logMAR (0.00-0.30) after patching ($p = 0.823$). Treatment efficiency was 1.25 logMAR/100 h (range 0.42-2.08) with gaming, 0.08 (-0.19-0.68) with patching ($p < 0.001$). Treatment efficiency was significantly higher with gaming therapy. However, more than half of the children from the gaming group failed to complete the treatment. Dichoptic gaming seems a viable alternative for older children with refractive amblyopia after glasses adaptation

Abstract ID-130124

Challenges and Adherence in Anti-Myopia Progression Therapy: A Real-World Single-Centre Study

Alison Greene, Rochanne Wootton, Kathryn McCreery
Children's Health Ireland, Dublin, Ireland

Global myopia prevalence has risen from 22.9% in 2000 to 34% in 2020 and is projected to reach 50% by 2050. Evidence-based interventions, including low-dose atropine, optical treatments, and lifestyle modifications, can slow progression in children but real-world implementation remains challenging. This study evaluated adherence and efficacy in a cohort of myopic children. A 5 year retrospective review of all patients receiving myopia control treatment was conducted in a single practice. Patients with syndromic myopia or amblyopia were excluded. Patients were treated with atropine drops (0.01%, 0.05%, 0.5%, 1%) ± myopia control lenses/contact lenses. Standard protocol involved 3 years of atropine therapy, with dose adjustments guided by emerging evidence (e.g., switching from 0.01% to 0.05%). Poor responders received higher doses. Environmental advice was provided. Cycloplegic spherical equivalent refraction (SER) was recorded at baseline and annually. Progression rates, compliance, symptoms, and reasons for treatment modification or cessation were analysed. Approximately 250 patients were included (mean age was 9.7 years [range 3-19 years]; baseline SER -3.82D) with 80% reporting parental myopia. Treatment significantly reduced progression compared with historical data. Early compliance issues occurred in 27.4%, but discontinuation was low (3.9%), mainly due to near blur and photophobia. Adherence difficulties were more frequent in older children and females. Additional barriers included cost, supply constraints, and limited parental understanding. Dose adjustments improved tolerability and enabled continued treatment in most cases. Anti-myopia therapies are effective in practice, but outcomes are influenced by adherence, tolerability, and access. Addressing these barriers is essential to optimise long-term effectiveness."

Abstract ID-130609

Eye tracking in the clinic – a pilot study

Cathy Williams, Isaac Henderson, Rosie Clark, Penny Warnes, Iain Gilchrist
Bristol Eye Hospital, Bristol, UK

Eye-tracking is widely used commercially but rare in routine paediatric ophthalmology. We carried out a service evaluation of a pilot children's eye tracking clinic. We invited children with known/suspected oculomotor problems. We collected process data (success of calibration, duration of testing) and clinical data (age, diagnosis, orthoptist ratings of large/small, horizontal/vertical voluntary saccades) and eye tracker metrics. We compared orthoptic ratings with eye-tracker findings. Twenty-one children were invited and usable recordings obtained from 20. Individual calibration was good in 6, poor in 3 and impossible in 11. Mean (SD), range for age was 10.9 (2.5), 6-15 years and for duration of testing was 13.5 (5.8), 7 – 30 minutes. Three children had nystagmus. We grouped the other 17 children according to their orthoptic ratings: A (n=8) had poor saccades for both directions and amplitudes; B (n=5) had poor saccades for specific directions only, and C (n=4) were rated as normal by the orthoptist. All group A children had eye-tracker abnormalities including a weak relationship between amplitude and peak velocity (main sequence correlation $r < 0.8$) in 6 and directional asymmetries ($p < 0.05$) in 2. In group B, 4 of the 5 had confirmed asymmetries and in Group C, 2 had normal eye tracking, and 2 had subclinical abnormalities. This pilot clinic indicated eye-tracker testing can be feasible in a routine clinical setting. Abnormalities of the main sequence or directional asymmetries confirm a neurological basis for poor saccades, even without individual calibration. This information can help with diagnosis and support for affected children

An Interpretable Machine Learning Model for Predicting Outcomes After Horizontal Strabismus Surgery: A Clinical Decision-Support Tool

Rohan Misra, Ameet Patel, Saurabh Jain
Royal Free London NHS Trust, London, UK

Outcomes following horizontal strabismus surgery are influenced by multiple patient and surgical factors, making pre-operative counselling and surgical planning challenging. We developed and internally validated an interpretable machine learning model to predict three-month surgical success and deployed it as a web-based point-of-care tool to support clinical decision-making. We retrospectively analysed 304 patients undergoing horizontal strabismus surgery at a large tertiary referral centre in London. Surgical success was defined as three-month post-operative horizontal deviation within ± 10 prism dioptres. A random forest classifier was trained using pre-operative variables including age, horizontal and vertical deviation, planned muscle surgery (recession/resection in mm), and adjunctive procedures such as inferior oblique surgery and transpositions. Hyperparameters were optimised using repeated five-fold cross-validation. Model outputs were interpreted using SHAP (SHapley Additive exPlanations) values to identify key drivers of individual predictions. The final model was deployed as a web-based interface with input validation safeguards to prevent predictions on implausible clinical scenarios. The model achieved an AUC-ROC of 0.67, accuracy 64.6%, sensitivity 64.7%, and specificity 64.6% on cross-validation. SHAP analysis identified pre-operative horizontal deviation, patient age, and the presence of inferior oblique surgery as the most influential predictors, with greater impact than individual muscle dosage alone. The deployed interface provides individualised outcome probabilities alongside visual explanations of contributing factors, enabling transparent interpretation at the point of care. Interpretable machine learning can identify non-linear relationships influencing strabismus surgical outcomes and translate these into clinically usable predictions. This proof-of-concept tool demonstrates potential utility as an adjunct for surgical planning and patient counselling. Prospective multi-centre validation is required before integration into routine clinical practice.

Oral rapid-fire presentations

Thursday 01st October 2026

Rapid-fire presentation session 14.00 pm

Surgically-induced hyperopic blur as a treatment for intractable diplopia

Wannise Jones, Abdul-Jabbar Ghauri
Birmingham and Midland Eye Centre, Birmingham, UK

To describe surgically-induced hyperopic blur as a treatment for intractable diplopia. To our knowledge, this is the first published case of this method. A 47-year-old male with intractable diplopia was referred for tertiary opinion. He had right eye amblyopia, squint surgery at age 11 for esotropia and his diplopia started at age 43. Examination revealed: right visual acuity 6/48; variable angles of esotropia (at near) and exotropia (at distance); hypertropia at near and distance; suppression scotoma was not located; intractable diplopia on prism and synoptophore testing. An occlusive contact-lens was not tolerated and he requested eye removal. An opaque intraocular lens (IOL) was unavailable, therefore options considered included high-powered fogging IOL or aphakia. Pre-operative subjective refraction of the right eye was plano/-1.00x170 and contact-lens adaptation identified that blur from 20.00D of hyperopia would eliminate diplopia. Biometry indicated a -18.50D IOL would induce this. A decision was made for aphakia, as secondary IOL would be possible in the future if necessary. Phacoemulsification was uneventful, diplopia was eliminated with aphakia and the patient is satisfied with the result. Management of intractable diplopia remains challenging. Opaque IOL implantation has been successful, however, there are drawbacks: availability in the UK has been limited; occluded eyes require specialist annual screening for pathology; vision loss in the fellow eye requires IOL exchange. Post-insertion light perception and diplopia have also been reported. Surgically-induced aphakia removes most of these problems. Careful patient selection, contact-lens adaptation and counselling minimise the risk of intolerable post-operative light perception and diplopia.

Abstract ID-130238

Surgical outcomes of nasal Nishida procedure

Isaac Naraine, Zhihang Cheng, Ian Marsh
Aintree University Hospital, Liverpool, UK

Vertical rectus muscle transposition procedures are important in managing complex horizontal strabismus. This is pertinent when conventional horizontal muscle surgery is unviable due to muscle paralysis. The Nishida muscle belly transposition technique enables redirection of vertical rectus force without tendon disinsertion, preserving anterior segment circulation. While temporal Nishida transposition is widely used, nasal transposition remains less studied. This retrospective cohort study reports the surgical technique of nasal Nishida and outcomes of nasal versus temporal Nishida procedures performed by a single surgeon at Aintree Hospital. Eighteen cases were analysed (9 nasal, 9 temporal). The primary outcome was change in horizontal deviation measured in prism dioptres (4). We also undertook detailed analysis of the indications of cases where nasal Nishida was performed. Non-parametric analysis was performed using the Mann-Whitney U test. Mean pre-operative deviation was greater in the nasal group compared to the temporal group (42.3 A -31.94). Post-operative deviation was also higher in the nasal group (21.94 vs 7.64). Mean improvement was 20.44 for nasal and 25.84 for temporal transposition ($p=0.536$). The nasal group demonstrated a similar range of deviation improvements (5-354) compared to the temporal group (11-484), with a nasal Nishida procedure performed in greater heterogeneity of diagnoses. These findings suggest that nasal Nishida procedure provides comparable horizontal alignment correction to temporal transposition. Despite the diverse clinical indications in our cohort, nasal Nishida represents a valuable surgical option in complex strabismus, particularly when tailored with adjunctive procedures."

Abstract ID-130312

Endophthalmitis Following Extraocular Botulinum Toxin Injection: A National Survey of Infection Prevention Practices

Aarti Patel, Komal Hirani, Kelly Mackenzie, Naz Raouf
Moorfields Eye Hospital, City Road, London, UK

Botulinum toxin is an established and widely utilised therapeutic modality in the strabismus management. An incident of endophthalmitis occurred in a high-volume tertiary service in a patient undergoing routine extraocular botulinum toxin injection. Following multidisciplinary review through local governance pathways, a national survey was undertaken to evaluate infection prevention practices. A survey was distributed via email to members of a UK strabismus consultant ophthalmologist server in September 2025. The survey, consisting of 7 questions evaluated current clinical practice for infection prevention for the administration of extraocular botulinum toxin. Responses were collated and compared to local current practice. Details of the case will be presented. Responses were received from 16 clinicians. Fifty-six percent reported routinely wearing gloves, of which 66% and 33% use sterile and non-sterile gloves respectively. Povidone-iodine was used pre-procedure by 25% of respondents, while 38% applied chloramphenicol post-procedure. Three respondents reported wearing gloves and using both Povidone-iodine and chloramphenicol. None of the respondents gave a course of antibiotics post procedure. Endophthalmitis following strabismus toxin injection is exceedingly rare, with an estimated incidence of approximately 1:50,000 and very few cases reported in the literature. Possible risk factors in this case included prior ocular surgery, the presence of a glaucoma tube and a non-Consultant injector. Vigilance for warning signs, appropriate case selection, and experienced supervision are critical to minimising risk. Review of national practice patterns demonstrated variability in practices with no clear evidence that additional measures reduce risk, given the very low incidence of infection associated with toxin injections overall.

Abstract ID-130502

Patient Perspectives on Anaesthesia Choices for Strabismus Surgery: A Qualitative Analysis

Sinmiloluwa Tokede, Raymond Hassanzadeh, John Somner
Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK

Strabismus surgery is a common ophthalmic procedure often conducted under general anaesthesia (GA) or local anaesthesia (LA). While clinical outcomes are well documented, patient-reported experiences regarding these choices remain underexplored. This study aimed to explore the subjective experience and decision-making drivers behind anaesthesia choices, comparing preoperative expectations with the post-operative reality. We conducted a qualitative study using semi-structured interviews. Nine adult patients who recently underwent routine strabismus surgery were

interviewed. Audio recordings were transcribed verbatim and analysed using inductive thematic analysis to identify recurring patterns, which the research team grouped into major themes. Four themes were identified. First, service-related pragmatics, particularly shorter LA waiting lists and faster post-operative recovery, were key drivers toward LA, with some patients selecting it solely to expedite access. Second, psychological barriers to LA were near-universal; fear of ocular awareness, anticipation of witnessing surgical instruments, and anxiety about involuntary movement constituted the dominant obstacle even among patients who ultimately chose LA. Third, information and communication gaps were prevalent; patients frequently lacked pre-operative detail about intraoperative sensations, including temporary visual loss following sub-Tenon's block, with several discovering critical information only on the day of surgery. Fourth, trust in the surgical team and peer influence facilitated LA acceptance. Although patients showed willingness to consider LA when properly counselled, psychological barriers and communication deficits remain significant obstacles. Proactive, individualised pre-operative education addressing intraoperative experience, movement control, and waiting time differences may optimise shared decision-making and improve LA uptake for strabismus surgery.

Abstract ID-130125

Photograph-Assisted Triage of Suspected Squint Referrals in Children Under 3 Years: Improving Differentiation of Pseudostrabismus from True Strabismus

Amber Griffin, Chloe Zheng, Damien Yeo
Alder Hey Children's Hospital, Liverpool, UK

Pseudostrabismus is a common referral to the Hospital Eye Service. Referrals from health visitors and general practitioners (GPs) often lack sufficient detail for accurate triage, which may delay assessment of children with true strabismus. We evaluated whether inclusion of a photograph could enhance the triage process. Retrospective data from 2020–2024 were reviewed for children under 3 years referred by health visitors or GPs with suspected squint, where a photograph was included with the referral or obtained at first clinic assessment. Patients with visual concerns, developmental issues, or suspected structural anomalies were excluded. A masked orthoptist and ophthalmologist independently graded photographs as pseudostrabismus, strabismus, or ungradable. Findings were compared with the final clinical diagnosis. Forty-five patients were included. The orthoptist and ophthalmologist deemed 11 and 5 images ungradable respectively, with all cases due to absent corneal reflexes. Among gradable images, agreement between assessors was substantial (Cohen's kappa = 0.76). For identifying pseudostrabismus, the orthoptist demonstrated sensitivity of 96.4% (95% CI 89.6–103.3%) and specificity of 83.3% (95% CI 53.5–113.2%), with positive predictive value (PPV) of 96% and negative predictive value (NPV) of 83%. The ophthalmologist demonstrated sensitivity of 97.1% (95% CI 91.4–102.7%) and specificity of 66.7% (95% CI 28.9–104.4%), with PPV of 94% and NPV of 80%. Including a photograph with a squint referral may improve risk stratification, enabling earlier review of true strabismus while directing likely pseudostrabismus cases to orthoptist-led clinics. Photograph quality is essential, particularly clear demonstration of corneal reflexes.

Oral presentations

Thursday 01st October 2026

Free paper presentation session 16.40 pm

Abstract ID-130300

Trajectory of visual outcomes from amblyopia therapy in the real-world: An analysis of 681 outpatient appointments in a UK hospital

Daniel Osborne, Jeremy Bradshaw, Jemima Pickard, Jay Self
University Hospital Southampton NHS Foundation Trust

Clinical care of amblyopia almost exclusively uses interocular difference in visual acuity (IOD) for all clinical decisions. Despite this, we do not have a longitudinal model of change in IOD over the duration of therapy. Trial, hospital or observational data could be used to develop the model, which could describe average responses to therapy and identify patient and therapy characteristics important to improving outcomes. We extracted IOD data from patients that began atropine penalisation or patching therapy for amblyopia in Southampton General Hospital (UK) between December 2023 and June 2025. Using linear mixed models, we identified key timepoints when IOD is improving quickest and measured the effect of starting IOD (amblyopia severity), socio-economic status, and recurrent non-attendance to outpatient clinics on longitudinal IOD outcome. We included 681 measurements of IOD from 180 patients with a median age of 5.4 years. Quickest improvement in IOD was achieved within the first 49 days of therapy when patients with mild conditions ($\text{IOD} \leq 0.3 \log\text{MAR}$) improved from a mean of 0.20 to 0.13; moderate ($\text{IOD} 0.3\text{--}0.6$) from 0.42 to 0.30; and severe ($\text{IOD} \geq 0.6$) from 0.84

to 0.48. Severe cases continued to improve to 0.38 by day 167 after which they stayed stable until day 365, while mild and moderate remained stable from day 49 to 365. We found no association between socio-economic status or non-attendance with IOD. The first 49 days of therapy are critical to outcomes from amblyopia therapy. Future work should diversify research methods to improve our understanding of amblyopia therapy.

Abstract ID-125999

Evaluating the acceptability and feasibility of the adapted Visual Impairment Screening Assessment (VISA+) tool for children with acquired brain injury

Abigail Bridge, Girvan Burnside, Lauren Hepworth, Claire Howard, Fiona Rowe
University of Liverpool, Liverpool, UK

Improving visual care and intervention for children following acquired brain injury (ABI), including stroke, is an identified national research priority. VISA+ is a 'child-friendly' version of the VISA (Visual Impairment Screening Assessment) screening tool which is validated for use in adults. Phase one of VISA+ aimed to evaluate the feasibility and acceptability of VISA+. A prospective mixed-method comparative case-cohort study was conducted. Comparisons were made between VISA+ and the reference specialist orthoptic assessment. Completion rates informed acceptability and feasibility. Thematic analysis of VISA+ clinician open-text questionnaire responses further informed feasibility. Inter-rater reliability was evaluated through section-level agreement. Evaluation of sensitivity, specificity, accuracy, and predictive values informed provisional validity of VISA+. Phase one included ten clinicians who conducted VISA+ on 30 children aged 2-18 years (with a recent ABI). Completion rates were high across all sections except visual fields and visual perception. Section-level agreement was substantial or higher, aside from visual fields (moderate). Sensitivity and specificity were moderate/excellent across all sections except visual fields (satisfactory sensitivity/excellent specificity). All sections showed excellent predictive values and accuracy. Clinician questionnaire analysis informed a single revision to VISA+, incorporating format changes and expanded assessor guidance. Phase one indicated encouraging levels of VISA+ feasibility and acceptability in this real-world healthcare setting. Phase two will assess the diagnostic accuracy of VISA+ to validate its use as a robust vision screening tool for children after ABI. VISA+ could potentially improve VI detection, strengthen referral accuracy, support the child's holistic rehabilitation journey, and meet the identified research priority

Abstract ID-130401

Why does crowding reduce vision in albinism?

Vijay Tailor-Hamblin, Annegret Dahlmann-Noor, Maria Theodorou, Tessa Dekker, John Greenwood
Moorfields Eye Hospital, London, UK

Individuals with Albinism present with reduced visual acuity, many also report disproportionate difficulty recognising objects in cluttered environments - crowding. As Albinism involves both retinal underdevelopment and Nystagmus, it is unclear whether increased crowding is driven by eye movements or an additional sensory deficit. We aim to clarify the underlying mechanisms by examining the characteristics of foveal crowding in individuals with albinism. Adults with albinism (n=8) and age-matched controls (n=8; 19-49 years) performed a visual identification task using Landolt-C targets presented foveally. Crowding was assessed by presenting targets in isolation or surrounded by flankers. Spatial selectivity was assessed by comparing horizontal versus vertical flankers, and featural selectivity by varying contrast polarity (black vs white). Participants identified the gap orientation of foveal Landolt-C targets, with thresholds estimated using an adaptive QUEST procedure that varied gap size to converge on 62.5% correct. Crowding was elevated in individuals with albinism compared to controls ($p < 0.001$). Spatially, crowding was significantly stronger when flankers were positioned horizontally rather than vertically ($p = 0.020$), matching the predominant direction of nystagmic eye movements. However, altering contrast polarity between target and flankers did not reduce crowding ($p = 0.269$), unlike in typical vision, indicating a lack of normal feature-based segmentation. Visual impairment in Albinism is not explained by acuity or nystagmus alone. Elevated crowding reflects both eye movement effects and an additional sensory deficit. Standard acuity may underestimate functional vision; assessing crowding could better reflect real-world performance and guide management."

Important Outcomes for Children with Cerebral Visual Impairment Plus Profound & Multiple Learning Disabilities (CVI+): Parent & Professional Insights

Louise Allen, Jignasa Mehta, Rachel Pilling, Fiona Rowe, Kerry Woolfall
University of Liverpool, England

This research explored views on what outcomes are important to measure in effectiveness studies about CVI+. It forms a work package within the development of a 'core outcome set': the minimum list of outcomes that should be measured in all effectiveness studies about a certain condition. Focus groups and semi-structured interviews were conducted (August 2025 to January 2026). Participants were asked about what could be important to measure generally, and in the context of research. Reflexive thematic analysis was used to identify themes. Twenty-six professionals from teaching, paediatric, ophthalmology, and allied health backgrounds attended one of three focus groups, and 18 parents/carers of children with CVI+ were interviewed. Professionals and parents/carers suggested 23 and 20 additional outcomes respectively not identified in the prior literature review. Themes identified from the focus groups were: a 'good' outcome measure has a clear path to impact; outcome choice is contextual; the CVI+ professional community; and the ultimate goal is expression of choice. Themes identified from the parent/carer interviews were: discovering what and how my child sees; life with CVI+ and its impact on outcome selection; parental needs as outcomes; and there are particular outcomes of importance to parents/carers. Professionals refer to good outcomes as those that cut across variables. Outcomes related to choice were important to professionals. While this mattered to parents/carers, they focused more on access to knowledge, support, and awareness to help their child. The next stage of the study will now benefit from incorporation of outcomes not identified in the literature.

Neuroprotective genetic variants and risk for cerebral visual impairment (CVI)-related traits: data from a birth cohort study

Cathy Williams, Silvia Pregnotato, Jeremy Guggenheim, David Odd, Eileen Birch, Anna O'Connor, Yi-Zhong Wang, Ilona Kovács, Karen Luyt
Bristol Medical School, Bristol, UK

Neuroprotective genetic variants that modify motor outcomes after perinatal neuronal injury are being considered as potential targets for interventions. As neuronal injury is also a risk for cerebral visual impairment (CVI), we hypothesized that neuroprotective variants may modify CVI outcomes. We used data from a birth cohort study (ALSPAC) to compare CVI-related visual outcomes in children with and without neuroprotective genetic variants. We obtained data for 28 known neuroprotective genetic variants, along with CVI-related visual outcomes, for ALSPAC participants. We created variables of "likely visuospatial problem", "likely recognition problem" and "abnormal supranuclear eye movements". We used logistic regression to investigate associations between the 28 variants and each (or any) CVI-related outcome, in the overall sample with data and in the subset admitted to hospital as neonates (at-risk sample). Overall, analyses included 2794-4015 children (depending on the outcome), with 216-301 in the at-risk subset. The regression models for the at-risk subset explained more variability in the vision outcomes (Pseudo R²: 9%-45%) compared with equivalent models for the overall samples (Pseudo R²: 1% to 3%). Almost half (13/28) the neuroprotective variants showed associations ($p < 0.05$) with one or more CVI-related outcomes: 5 in the full sample, 3 in the at-risk sample and 5 in both samples. Some variants were in genes previously associated with CVI-related visual outcomes (GRIN2) or visual outcomes unrelated to CVI (FADS2); others were novel associations (VIP). These data may help explain the mechanisms relating perinatal neuronal injury to CVI and help with early diagnosis and/or novel treatments.

Abstract ID-130335

Effect of Inferior Oblique Weakening Surgery on Horizontal Deviation

Andreas Roussos, Karthika Ullattil, Ayman Awadghanem, Arlinda Sulejmani, Laura Roberts, Anugya Agrawal, Vernon Geh
Southend University Hospital, Essex, UK

Inferior oblique (IO) weakening surgery is commonly performed in the management of strabismus. Although the IO functions as an abductor, its influence on horizontal alignment remains uncertain. This study aimed to evaluate the effect of IO weakening surgery on horizontal deviation at near and distance fixation. A retrospective analysis was undertaken of patients undergoing IO weakening procedures (myotomies and recessions) over a five year period. Horizontal deviation at near and distance fixation was recorded pre operatively and at first post operative follow up. Horizontal change was calculated as the difference between pre and post operative deviation. A change of ≥ 10 prism diopters at either near or distance fixation was defined as clinically significant. Descriptive statistics were used to summarise deviation values, and paired pre and post operative measurements were compared using the Wilcoxon signed rank test. Forty nine patients were included (median age 16 years, range 4–80). Median horizontal change was 0 prism diopters at both at near and distance fixation. Mean horizontal change was 1.53 prism diopters toward esotropia near and 1.51 prism diopters toward esotropia at distance. No statistically significant difference was observed between pre operative and post operative horizontal deviation at near or distance fixation ($p = 0.31$ and $p = 0.28$). Clinically, no significant horizontal deviation change was observed in 79.6% of patients. The predominance of unilateral procedures and myotomies limited meaningful subgroup comparison. IO weakening surgery did not result in a clinically significant change in the horizontal deviation in majority of patients. Despite the IO's abducting action, weakening procedures appear to have minimal horizontal impact in clinical practice."

Abstract ID-130155

Bimedial Recessions in Distance Esotropia in Myopes: Should Angle of Deviation or Fusion Range Guide Surgical Decision Making?

Davina Jugnarain, Jonathan Marler, Zhihang Cheng, Saurabh Jain
Royal Free Hospital, London, UK

Low to moderate myopia in young and middle-aged adults is commonly associated with esotropia greater at distance, reduced base-in and increased base-out fusional reserves, possibly reflecting increased tonic medial rectus drive. We carry out bimedial recession (BMR) in these patients, and feel that dosing based on solely distance deviation may be inadequate. This study evaluated whether preoperative distance prism dioptre (PD) or the prism fusion range (PFR) better predict postoperative alignment in myopic esotropia. A retrospective analysis of 18 patients with complete datasets (age, sex, spherical equivalent, pre- and postoperative deviations and PFR) was conducted. Surgical dosing was relatively uniform, with most patients undergoing 5-6 mm bilateral medial rectus recession, irrespective of preoperative distance PD. Overall, 89.3% achieved alignment within 5 PD of orthotropia. Linear regression demonstrated a weak relationship between preoperative distance PD and postoperative alignment ($R^2 \approx 0.13-0.22$) indicating limited explanatory value. In the small-angle subgroup (≤ 20 PD, $n = 10$), PFR modestly improved explanatory power ($R^2 \approx 0.30$), though this was not statistically significant. These findings suggest that preoperative distance PD may not need to be the primary determinant of surgical dosing in this context as static deviation measurements may not fully reflect the mechanisms influencing postoperative alignment. Fusion parameters may have greater relevance in small-angle deviations but further research is needed. Overall, a simplified, standardised surgical approach may achieve comparable outcomes, potentially reflecting a shared underlying mechanism related to convergence tone rather than deviation magnitude."

Abstract ID-130030

Binocular vision anomalies in Scotland at age 3.5-5.5 years, identified through pre-school screening

Miriam Conway, Lee Pentland, Benjamin Evans, Dave Edgar, Rakhee Shah, Bruce Evans
Scotland Ninewells Hospital, NHS Tayside

Background and aim: The See4School programme has invited all Scottish children 3.5–5.5y to attend vision screening carried out by registered orthoptists. Around 55,000 children are eligible each year. This epidemiological study aimed to determine the prevalence of binocular vision anomalies (BVAnom), assess changes in prevalence across 2013–2022, and evaluate how many cases would be missed using presenting vision alone. Methods: Refractive errors were assessed only in children who failed vision screening and were referred for a full eye examination, including cycloplegic refraction (≈5,000 annually). Binocular vision anomalies (BVAnom) were evaluated in all children attending screening (≈40,000–50,000 annually) using the cover test (distance and near), ocular motility assessment, near point of convergence, 20Δ base out response, and pass/fail stereopsis from the first plate of the Frisby or TNO. Data were collected consistently across eight Health Boards (≈85% of the population) for the academic years 2013–14, 2014–15, 2015–16, 2020–21, and 2021–22. Results: Annual prevalence for BVAnom increased from 3.02% to 4.89% across the study period ($r^2 = 0.930$, $p = 0.008$). Exotropia, including intermittent types, showed a significant upward trend ($r^2 = 0.983$, $p = 0.001$), manifest strabismus rose to ≈2% in 2020–2022 ($r^2 = 0.887$, $p = 0.017$). Ocular motility anomalies remained stable ($r^2 = 0.364$, $p = 0.28$). Had screening relied solely on presenting vision, an estimated 342–512 BVAnom cases per year would have been missed, increasing over time ($r^2 = 0.934$, $p = 0.007$). Conclusions: The prevalence of binocular vision anomalies is rising among Scottish children 3.5–5.5y. Many conditions would not be detected through presenting vision assessment alone."

Abstract ID-130245

Visual And Safety Outcomes Of Refractive Lens Exchange With Multifocal Intraocular Lens for the Treatment of Refractive Accommodative Esotropia

Orwa Nasser, Wahbi Wahbi
Private clinic and surgery center, Israel

To demonstrate the effectiveness of refractive lens exchange (RLE) with multifocal intraocular lens (MFIOL) to correct fully accommodative esotropia in patients who desire to be spectacles independent and who are not suitable for other refractive procedures (PRK, LASIK, ICL, etc.). This is a retrospective case series study. 3 patients were included and who have diagnosis of fully accommodative exotropia and wish to be spectacle free. These patients were not suitable for common refractive surgery for different reasons. 6 eyes underwent RLE with MFIOL. Data were collected preoperatively at 1-, 2-, 3- and 9-month follow-up visits after each treatment. The mean age of the patients at time of RLE was 22.1. Mean spherical equivalent decreased from $+3.8 \pm 1.211$ diopters (D) (hyperopia) before surgery to $+0.35 \pm 0.52$ D after surgery ($P < 0.001$). The mean angle of deviation without correction was 22.0 prism diopters (Δ) before surgery and 3.25 Δ after surgery ($P < 0.001$). There were no significant differences observed between the preoperative and postoperative mean best-corrected visual acuity ($p = 0.32$). There were no complications. Refractive surgery may be performed successfully and safely in patients with accommodative esotropia who are not suitable for other refractive procedures. More studies are needed to increase the patient experience and extend the follow-up period in order to evaluate the stability of these results over time.

Abstract ID-130600

Same stigma, new shapes: how strabismus stereotyping has evolved in children's animation

Sebastian Yim, Sophie Mounouchos
Sandwell and West Birmingham NHS Trust, Birmingham, UK

Strabismus negatively impacts children's psychosocial development, contributing to social isolation and reduced self-esteem. Liu et al. (2024) demonstrated that characters with strabismus in 125 animated films were significantly more likely to be portrayed as unintelligent, villainous, and peripheral. Whether this pattern has evolved, amid growing disability representation discourse, is unknown. We extended this dataset to 138 films (2023 to 2025 additions: $n = 13$) from the four major animation studios. Characters with strabismus were independently coded by two raters using a validated trait checklist, alongside coded thematic analysis guided by pre-established stigma frameworks. Inter-rater reliability was assessed using Cohen's kappa. 46 characters with strabismus were identified across 138 films, with moderate-to-substantial inter-rater agreement ($\kappa = 0.44$ – 0.79 , $p < 0.001$). Stratified analysis across the three pre-defined eras

demonstrated no significant change in these negative portrayal patterns (Fisher's exact $p > 0.05$). Despite this, thematic analysis identified consistent directional trends: a progressive decline in visual stereotyping (80% to 59%), with the emergence of subtler patterns, including associations with moral corruption (0% to 27%), and a rise in reducing characters to background roles (40% to 68%), with small effect sizes (Cramér's $V = 0.14, 0.20, 0.19$ respectively). These findings suggest that, despite three decades of evolving cultural attitudes, strabismus portrayal in children's animation show no significant changes in its stereotyping, with stigmatising tropes persisting and in evolving forms. These findings carry clinical significance: children with strabismus are repeatedly exposed to negative representations of their condition. Paediatric ophthalmologists should advocate for authentic strabismus representation to mitigate stigma experienced by affected children.

Oral rapid-fire presentations

Friday 2nd October 2026

Rapid-fire presentation session 13.40 pm

Abstract ID-130149

Creation of a National Strabismus Online Audit Tool for BIPOSA Members

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UK

To develop a national, standardised database for strabismus surgery in the UK to enable benchmarking, research, and quality improvement. A secure, browser-based platform was designed to collect anonymised data from multiple centres. A standardised dataset was defined, including patient demographics, prior surgical history, preoperative measurements, surgical indication and technique, postoperative alignment, and complications. The system was modelled on established national ophthalmology registries to support continuous outcome monitoring. The project has established the first UK-wide database for strabismus surgery. It enables aggregation of data across centres, providing benchmarking of surgical outcomes and early insights into variations in clinical practice. This platform offers significant potential to support high-quality research and inform clinical guideline development. By identifying factors associated with surgical success and complications, it can drive improvements in patient care and reduce unwarranted variation between units. The development of a national strabismus audit tool represents an important step towards data-driven practice. Over time, it is expected to improve surgical outcomes, provide a summary for appraisal and comparison across peers and strengthen the evidence base for strabismus management in the UK.

Abstract ID-130032

Three Patients with Cocaine Induced Pseudo Granulomatosis with Polyangiitis Presenting with Manifest Strabismus

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Three cases of cocaine-induced c-ANCA vasculitis manifesting with strabismus. All had a history of cocaine use, which has been described as causing a Granulomatosis with Polyangiitis (GPA)-mimic syndrome. Case 1: 54-year-old male with large angle right esotropia and hypotropia following 10-years of cocaine use. Investigation yielded a negative c-ANCA but infiltrative inflammation of the medial and inferior recti on MRI with nasal destruction. Biopsy was suggestive of GPA. Case 2: 36-year-old female with previous cocaine use presented with right optic neuritis, large angle esotropia and limited right eye abduction. Investigations showed a raised anti-PR3. MRI showed enhancement of the lateral wall of the right cavernous sinus extending to the orbital apex involving the optic nerve. Case 3: 38-year-old male with a 10-year history of cocaine use presented with a large angle exotropia and hypertropia. Investigations showed a raised anti-PR3 and an intraorbital and midline destructive lesion on CT. Biopsy suggested GPA

Case 1: Immunosuppression (rituximab and prednisolone)

Case 2: Immunosuppression (cyclophosphamide and methylprednisolone, then rituximab and prednisolone)

Case 3: Under rheumatology review (notes not available as prisoner at time of review)

Nasal cocaine exposure can cause inflammation with fibrinoid necrosis and vasculitis. To our knowledge, strabismus has not been previously reported as the primary presenting symptom of cocaine related c-ANCA vasculitis but should be considered when seen in association with midline destructive lesions. In a GPA-like disorder with nasal destruction prior/current cocaine use should be considered. Management is multidisciplinary requiring drug dependency support,

orbital specialists, rheumatologists and ENT. The prognosis is poor even with immunosuppression and complex surgical intervention

Abstract ID-130235

Incidence and Management of Strabismus Following Ocular Brachytherapy: A 10-Year Retrospective Review

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This study evaluated the incidence, characteristics, and management outcomes of strabismus following brachytherapy for intraocular tumours. We conducted a retrospective review of all patients undergoing ocular brachytherapy at Moorfields Eye Hospital between 1 January 2016 and 26 November 2025, who developed persistent diplopia requiring strabismus clinic review. Of 1172 patients treated, fifty (4.3%) were referred. Mean age was 62.2 years. Tumour types included forty choroidal melanomas, six ciliary body melanomas, and four benign lesions. Six patients had pre-existing strabismus. Among the remaining 44 patients, 35 developed early postoperative diplopia, while three developed late diplopia due to VI nerve palsies. Muscle disinsertion occurred in twenty-nine cases (58%), most commonly involving the inferior oblique or lateral rectus. Restrictive motility patterns were most prevalent. Management varied: prisms and occlusion were frequently utilised, while eight patients underwent surgery. Surgical outcomes were favourable in 5/8 cases, though three patients required multiple procedures. All operated eyes demonstrated significant scarring post-brachytherapy, and in two cases this necessitated operating on the other eye. Botulinum toxin injections (n=5) resulted in symptomatic improvement in all cases treated. This is the largest study of strabismus following brachytherapy to date and suggests it is more common than previously reported. Diplopia generally developed soon after treatment, and early referral for non-resolving symptoms is recommended. Conservative measures are often effective, and botulinum toxin should be considered where appropriate. Surgical intervention has the potential to resolve debilitating diplopia, however is technically challenging and benefits from a flexible approach with thorough pre-operative planning and patient counselling.

Abstract ID-130159

An Orthoptic Audit of Cerebral Visual Impairment Identification in a Special Educational Needs School Using Royal College Practice Points

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Cerebral Visual Impairment (CVI) is the leading cause of childhood visual impairment in the developed world, yet diagnostic consistency within Special Educational Needs and Disability (SEND) settings remains a significant challenge. This audit evaluated CVI identification in a cohort of 237 children (aged 4–14 years) using the Royal College of Ophthalmologists three concise practice points: neurological risk factors, reported symptoms, and clinical observations. Cases with identified risk factors (Point 1) lacking previously reported symptoms were filtered into a pathway involving structured Orthoptic telephone consultations and the Dutton CVI inventory to capture reported symptoms (Point 2). To address a lack of standardized clinical data, the assessment for Point 3 evolved during the audit to include a specialized battery, including the LEA Mailbox Game. For children where two or more practice points were identified, a hospital pathway was initiated for differential diagnosis, including an Excel-based tool to decipher the Dutton inventory and highlight functional struggles and bespoke strategies. Results showed that while 69 children had risk factors (Point 1), only 9 had documented symptoms (Point 2); 60 patients lacked prior symptom-based screening. Specialized testing identified CVI signs in 11 children (Point 3), though 15 results were inconclusive and 43 lacked sufficient clinical test data. The evolved testing and proactive consultations captured functional visual struggles previously missing from records. This structured approach facilitates the complex differential diagnosis required for children with complex needs. In conclusion, this framework provides a replicable model for consistent CVI identification, translating clinical observations into robust, individualized support.

Neuro-ophthalmic and orthoptic assessment findings using virtual reality technology in 585 children and young people in the Wandsworth Children's Eye Study

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Here we describe feasibility and findings of virtual-reality-technology (VRT) based neuro-ophthalmic assessments in children and young people (CYP) age 8 to 18 years in school settings. The study was approved by the UCL Research Ethics Committee; parents/CYP at 6 schools in Wandsworth, London, gave informed consent. VRT neos™ was provided by machineMD, Switzerland. Feasibility was recorded as tests completed out of tests attempted. Acceptability data were collected on a 5-item Likert Smiley Face scale to the question "How easy was this test for you?" Device-acquired measurements for eye alignment were summarised as frequencies, pupil size measurements and RAPD score as mean/standard deviation (SD). Assessments completed in 584/793 (74%). 85% rated the test as "very easy/easy", and 5% as "hard/very hard".

Horizontal tropia of 10PD or more was detected in 8 of 563 (1.4%), and 5 to less than 10PD in 30 (5.3%). Horizontal phoria+tropia of 10PD or more was detected in 20 (3.5%), and 5 to less than 10PD in 33 (5.8%). Mean (SD) pupil size in bright illumination was 3.3 (0.4)mm, and in the dark, 6.4 (0.8) mm. Anisocoria >1mm in bright in 0.7%, in dark in 2.6%. Mean (SD) RAPD score was -1.53 (3.67). VRT-based orthoptic and neuro-ophthalmic assessments are feasible and acceptable in CYP. Stable internet and cloud connection are required. The prevalence of horizontal strabismus was similar to that in the Bradford birth cohort study (2.4% constant or intermittent strabismus, 98% horizontal). Anisocoria measurements allow precise documentation in standardised bright and dark illumination.

Visual Snow Syndrome in Children: A Single-Centre Retrospective Cohort Study of Demographics, Comorbidities and Management

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Visual snow syndrome (VSS) is characterised by visual disturbances resembling "TV static", often accompanied by symptoms including afterimages (palinopsia), photophobia, nyctalopia, and floaters. VSS is under-recognised in children; we describe the largest paediatric cohort to date. Single-centre retrospective cohort study at Moorfields Eye Hospital, including patients 0-16 presenting with VSS. Data collected included demographics, symptom characteristics, ocular findings, medical, neurological, psychiatric and neurodevelopmental comorbidities, investigations, management, and outcomes. 67 patients (60% female; age range 4-16; median presentation at 15 years; median symptom onset at 11 years) were included. Annual referral rate increased from a mean of 1.6/year (2009–2020), to 9.6/year (2021–2024), to 19/year in 2025. Visual acuity was normal in all but one patient who had an independent concurrent diagnosis of functional visual loss. Comorbidity burden was high: 34% had a neurodevelopmental or psychiatric comorbidity: anxiety (11%), ASD (9%), and ADHD (5%). 64% had migraine or non-migrainous headache and 20% had tinnitus. Investigations were variable: 60% had electrophysiology and 45% had brain MRI. For management, 58% received reassurance, 21% optical aids, 21% psychological interventions, and 16% educational support. One patient received oral lamotrigine. 82% reported unchanged symptoms at most recent review, 12% improved, 6% worsened. Paediatric VSS referrals have increased markedly in recent years. The high prevalence of neurodevelopmental and psychiatric comorbidities has important implications for multidisciplinary management. This is the largest described paediatric VSS cohort to date. Effective management pathways are currently not established and further research into this area is needed.

POSTER 1

Omalizumab in Paediatric Steroid Responders with Refractory Vernal Keratoconjunctivitis: A Case Series

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We present three paediatric cases of vernal keratoconjunctivitis (VKC) with persistent shield ulcers or epithelial defects (EDs) despite maximal topical therapy, including corticosteroids, ciclosporin or tacrolimus, antihistamines, mast cell stabilisers and lubricants. All were steroid responders and at risk of corneal scarring and secondary glaucoma. Subcutaneous omalizumab was introduced as a steroid-sparing agent in these refractory cases. All patients were male, aged 6-13 years, with atopic comorbidities. Their VKC disease activity was monitored using Shoji's 5-5-5 exacerbation grading scale. They all required intraocular pressure-lowering therapy; one required oral acetazolamide for pressures reaching 39 mmHg. To illustrate treatment complexity, a 6-year-old with a persistent shield ulcer required corneal debridement, amniotic membrane graft and sub tarsal steroids, alongside bandage contact lenses and allogenic serum drops, with limited response. Following omalizumab therapy, the ulcer resolved with visual acuity improving from 0.6 to 0.025 logMAR. He initially remained stable without corticosteroid or serum drops; however, a new ED developed two months after cessation. All patients received omalizumab (150–300 mg fortnightly) for three months. Disease activity scores decreased from 201–310 pre-treatment to 1–20 post-treatment and there was resolution of all EDs. Topical corticosteroids were stopped in two cases and reduced in one, with reduced reliance on intraocular pressure-lowering therapy in all cases. Disease activity recurred within 2 months of treatment cessation in all cases. Omalizumab has been highly effective in the treatment of 3 cases of sight-threatening VKC. Relapses following treatment cessation suggest longer treatment courses may be required for sustained clinical benefit

POSTER 2

Can Anterior Segment Optical Coherence Tomography (AS-OCT) Detect Inflammation Within the Anterior Chamber?

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Detection of anterior-uveitis standardly relies on slit-lamp biomicroscopy with subjective grading using international Standardised Uveitis Nomenclature (SUN), which is prone to inter-observer variability. AS-OCT offers a potential objective alternative by detecting and quantifying hyper-reflective particles within the anterior chamber, as digital biomarkers of inflammation. This systematic review, using meta-analytic approach, evaluated AS-OCT in detecting and quantifying inflammation. A PROSPERO-registered protocol guided comprehensive literature search. Of 466 identified studies, 21 met eligibility criteria (AS-OCT, hyper-reflective particles, anterior-chamber). Included studies encompassed diverse age-groups and clinical conditions. Twenty nine percent incorporated healthy controls, but none examined healthy adults exclusively. Marked heterogeneity was observed across inclusion criteria, imaging protocols, scan acquisition and quantification methods. Automated particle counting was reported in 47.62%, commonly using image-processing software, while others used manual or combined approaches. Definitions of hyper-reflective particles were inconsistent, with eight studies lacking defined pixel-size threshold and others ranging from qualitative descriptors to ≥ 50 pixels. Although studies consistently reported positive correlations between AS-OCT findings and SUN grading, pooled data revealed substantial overlap in particle counts across all SUN grades, limiting direct clinical translation. AS-OCT demonstrates strong potential as an objective tool for detecting anterior chamber inflammation but is currently constrained by methodological inconsistency. Significant heterogeneity in imaging protocols, particle definitions, and quantification methods restricts comparability and clinical translation. Establishing minimum technical standards is essential to improve reproducibility and applicability. Future research should include healthy adult normative data, longitudinal assessment, and development of automated AI-supported analysis. Standardisation will be key to enabling reliable clinical adoption.

POSTER 3

Ethnic differences in Vitamin D insufficiency in Paediatric Non-Infectious Uveitis Patients

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Vitamin D insufficiency (≤ 50 nmol/L) has been associated with an increased risk of non-infectious uveitis (NIU), particularly in children with juvenile idiopathic arthritis (JIA). Despite this, there is currently no national consensus guiding vitamin D management in NIU. This audit evaluated the rate of vitamin D testing and subsequent management in paediatric uveitis clinics in a tertiary centre. Electronic records and lab results for patients attending paediatric uveitis clinics between October 2025 and April 2026 were reviewed. Data collected included vitamin D test dates, results, ethnicity, treatment, follow-up testing and disease course. A total of 301 patients (61% female; age 2–18 years) were included, of whom 67% had JIA. Only 15% (n=46) underwent vitamin D testing. Among those tested, 50% were vitamin D insufficient. Of these, 20% had documented supplementation and only 7% underwent repeat test. Vitamin D insufficiency was more prevalent among Black (100%) and South Asian (71%) patients compared to white Caucasian patients (41%). There was no statistically significant increase in the number of flares in the low-Vitamin D group compared with the normal group (P value 1.0). This audit demonstrates high rates of Vitamin D insufficiency in our patient population, particularly in patients from non-white ethnic groups. Increasing awareness of NHS advice on vitamin D supplementation among patients and their families, as well as increased vitamin D testing, may be beneficial to patients with NIU.

Posters: Genetic, syndromic & rare disease

POSTER 4

Spectrum of ocular manifestations and visual morbidity in down syndrome in paediatric age group

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To evaluate the spectrum of ophthalmological manifestations and visual outcomes in children with Down syndrome, and to highlight challenges in management and assessment. A retrospective review was conducted of 41 children with Down syndrome aged 0–18 years over a one-year period in 2025. Demographic data, ocular diagnoses, visual acuity, and treatment outcomes were analysed. The mean age was 4.09 years, with 23 females (56%) and 18 males (44%). The most common ocular findings were hypermetropia (34%), amblyopia (15%), accommodative esotropia (12%), and myopia (12%). Other conditions included delayed visual maturation (9%), cataracts (9%), nasolacrimal duct obstruction (4%), and nystagmus (4%). Less frequent pathologies (2% each) included blepharophimosis ptosis epicanthus inversus syndrome, microcornea, optic nerve hypoplasia, Brown syndrome, and retinal dystrophy. Visual acuity in the better eye ranged from 0.0 to 1.2 logMAR (mean 0.6). Formal assessment was challenging in 56% of patients due to poor cooperation, young age, or limited understanding. Thirteen patients underwent amblyopia treatment with patching, with minimal improvement observed. Intolerance to glasses, with or without patching, was noted in 40% of cases. One patient was certified as severely sight impaired and four as partially sighted. Children with Down syndrome demonstrate a wide range of ocular abnormalities and face significant barriers to assessment and treatment compliance. Early diagnosis, regular monitoring, and a coordinated multidisciplinary approach are essential to optimise visual outcomes and reduce the risk of long-term visual impairment.

POSTER 5

Association of diplopia with surgical procedure following plaque insertion

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Uveal melanoma is a rare intraocular malignancy affecting >6 million in the UK (Virgili et al., 2007). By far the most common intervention is plaque brachytherapy; in Europe ruthenium-106 being the isotope of choice. During ruthenium plaque insertion (RPI), extraocular muscles (EOMs) are routinely disinserted, and reinserted at the time of plaque removal. We reviewed a cohort of patients to determine the incidence and severity of post-operative diplopia following ruthenium plaque brachytherapy and assess the risk factors involved. We also had a cohort of patients who underwent proton beam

radiotherapy (PBR) as a treatment option which allowed us to compare to a control group who had no muscle disinsertion but were exposed to radiation. We have been able to highlight relevant risk factors of diplopia to identify where further counselling may be required for those patients undergoing RPI. This includes patients who have a choroidal melanoma requiring the detachment of 2 muscles for insertion of the ruthenium plaque, namely if the superior rectus is to be detached. Patients may also have a strabismus with suppression following RPI or PBR likely due to vision loss which may require intervention for non-functional purposes but to improve quality of life from a psycho-social aspect.

POSTER 6

Phenotypic variability in ADAMTSL4-associated ectopia lentis: a multi-generational family case series

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ADAMTSL4-associated ectopia lentis demonstrates a wide spectrum of phenotypic variability within affected families. We present a retrospective case series of a multi-generational family attending an ophthalmology service, reviewing clinical findings, refractive data, complications, and genetic results. Four siblings homozygous for ADAMTSL4 mutation demonstrated marked phenotypic variability. The eldest had bilateral lens subluxation with amblyopia, successfully treated with spectacles and patching. The second child had high myopia with astigmatism without clinically evident subluxation. The third showed mild unilateral phacodonesis with stable refractive error. The youngest exhibited the most severe phenotype, with bilateral subluxation (left worse than right), progressive lenticular opacities, reduced vision, and evolving exotropia, and has been referred to a tertiary centre for surgical management. Their mother, also homozygous, had unilateral ectopia lentis requiring extracapsular cataract extraction with anterior chamber intraocular lens implantation and prophylactic laser to the fellow eye for peripheral degeneration. Her sister, also homozygous, has bilateral subluxated lenses with a recent haemorrhagic posterior vitreous detachment and remains under vitreoretinal follow-up. Among her four heterozygous children, two have high myopia with astigmatism without lens subluxation and are awaiting further genetic assessment, while the remaining two have mild myopic refractive error. The grandmother (untested) was incidentally found to have mild lens subluxation during cataract assessment. ADAMTSL4-associated disease demonstrates marked intrafamilial variability, ranging from isolated refractive error to progressive lens pathology and retinal pathologies with surgical implications. Early diagnosis, family screening, and longitudinal follow-up are essential.

POSTER 7

Ophthalmological Surveillance for Tuberous Sclerosis Syndrome

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Tuberous Sclerosis Complex (TSC) is an autosomal dominant neurocutaneous syndrome. It affects many body systems, with growth of benign hamartomas in multiple organs including the retina. Current international guidance is for annual ocular follow up. To inform future TSC ophthalmic surveillance pathways at a tertiary paediatric referral hospital by reviewing data on the ophthalmic findings and visual acuity (VA) outcomes in children with TSC. Retrospective service evaluation of all children with a TSC diagnosis seen at Alder Hey Children's NHS Foundation Trust eye clinic from 2010 onwards. Data included genotype, hamartoma presence and location, VA (converted to logMAR), epilepsy status and treatment, and number of attendances. VA was categorised as pre visual maturity completion (<7 years) or post visual maturity completion (≥7 years). Twenty seven patients were included. 7 (26%) had TSC1 genetically confirmed and 18 (67%) had TSC2. Epilepsy was present in 19 (70%) of the cohort. Retinal hamartomas were documented in 12 (44%), 3 were potentially sight threatening. VA data were available for 22 patients. Mean VA was better in TSC1 (0.16 logMAR) than TSC2 (0.51 logMAR). Patients without epilepsy had better VA (0.23 logMAR) than those with epilepsy (0.44 logMAR). No patients in this cohort had a documented loss of VA from hamartoma presence. In this cohort hamartomas were common but rarely sight threatening. VA outcomes appeared more favourable in TSC1 and nonepileptic patients. The findings support development of a risk stratified surveillance pathway considering genotype and epilepsy status for long term surveillance.

POSTER 8

Macular OCT Findings and Correlation to Clinical Measures in Patients with Congenital Nystagmus Syndrome

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To describe the macular optical coherence tomography (OCT) findings and explore the correlations between OCT findings to visual acuity and other clinical measures in patients with congenital nystagmus syndrome compared to healthy subjects. In this comparative cross-sectional observational study, a spectral-domain optical coherence tomography was conducted on eyes of congenital nystagmus syndrome patients and compared with those of healthy individuals (control group). Average thickness of central 6mm (C6T), average thickness of central 1mm (C1T) and thinnest central thickness (CRT), BCVA were obtained and compared between the groups. Prevalence and grading of foveal hypoplasia and albinism were assessed in the patients group. Correlations between the different variables were examined. 212 eyes of 126 congenital nystagmus syndrome patients and 212 eyes of 106 healthy individuals were included in the study. 80% of the eyes in nystagmus group had foveal hypoplasia. The mean grade of foveal hypoplasia is 3.45 ± 0.9323 in the above group. CRT was $258.2 \pm 48.31 \mu\text{m}$ in the nystagmus group compared to $189.3 \pm 24.25 \mu\text{m}$ in the control group with a mean difference of $68.85 \pm 7.97 \mu\text{m}$ ($P < 0.001$). Pearson correlation demonstrated a moderate-to-strong negative association between VA and foveal hypoplasia grade ($r = -0.784$, $p < 0.001$). The results of this study show that the majority of congenital nystagmus syndrome patients have foveal hypoplasia. The higher macular fovea grade the lower is the visual acuity.

POSTER 9

Outcomes Of Photorefractive Keratectomy Refractive Treatments In Patients With Infantile Nystagmus Syndrome

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To evaluate visual and refractive outcomes after Photorefractive keratectomy (PRK) in patients with infantile nystagmus syndrome. Retrospective pre–post analysis of patients with nystagmus undergoing PRK. Visual acuity (UCVA, BCVA; logMAR) and refractive error (sphere, cylinder, spherical equivalent [SE]) were assessed preoperatively and postoperatively. Because both eyes were available for most patients, the primary sensitivity analysis used patient-level averages (OD/OS) to avoid within-subject correlation. Paired t-tests with 95% confidence intervals were used to evaluate changes; additional nonparametric tests were used as supportive analyses. Fifteen patients (30 eyes) were included. Mean UCVA improved from 1.03 ± 0.26 logMAR preoperatively to 0.34 ± 0.14 logMAR postoperatively (mean change -0.69 logMAR; 95% CI -0.89 to -0.48 ; $p = 0.0007$). Mean BCVA improved from 0.44 ± 0.10 to 0.29 ± 0.14 logMAR (mean change -0.16 logMAR; 95% CI -0.22 to -0.10 ; $p = 0.00010$). Mean SE improved from -3.32 ± 4.41 D to -0.38 ± 0.79 D (mean change $+2.95$ D; 95% CI $+0.13$ to $+5.77$; $p = 0.0418$). Postoperatively, 57.1% of patients achieved mean SE within ± 0.50 D and 78.6% within ± 1.00 D; 100% achieved mean UCVA ≤ 0.5 logMAR. Mean binocular UCVA and BCVA improved from 1.03 ± 0.22 and 0.447 ± 0.092 logMAR preoperatively to 0.28 ± 0.17 and to 0.24 ± 0.135 logMAR postoperatively, respectively ($p = 0.0007$). PRK in patients with nystagmus was associated with significant improvements in both uncorrected and best-corrected visual acuity and a clinically meaningful reduction in refractive error, with the majority achieving postoperative SE within ± 1.00 D.

POSTER 10

Triple M Syndrome

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Triple M syndrome is a rare and severe complication of Immunotherapy treatment characterised by Myasthenia Gravis, Myositis and Myocarditis. This is a series of three patients presenting to the Orthoptic department, St Paul's Eye Unit with different patterns of eye movement disorders. All three patients were receiving Immunotherapy (immune checkpoint inhibitor therapy) for metastatic cancer. All patients were female and aged between 78-85 years. Each patient reported had symptomatic diplopia. Two patients had a presentation of an unusual eye movement restriction. The use Immunotherapy as a treatment for cancer is increasing. Orthoptists are an integral part of the MDT when caring for these patients. Should triple M syndrome be considered in the differential diagnosis for patients receiving Immunotherapy presenting to the eye unit with diplopia?

POSTER 11

Prisms in the Management of Nystagmus

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The value of using yoked or base-out prisms in the long-term management of nystagmus is well established but how regularly prism trials are performed and how they are trialled in practice is unclear. Evaluating the practice in our centre and the literature could therefore provide valuable insights on how to improve this practice in the short-term and inform future research directions. All cases in which prism treatment was attempted at Southampton Eye Unit between January 2018 and January 2025 were identified and summarised. All prism assessments were carried out in free-space and included 7 successful cases (long term therapeutic prism use), and 12 further unsuccessful cases. Of the successful cases, 5 used yoked prisms and 2 used base-out prisms and broadly matched the descriptions in the limited literature identified. Assessing the effectiveness of prisms was based largely upon subjective patient responses and influenced significantly by the tolerability of stick-on prisms, particularly for those with poor binocular functions. This series demonstrates that certain patients can benefit from long term prism management for nystagmus, offering another tool for a notoriously challenging condition to manage. Eye movement recordings are successfully used in research and specialist centres to predict prism strength needed to optimise vision but are not widely available. Therefore, there is a pressing need for research to guide the optimum strength of prisms required in different presentations of nystagmus and the development of prism-trial guidelines which can be used universally in clinical practice.

POSTER 12

Artificial Intelligence for Detecting Papilloedema in Children: Diagnostic Potential and Future Clinical Implementation

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Accurate evaluation of the optic nerve (ON) is essential when assessing patients for papilloedema, yet distinguishing true papilloedema from pseudopapilloedema remains a significant clinical challenge, particularly in children. Variability in ON anatomy, limited availability of paediatric normative data and the practical difficulties of examining children all contribute to diagnostic complexity. As a result, uncertainty may lead to delayed treatment or unnecessary, and sometimes invasive, investigations. Artificial intelligence (AI), particularly in the context of fundus imaging, has recently emerged as a promising tool to support clinicians in recognising ON pathology and enhancing clinical decision-making. This narrative review examines current evidence for AI systems designed to detect papilloedema and differentiate it from pseudopapilloedema and normal optic discs, with a focus on potential applications in paediatric practice. A structured literature search was conducted using PubMed, MEDLINE and the Cochrane Library, incorporating terms related to AI, ON swelling and paediatric populations. Due to the limited availability of paediatric-specific studies, adult and mixed-age research was also included to provide insight into broader developments in algorithm performance and clinical applicability. Eleven studies met the inclusion criteria, most of which were retrospective diagnostic accuracy studies evaluating AI analysis of fundus photographs. Current evidence indicates that several AI models demonstrate promising accuracy in detecting papilloedema, in some cases approaching specialist-level performance. These technologies may facilitate earlier recognition, support non-specialist clinicians and improve referral pathways, particularly in settings lacking paediatric neuro-ophthalmology expertise. However, challenges remain, including limited paediatric validation, constrained datasets and issues surrounding algorithm transparency and clinical integration.

POSTER 13

Orthoptic-Led Paediatric Optic Disc Surveillance: A Service Audit

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Examination of the optic nerve is a key component of ocular assessment and plays an important role in identifying potentially sight- or life-threatening pathology. Differentiating papilloedema from pseudopapilloedema is often challenging,

particularly in children where anatomical variation, limited normative datasets and reduced cooperation may hinder assessment. Following increased referrals for suspicious optic discs, particularly after the widely publicised legal case involving Honey Rose, many services experienced growing demand for urgent consultant review. In response, an orthoptic-led optic disc surveillance clinic was established to triage paediatric referrals and identify those requiring specialist ophthalmology input. A retrospective service audit was conducted for children referred with suspected optic disc swelling between March 2019 and June 2023. Patients underwent structured assessment including case history, visual function testing, fundus examination, optical coherence tomography, widefield imaging with autofluorescence and B-scan ultrasonography. Findings were initially reviewed virtually by a consultant ophthalmologist while orthoptists developed increasing confidence and autonomy within the pathway. During the study period, 523 referrals were received, including 446 face-to-face assessments, while 77 patients did not attend. Of those assessed, 299 were discharged and 92 were monitored until stability was confirmed. Forty-six patients were referred for routine review and were diagnosed with pseudopapilloedema or normal variants. Nine required urgent review, with significant pathology identified in two cases, including idiopathic intracranial hypertension and an intracranial tumour requiring surgery. This orthoptic-led model enabled safe triage, reduced unnecessary consultant appointments and supported efficient use of specialist services while promoting professional development.

POSTER 14

Headaches in Craniosynostosis: A Reliable Symptom of Raised Intracranial Pressure?

Manraj Singh Chohan, Ankur Raj
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Presence of headache often prompts referral to ophthalmology to assess for possible raised intracranial pressure (ICP) in children with craniosynostosis. There is a paucity of data on outcomes in patients presenting with headaches. The aim of this audit is to determine the reliability of headache as a presenting feature in raised ICP. A retrospective review of case notes of children referred from the craniofacial service (between 2020 and 2024). Only children aged 5 or above were included. Diagnosis, presence or absence of headaches, previous craniofacial surgery, optic disc findings and craniofacial outcomes were recorded. Patients with incomplete data were excluded. 71 patients met inclusion criteria; 37 (52%) complained of headaches. In those with headaches, 5 (14%) were found to have raised ICP. Of those without headaches, 2 (6%) had raised ICP. Papilloedema was noted in 3 patients. All but one of those had sagittal synostosis. Those with raised ICP had had previous craniofacial surgery. Abnormal skull morphology was associated with raised ICP in 42%, compared to 25% without. MRI was positive for those with raised ICP, but not for those without. Headaches on their own are not sensitive for raised ICP. MRI appears to be more sensitive and a diagnosis of sagittal synostosis appears to be a risk factor. Optic disc swelling is not sensitive. Abnormal skull morphology is more likely to be associated with raised ICP. A multifactorial approach needs to be used in assessing for raised ICP comprising of symptoms, optic disc assessment, skull morphology and imaging

POSTER 15

Strabismus is common across MRI phenotypes in cerebral visual impairment, whereas nystagmus may distinguish a more neurologically complex subgroup

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Ocular motor abnormalities are frequently reported in cerebral visual impairment (CVI), but it is unclear whether specific signs help distinguish site/aetiology of pathology. We retrospectively reviewed 181 patients with CVI-related records. Ocular motor findings were extracted from structured and free-text fields, including strabismus, nystagmus, and gaze or extraocular movement (EOM) abnormalities. MRI summaries were reviewed descriptively and grouped into major radiological patterns, including white matter/hypoxic injury, ventricular or hydrocephalic change, occipital, cerebellar, thalamic, and vascular/haemorrhagic abnormalities. Strabismus was frequent across all major MRI phenotypes: 67.4% of patients with white matter/hypoxic patterns, 73.3% with ventricular/hydrocephalic change, 78.6% with occipital abnormalities, 58.8% with cerebellar abnormalities, 76.9% with thalamic abnormalities, and 92.3% with vascular/haemorrhagic lesions. In contrast, nystagmus showed greater variation between MRI groups: 32.6% in white matter/hypoxic patterns, 40.0% in ventricular/hydrocephalic change, 42.9% in occipital abnormalities, 41.2% in cerebellar abnormalities, 38.5% in thalamic abnormalities, and 76.9% in vascular/haemorrhagic lesions. Gaze/EOM abnormalities ranged from 34.9% in white matter/hypoxic patterns to 61.5% in vascular/haemorrhagic lesions. These findings suggest that strabismus is a relatively non-specific ocular motor sign across CVI substrates, whereas nystagmus and gaze abnormalities may be more informative for identifying patients with more complex or severe neurological injury. Strabismus was common

across multiple MRI phenotypes and appeared to have limited subgrouping value. Nystagmus was disproportionately represented in patients with more extensive or destructive structural brain abnormalities, particularly vascular/haemorrhagic lesions, suggesting that it may better identify a neurologically complex CVI subgroup. Prospective studies with standardised ocular motor phenotyping are needed.

POSTER 16

A 6-year retrospective Audit of Ophthalmic Manifestations and Ophthalmic Care in Paediatric Neurofibromatosis Type 1 (NF1) patients

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Neurofibromatosis Type 1 (NF1) is a multisystem disorder requiring consistent ophthalmic monitoring to prevent visual impairment from features including optic pathway gliomas (OPGs) and plexiform neurofibromas. This audit evaluates the prevalence of these findings and assesses the operational efficiency of a paediatric cohort monitoring service. A 6-year retrospective audit (March 2020–March 2026) was conducted at Royal Berkshire NHS Foundation Trust. Electronic records of 73 children with confirmed or suspected NF1 were reviewed. Data on clinical manifestations, demographics, follow-up compliance and service transitions were analysed. Of 73 children (40 male, 33 female; age 18 months–18 years), 34 had Lisch nodules. OPGs were identified in five children, plexiform neurofibromas in three, with two having both. Service delivery included 18 discharges to Primary Care and six tertiary referrals. Compliance analysis revealed seven "Did Not Attend" (DNA) cases and four patients lost to follow-up (LTFU), all occurring during the COVID-19 pandemic. Although all were eventually traced, one child suffered permanent visual loss due to a pandemic-related missed review. In total, three children with OPGs or plexiform neurofibromas experienced visual impairment. High Lisch nodule prevalence and significant morbidity from OPGs/plexiform neurofibromas were observed. "Appointment fatigue" led to increased DNA rates in stable patients. COVID-19 exacerbated patient attrition, resulting in avoidable visual loss. Following on from this audit, structural enhancements including a dedicated NF1 Service, fail-safe officer and quarterly Service monitoring have been implemented. Alongside targeted patient education, we aim to improve compliance and provide a robust framework to prevent future visual loss.

POSTER 17

Investigating the link between Cerebral Visual Impairment (CVI) and Autism (ASD) in children

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This study aimed to explore the overlap between cerebral visual impairment (CVI) and autism spectrum disorder (ASD) within a clinical cohort. It was hypothesised that similarities in CVI and ASD related behaviours may contribute to diagnostic challenges when both conditions co occur, particularly where visual difficulties influence behaviour, communication, and social interaction. Sixty eight children with a confirmed diagnosis of CVI were identified (27 female). Thirty two children (14 female) also had a diagnosis of ASD, forming the CVI and ASD group (mean age 9.81 ± 3.52 years), while 36 children without ASD formed the CVI and non ASD group (mean age 9.33 ± 3.37 years). All participants completed a 51 item electronic Higher Visual Function Questionnaire Inventory (HVFQI), rating the frequency of difficulties from never to always on a five point scale. Responses were analysed to compare the severity of difficulties between groups and to explore overlap with autism related behaviours measured using the Autism Diagnostic Observation Schedule (ADOS) and the Diagnostic Interview for Social and Communication Disorders (DISCO). Mean severity scores were higher in the CVI and ASD group than in the CVI and non ASD group (3.51 ± 0.71 versus 3.39 ± 0.66). Five questionnaire items demonstrated a mean severity difference of 0.5 or greater, with consistently higher severity in the CVI and ASD group; however, this difference did not reach statistical significance (Mann–Whitney U test, $p = 0.318$). Despite similar overall severity scores, children with co occurring CVI and ASD showed greater difficulty in specific functional domains, including facial expression recognition, navigation, and object recognition. These findings reinforce reported overlaps between CVI and ASD and highlight the need for multidisciplinary assessment to support accurate identification and appropriate clinical management.

POSTER 18

Prevalence and neuro-ophthalmic findings in children with brain tumours and Acute lymphoblastic leukaemia in a paediatric tertiary centre

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To assess the prevalence of children attending our Ophthalmology clinic with diagnosis of brain tumour or Acute lymphoblastic leukaemia (ALL) between April 2023 and April 2026, and to determine type of tumour and report neuro-ophthalmic findings. Retrospective study, patients identified from MediSIGHT EPR audit suite. 67 patients identified: age range 3-25 yrs; IQR 8-15 yrs, median 12 years. 52% girls, 48% boys. 56 children had a diagnosis of brain tumour. 11 children had ALL. Brain tumour patients grouped as; Gliomas, Glioneuronal, and Neuronal Tumours n=22, Sellar tumours n=13, Medulloblastoma n=12, Ependymal tumours n=3, Meningioma n=1, Embryonal tumour n=3, Germ cell tumour n=2. Neuro-ophthalmic findings included cranial nerve palsies affecting the sixth nerve in 11 patients, third nerve in 2, fourth nerve in 3, seventh nerve in 4 and Parinaud's syndrome in 2 patients. Ocular findings included optic disc pallor/ atrophy in 22, significant visual field defects in 10, iatrogenic cataract in 3 and dry eye in 7 patients. 66% patients had visual acuity in either eye better 0.20 LogMAR. Gliomas, Glioneuronal, and Neuronal Tumours N=22 were the largest group, and included many rare tumours including diffuse intrinsic pontine glioma (DIPG), dysembryoplastic neuroepithelial/glioneuronal (DNET) and Polymorphous low-grade neuroepithelial tumour of the young (PLNTY). Our clinical findings were as expected, cranial nerve palsies, VF defects, optic nerve damage. Patients identified from the audit suite were lower than our expected numbers. We think this is reflective of data not being recorded correctly on EPR. We will compare this to overall Trust data and improve our documentation.

POSTER 19

Phenotypic Variation in Dizygotic Twins with Neurofibromatosis Type 1: Distinct Neuro-Ophthalmic Presentations

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Neurofibromatosis type 1 (NF1) is an autosomal dominant disorder characterised by marked phenotypic variability, particularly in its neuro-ophthalmic manifestations. While intra-familial variation is well recognised, distinct presentations in twins remain rarely described and offer insight into disease expression. We report dizygotic twins with genetically confirmed NF1 inherited from their mother, identified through family screening and followed with ophthalmic surveillance from infancy. Notably, both twins developed neuro-ophthalmic manifestations at a similar age of approximately 2.5–3 years. Twin A developed café-au-lait macules, bilateral iris Lisch nodules, and a new-onset divergent strabismus with progressive visual decline. Neuroimaging demonstrated extensive bilateral optic pathway gliomas involving the optic chiasm and hypothalamus, with associated ventricular involvement. Visual function deteriorated to no perception of light in the right eye, prompting initiation of systemic chemotherapy with vincristine and carboplatin in accordance with national guidelines for symptomatic low-grade glioma. In contrast, Twin B initially demonstrated Lisch nodules with normal optic nerves. She later developed unilateral proptosis and imaging revealed left sphenoid wing dysplasia with temporal lobe herniation into the orbit, without evidence of optic pathway glioma. She has bilateral subnormal visual acuity without an identifiable clinical correlate and is undergoing ongoing electrophysiological assessment, which has not demonstrated significant retinal or optic pathway dysfunction to date. These cases demonstrate striking variation in neuro-ophthalmic presentation despite a shared mutation and similar timing of onset, highlighting the influence of modifier genes, epigenetic factors and stochastic mechanisms. This report underscores the importance of individualised surveillance and multidisciplinary management in NF1.

POSTER 20

Audit of Guidelines on Management of Patients Presenting with Acute Isolated Third Nerve Palsy

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Acute isolated third cranial nerve (CN III) palsy may indicate serious intracranial pathology, particularly a posterior communicating artery (PCA) aneurysm. Traditional literature emphasises pupil involvement and pain as key discriminators to guide if urgent neuroimaging is required; however, recent evidence records prevalence of aneurysms independent of the

above key discriminators, and recommend that urgent neuroimaging be done for all patients. There is no standard protocol in the United Kingdom and clinical practice varies. To evaluate incidence of aneurysms in patients presenting with CNIII palsy and compliance to latest neuroimaging recommendations.

A retrospective audit was conducted of patients presenting with acute isolated CN III palsy over 2 years. Data collected included clinical presentation, documentation of pain and pupil involvement, neuroimaging modality and timing, blood investigations, and final diagnosis. Compliance was assessed against a standard of 100% neuroimaging with CTA or MRA at presentation. 21 patients were included. Plain neuroimaging was performed in 80.95% of cases; however, only 33.33% underwent CT/MR Angiogram at presentation. Aneurysms were identified in 14.29% of patients. Two thirds of aneurysms were detected in the absence of pain or pupil involvement. Compliance with recommended early vascular imaging was poor despite a significant aneurysm detection rate. Consistent with latest literature, lack of pain or pupil involvement is insufficient to rule out a PCA aneurysm. Delayed imaging may increase risk of adverse outcomes. Universal early neuroimaging including CTA or MRA is essential in acute CN III palsy. Standardised pathways should be implemented nationally to ensure timely diagnosis and improve patient safety.

POSTER 21

Validation of the Top-11 Higher Visual Function Question Inventory Screener (Top-11 HVFQI) in Children with Cerebral Visual Impairment

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Higher visual function deficits (HVFDs) in cerebral visual impairment (CVI) are frequently under-recognised without validated screening tools. We evaluated the Top-11 HVFQI, a screener (Chandna et al., 2021) to assess its diagnostic accuracy as a brief tool for identifying children who may require further assessment. Methods: In a retrospective derivation cohort, the Top-11 subset was extracted from historical full HVFQI responses in 144 children (mean age 7.4 ± 2.8 years) with CVI and neurotypical controls (Chandna et al., 2024). A decision threshold was derived by maximising Youden's J statistic, balancing sensitivity and specificity. In a prospective validation study, 85 children with CVI (mean age 9.7 ± 4.3 years) and neurotypical controls completed both the standalone Top-11 screener and full 4–18-year parent HVFQI within 7 days. The pre-specified threshold was then applied unchanged. In the retrospective cohort, sensitivity was 81.8%, specificity 93.7%, positive predictive value 79.4%, negative predictive value 94.5%, and accuracy 91.0%. In the prospective cohort, sensitivity was 82.4%, specificity 100.0%, positive predictive value 100.0%, negative predictive value 25.0%, and accuracy 83.3%. Top-11 scores strongly correlated with the full inventory for HVFD spectrum ($\rho = 0.80$, $p < 0.001$) and severity ($\rho = 0.83$, $p < 0.001$), indicating that the brief screener captured broader full-inventory impairment patterns. This study supports the Top-11 HVFQI as a rapid, low-cost screening tool for HVFDs in CVI. It provides an effective first-line triage approach to identify children who would benefit from comprehensive HVFQI assessment, improving referral efficiency and clinical prioritisation.

POSTER 22

Optic Disc Swelling in Children: Papilloedema vs Pseudopapilloedema in an Orthoptic-Led Neuro-Ophthalmology Clinic

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Distinguishing between papilloedema and pseudopapilloedema is clinically challenging but essential to ensure prompt investigation of intracranial pathology whilst avoiding unnecessary neuroimaging. This study aims to describe the clinical features, investigations and diagnoses of paediatric patients with papilloedema and pseudopapilloedema attending an orthoptic led neuro-ophthalmology clinic. A retrospective review of the clinical database was undertaken. Patients with a documented history of optic disc swelling were identified. Data was collected and analysed. 96 patients with a history of optic disc swelling were identified and split into papilloedema (59) and pseudopapilloedema (37) groups. The most common diagnoses in the papilloedema group were tumour (22) and idiopathic intracranial hypertension (20). Most seen in the pseudopapilloedema group was drusen (9), tilted (9) and hypermetropic crowded discs (7). Average visual acuities were similar in both groups. Headache was more common in papilloedema (78%) versus pseudopapilloedema (42%). No pseudopapilloedema patients had ocular motility defects or nystagmus, but these were found in 31% and 19% of the papilloedema cohort, respectively. 33% of the papilloedema group had abnormal visual fields, versus 16% in the pseudopapilloedema group. OCT scan detected drusen or other physiological disc changes in most pseudopapilloedema cases. Headache and field defects were approximately twice as common in the papilloedema group. Higher prevalence of

ocular motility defects and nystagmus in the papilloedema group, alongside the value of OCT in identifying features consistent with pseudopapilloedema, could suggest that orthoptic assessment combined with ocular imaging plays a key role in differentiating papilloedema from pseudopapilloedema and guiding appropriate investigation and management.

Posters: Refractive error, amblyopia & screening

POSTER 23

Prevalence of Childhood Myopia in Leicester Pre- and Post- Covid

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Myopia incidence is increasing (Holden 2016; Foster 2014). A meta-analysis suggested progression of myopia in children accelerated during the COVID pandemic compared with pre COVID (Laan et al 2024). We investigated if a similar trend existed for children in Leicester. We conducted a retrospective observational study examining the hospital eye service (HES) records of myopic children (0-17 years old) who presented in March 2019-March 2020 and March 2023-March 2024. Severity of myopia in the worse eye (spherical equivalent), age, sex and postcode were identified. Postcodes were matched to ten indices of deprivation, then grouped into five quintiles (Q1 highest). We defined myopia severity according to literature (CHAMPS 2023). 638 children were seen; categorised into pre and post COVID (301;337), males and females (325;313), under 12s and 12-17 (543;95). Cases of mild myopia were greater than severe, both pre and post-COVID. (Pre-COVID, mild myopia severe myopia - 164;53. Post-COVID, mild myopia;severe myopia - 183;75). Mean age of presentation was higher post-COVID than pre-COVID, (Pre-COVID;Post-COVID, 7.33;8.28), with post-COVID 12-17 year old boys presenting at a lower mean age than girls of the same age. (14.21;15.02). Greater numbers of children under 12 living in Q1 and Q2 presented to HES with myopia than children living in Q4 and Q5. (204;227;47;3). Within limitations, we didn't find increased myopia severity pre and post-covid in children. However, sub-group analysis suggests social deprivation, sex and parent awareness may affect access to services.

POSTER 24

Super Eyes 2: Patching and your life – a co-designed educational video

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The 'Addressing Barriers to Amblyopia Therapy' study, conducted in Greater Manchester, evaluated parent perspectives on barriers and enablers to amblyopia therapy. Parents reported that an educational video about amblyopia would be enabling. The final phase of the study involved co-design of a video for families, to assist with practical aspects of amblyopia therapy. We describe the design process and present the finished video. A video storyboard was prepared by the research team, informed by qualitative data from interviews with parents, and video content was produced. The suggested video components were shared with parents, ahead of further interviews to receive their feedback. The final video was informed by the feedback. Four parents completed interviews to inform the educational video. Parents liked the proposed video and felt it would be helpful for families. Suggestions for improvement included:

- More serious information should be available separately, for parents;
- Make timescales in the video clearer;
- Most characters should not have eye conditions;
- Demonstrate that vision would be blurred with a patch on;
- Show patch placement on the child's face in more detail;
- Include more questions/greater interaction between characters;
- Add a different patch chart to the classroom scene;
- Additional scenes, at school, could be included.

All feedback was considered and incorporated where feasible.

POSTER 25

A RaCES Project: Commentary on Systematic Review on Impact of Hypermetropia on Academic Performance and what it means for practice

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Undiagnosed or uncorrected hyperopia has been shown to cause problems with sustained near focusing and visual processing which influence the acquisition of reading skills. A systematic review by Mavi et al aimed to be the first review to collate all the relevant research to determine the impact of uncorrected hyperopia on academic outcomes. A critical appraisal was carried out to determine the strength of its claims and its relevance to clinical practice. The AMSTAR (A MeaSurement Tool to Assess systematic Reviews) 2 tool was used to critically appraise the review. The meta-analysis found that children with uncorrected hyperopia had statistically significantly poorer educational performance compared to emmetropic children, with a standardized mean difference (SMD) of -0.18 (95% confidence interval [CI], -0.27 to -0.09). They also demonstrated worse reading skills compared to both emmetropic (SMD = -0.46, 95% CI -0.90 to -0.03, I² = 67.96) and myopic children (SMD = -0.29, 95% CI, -0.43 to -0.1). However, the review met 7 of the 16 criteria. Evidence provided suggested an association between uncorrected hyperopia and poorer educational performance, but determining the exact strength of this association is challenging due to methodological weaknesses found in both the evidence synthesis methods and the primary studies, as well as the imprecision in the estimates provided. We conclude that this review does not provide strong evidence as to the impact of hyperopia on academic performance. However, we may want to consider assessing hyperopic children's reading speed and ability more than the acuity level, when prescribing spectacles.

Posters: Retina and ROP

POSTER 26

'Thumb print sign' on widefield retinal imaging - an interesting finding in children with foveal hypoplasia

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"The 'thumb print' sign is characterised by concentric curved lines around the fovea and is solely seen on widefield retinal imaging (Optos) in patients with foveal hypoplasia. It does not represent anatomical changes, but artifacts caused by monochromatic lasers used by Optos and the non-uniform scan velocities slowest across the underdeveloped fovea. We describe two children with this sign with very different presentations and final visual acuities. The first patient was a 6-year-old girl presenting with high hypermetropia. Normal anterior chamber depth with very short axial lengths for age on biometry suggested a diagnosis of posterior microphthalmos. Genetic testing confirmed an autosomal recessive PRSS56-related posterior microphthalmos with foveal hypoplasia. Optical coherence tomography (OCT) demonstrated high macular thickness and loss of the foveal pit. She maintains a visual acuity of 0.06 LogMAR in the right eye and 0.12 LogMAR in the left eye with glasses. The second patient was also a 6-year-old girl diagnosed with infantile esotropia and horizontal nystagmus. Her corrected visual acuity was 0.625 LogMAR and 0.7 LogMAR in the right and left eye respectively. OCT showed bilateral foveal hypoplasia with diffuse retinal thinning. Visual evoked potentials were suggestive of misrouting of optic nerve fibers seen in albinism and FHONDA syndrome. Genetic testing results are awaited. To conclude, the 'thumb print' sign seen on Optos is an indicator of foveal hypoplasia, but it is not an indicator of poor visual acuity. This is the first time that this sign has been reported in posterior microphthalmos."

POSTER 27

Exploring lipid metabolism as a modifiable factor in retinopathy of prematurity: evidence from a neonatal cohort

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To investigate whether hypertriglyceridaemia (HTG) during early parenteral nutrition (PN) contributes to the development and severity of retinopathy of prematurity (ROP) in extremely preterm infants, and to identify perinatal factors associated with raised triglyceride levels, including gestation, birth weight, inflammatory exposures, and antenatal steroid use. A retrospective study was conducted at St George's Hospital NICU from 2018 to 2024, including infants born before 28 weeks gestation who received parenteral nutrition and had triglyceride levels measured within the first three postnatal weeks. Of 494 eligible infants, 189 were excluded for missing data or absence of PN. Triglyceride thresholds defined abnormal (ATG > 2.5 mmol/L), severe (STG > 4 mmol/L) and recurrent (BTG > 2 episodes > 2.8 mmol/L) hypertriglyceridaemia. ROP outcomes and survival data were extracted from Badgernet. Mann Whitney was applied to evaluate associations between the categories and both threshold ROP and survival outcomes. Among 305 included infants, ROP incidence increased with higher triglyceride levels: 27.2% in ATG versus 15% below 2.5 mmol/L ($p < 0.00001$, OR 2.1); 24.4% in STG > 4 mmol/L versus 13% below 4 ($p < 0.00001$, OR 2.16); and 30.8% in BTG > 2 episodes versus 13.4% ($p < 0.00001$, OR 2.86). Mortality also rose with ATG (18.2% versus 1.8%, $p = 0.008$, OR 11.8). Elevated triglyceride levels in early parenteral nutrition may reflect immature lipid metabolism and increased inflammatory stress, both implicated in ROP development. This metabolic imbalance could influence retinal angiogenesis through dysregulated growth factor signalling. The association with higher mortality also suggests HTG may act as a marker of overall illness severity. HTG during early parenteral nutrition is associated with higher ROP incidence and mortality.

POSTER 28

Prophylactic cryotherapy and retinal outcomes in Stickler Syndromes; a Scottish tertiary centre case series

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The Stickler syndromes are a hereditary connective tissue disorders with significant risk of retinal detachment. There are several subtypes of collagen mutations with type 1 (COL2A1) being the commonest. Prophylactic cryotherapy has been shown to reduce the risk of giant retinal tear associated retinal detachment in type 1 disease. We present a retrospective review of 15 patients with genetically confirmed Stickler syndrome attending a tertiary Scottish centre. Mean age at diagnosis was 4.4 years (range 4 weeks–14 years); 60% (9/15) were male. High myopia was present in 60% (9/15). COL2A1 mutations were identified in 60% (9/15), COL11A1 mutations in 33% (5/15; four autosomal dominant, one de novo), and COL9A2 in one patient (autosomal recessive). Most patients were White Scottish (9/15). Systemic features included Pierre Robin sequence (4/15) and cleft palate (3/15). One child had congenital glaucoma. Prophylactic cryotherapy (Cambridge protocol) was performed in 80% of patients (12/15), including three in Cambridge and nine in Edinburgh. One child received a modified protocol due to glaucoma surgery, one is awaiting treatment and another has declined. Retinal detachment occurred in four patients (27%), with one case being bilateral. Only one patient developed a detachment following prophylaxis. No complications from prophylactic treatment were observed. One patient presented with a detachment at diagnosis and another developed sympathetic ophthalmia following vitrectomy. High rates of unreported retinal pathology support early ophthalmic screening and prophylactic intervention. Local delivery of treatment may reduce barriers to treatment and preserve sight.

POSTER 29

Coats' disease: outcomes from patients treated at the Royal Hospital for Children, Glasgow

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We present a retrospective case series of six male patients who all received treatment for Coats' disease between 2023 and 2025 at the Royal Hospital for Children with at least 12 month follow-up. The mean age was 7.8 ± 2.7 years. Five patients were asymptomatic, while one was referred following reduced vision identified at pre-school screening. At presentation, disease stage was 2A in two cases, 2B in three cases, and one case showed an atypical focal juxtafoveal form with circinate exudates and telangiectasias limited to the macular area. All patients underwent at least two treatment sessions. Initial management consisted of laser photocoagulation alone ($n=3$) or combined with intravitreal anti-VEGF injection ($n=3$). Time from referral to treatment was 1–4 months in all cases except one, which experienced a 12-month delay due to a lost referral. Mean follow-up was 3.9 ± 2.6 years. Anatomical improvement was observed in all cases except the atypical presentation. In cases with foveal involvement, visual acuity improved from 0.6 ± 0.8 to 0.3 ± 0.4 logMAR. In two extrafoveal cases, vision remained stable in one (0.0 logMAR) and declined slightly in the other (-0.2 to 0.22 logMAR). Early detection, as previously recognised, enables favourable outcomes in paediatric Coats' disease. However, even in cases with extensive

foveal involvement, both anatomical and functional improvement can be achieved. Multiple treatment sessions were required in all cases to ensure disease control and optimise outcomes.

Posters: Service delivery & workforce

POSTER 30

Neurodevelopmental Conditions in Paediatric Patients at a National Ophthalmology Clinic:

Prevalence and Needs

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The increasing prevalence of neurodevelopmental conditions (NDC) has implications for paediatric eye services. Refractive error/strabismus are known associations, but sight threatening disorders are also reported. We evaluate the prevalence of NDC in children and young people (CYP) attending eye clinics at a regional centre. All families with CYP over two years of age attending monitored clinic sessions confidentially responded yes / no to an initial question regarding suspicion or diagnosis of NDC, before being invited to complete a more detailed questionnaire including clinic experience. Electronic patient records for subjects were reviewed for birth, ophthalmic and neurodevelopmental history. All 98 families gave initial responses with 89.8% completing the questionnaire. The prevalence of suspected or confirmed NDC was 16.3%. Refractive error or strabismus affected 68.8% of the 16 patients with NDC compared to 42.6% of the 82 other attendees ($p = 0.071$, Fisher's test). Prevalence of diagnosed autism was (6.1%) with two affected males having documented Avoidant/Restrictive Food Intake Disorder (ARFID) and nutritional optic neuropathy. Suggested improvements to clinic experience included quieter waiting rooms and shorter in-clinic waiting times. This service evaluation indicates that approximately 16% of paediatric eye clinic attendees may have symptoms of NDC and suggests measures to make clinic more tolerable for them. At 6.1%, the prevalence of autism in our clinics is almost twice that of the general CYP population (3.1%). The importance of taking a dietary history and initiating vitamin supplementation to prevent visual impairment is demonstrated by the inclusion of ARFID related optic neuropathy in this cohort.

POSTER 31

Evaluation of an Orthoptic-Led Virtual Paediatric Ophthalmology Clinic (DIAGPAED): A Clinical

Audit

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Virtual clinics have increasingly been used to manage stable ophthalmology patients and improve service capacity. At Manchester Royal Eye Hospital, an orthoptic-led paediatric virtual clinic (DIAGPAED) was introduced during the COVID-19 pandemic to monitor low-risk paediatric patients who do not require face-to-face review. This audit evaluated adherence to local standard operating procedures (SOPs) and assessed the safety and effectiveness of the service. A retrospective audit of patients booked into the DIAGPAED clinic between January and June 2024 was conducted using an electronic patient record search. Data was collected against seven predefined standards, including documentation of clinical history, completion of appropriate investigations, clinic correspondence, and booking within the requested timeframe. Patients who did not attend were included where relevant. A total of 371 cases were analysed. Compliance with most clinical standards was high: appropriate history taking (100%), completion of required clinical tests (97%), letters dictated (100%), letters completed within four weeks (97%), inclusion of findings (100%), and inclusion of management plans (100%). However, only 14.5% of patients were booked within the requested timeframe, largely reflecting historical waiting list pressures. Of patients attending the clinic, 47.2% were discharged and 41.2% remained within the virtual pathway, meaning 88.2% avoided face-to-face hospital appointments. Among 76 new referrals for suspected papilloedema, no cases of true papilloedema were identified. The DIAGPAED clinic provides a safe and effective pathway for monitoring low-risk paediatric ophthalmology patients, with high compliance to clinical standards and substantial reduction in face-to-face appointments. Improved waiting list management and expanded orthoptic advanced practice roles may further enhance service capacity.

POSTER 32

Service Delivery Evaluation of a Nurse-Led Paediatric Visual Acuity Clinic in 2025

Ian Cunningham, Jodie McWilliams, Judith Gray, Jose Gonzalez-Martin
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To evaluate the suitability, effectiveness, and safety of a nurse-led paediatric visual acuity clinic. To assess discharge rates and need for onward ophthalmological input. A retrospective service evaluation was undertaken of all children attending a nurse-led visual acuity clinic during 2025. Predefined inclusion criteria were used to identify children suitable for nurse-led review, including absence of known ocular pathology and stable visual development. Outcome measures included clinic suitability, discharge at first visit, requirement for repeat refraction, and referral for ophthalmological consultation. Ninety-eight percent of children attending the clinic met the predefined suitability criteria, demonstrating appropriate triage and case selection. Seventy percent of children were discharged safely after their first visit, indicating efficient resolution and reassurance within the nurse-led pathway. Twenty-seven percent required repeat refraction, predominantly due to documented progression of myopia necessitating ongoing optometric management. Only 3% of children required escalation to ophthalmological consultation, reflecting a low rate of unmet need and effective identification of cases requiring specialist input. The nurse-led paediatric visual acuity clinic demonstrated high levels of suitability, safety, and efficiency, with the majority of children managed without ophthalmologist involvement. This model supports timely discharge, early identification of refractive change, and effective use of specialist resources. Nurse-led services represent a sustainable approach to managing increasing demand within paediatric ophthalmology while maintaining high standards of care

POSTER 33

Virtual Follow Up One Week After Ptosis Surgery in Children: Is this suitable?

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Complications after surgical ptosis repair include pain, lagophthalmos and exposure keratopathy. Therefore children are usually reviewed face to face (F2F) after 1 week. With our experience of virtual reviews after strabismus surgery we have created a protocol for virtual review after ptosis surgery. Our aim is to identify complications in the first week after ptosis surgery and outcome the initial pilot of virtual reviews. Retrospective review of patient case notes of those children who underwent ptosis surgery at AHCH (June 2022 - February 2025). Virtual appointments conducted via a digital care pathway platform (ISLACARE LTD, United Kingdom) involved completing a form and uploading photographs. If not completed a telephone consultation was undertaken. Patients with incomplete data were excluded. 81 procedures (73 patients) are included. Nearly 2/3rd had F2F appointment (n=51, 63%) with the rest virtual follow up. Pain was reported in 4%, lagophthalmos 31%, exposure keratopathy 1%, none had significant wound issues. One patient required re-operation within one week due to pain from overcorrection. All patients who had virtual review did not require an earlier appointment nor required unplanned intervention. Complications after ptosis surgery are usually mild and self limiting, even in children. Our findings of complications are similar to published data. Initial virtual reviews can be conducted safely with use of appropriate form and oversight of an experienced ophthalmologist. Use of a remote digital imaging system has been shown to be effective in the post-operative review after ptosis surgery and may help to reduce burden in outpatient clinics.

POSTER 34

Orthoptic-led paediatric clinics for epiphora and eyelid lesions: improving access and reducing waiting times

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Common paediatric presentations such as epiphora and eyelid lesions are typically non-urgent but place pressure on outpatient services, contributing to long waiting times. Orthoptic-led clinics were introduced to improve access and release consultant capacity. Aim: to evaluate the impact of orthoptic-led clinics on waiting times, patient outcomes, and need for consultant input. Retrospective review of patients seen over 17 months (July 2023–December 2025). Included: patients aged 0–5 years with epiphora and 0–17 years with eyelid lesions/blepharitis. Outcomes included waiting times, management, and follow-up. 316/420 met inclusion criteria. Mean waiting time reduced from 24 weeks to 9 weeks. In the epiphora cohort (n=138), 22% were discharged at presentation, 27% placed on patient-initiated follow-up (PIFU), with only

11% re-presenting. Although 51% were listed for syringing and probing, 30% later cancelled due to symptom resolution. Therefore, 61% were discharged with advice alone, no patients required consultant input. In the eyelid lesions/blepharitis cohort (n=178), 24% discharged after the first visit, 39% managed via PIFU with a 7% re-contact rate. Ten percent were listed for incision and curettage, of whom 39% cancelled due to resolution. Only 7% required referral to consultant. Overall, 63% of patients were managed without consultant, 18% required same-day doctor input (mainly prescribing), and 4% required consultant follow-up. No adverse outcomes were identified. These clinics provide a safe and effective model for managing common non-urgent conditions, improving access, reducing waiting times, and decreasing demand on consultant-led services. Expanding prescribing capabilities for orthoptists could further enhance efficiency and autonomy.

POSTER 35

Audit Measuring Time to Fundal Examination Following Introduction of Nurse-Led Red Reflex Clinics

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Red reflex testing is a screening test detecting media opacity in infants, aiming to detect ocular pathology threatening vision and systemic health. This audit assessed time from referral to dilated fundal assessment. Aims included reduction of waiting times, early detection of pathology and improved patient safety. Red reflex referrals to the Northern Ireland Regional Paediatric Ophthalmology Department were assessed for time between referral and clinic between January 2017 and 2019. Nurse-led red reflex clinics (NLRRC) were introduced in November 2024 and data collected between November 2024 and January 2025. This clinic ran alongside a consultant clinic and included nurse-administered history proforma, pupil and retinoscopy assessment, Patient Group Directed dilatation prescriptions and results letters to referrers. Dilated fundal assessment was performed and documented by a paediatric ophthalmologist. Our target is 100% of referrals to be seen within two weeks of referral, and 80% within one week. From January 2025 we modified the target waiting times based on referral reason and source. The data was audited again between January and October 2025. 1 showed 47% of patients were seen within 2 weeks. Following introduction of the NLRRC, 82% of patients were seen within 2 weeks. Interventions following this audit were a temporary fourth clinic site and completed training for nursing staff. Cycle 3 showed 84% of patients were seen within their target time. Introduction of NLRRC improved waiting times. Seasonal clinical turndown and staff availability affected waiting times in the third audit cycle. Future work includes further expansion of the service.

POSTER 36

12-year data of Orthoptic led primary vision screening

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North Cheshire and Mersey NHS Trust, UK

We present 12-year outcome data from orthoptic led primary vision screening from 27, 480 children in Warrington. Warrington's ethnicity is 93% White British with a small but growing ethnic minority population. Primary vision screening has been commissioned in Warrington since academic year 2013/2014 and has followed the recommended Orthoptic led screening with an Orthoptic assistant undertaking the screening with Orthoptic leadership and oversight. The number of eligible children has steadily declined over the past 12 years with a reduction of 11% of eligible children from 2013 to 2024, which is inline with the expected reduction in the national birth rate of 1-2% per year. The number of children that required referral for Special educational needs (SEN) screening has increased in 12 years, accounting for 9.4% of all failed screening referrals due to children requiring specialist Orthoptic assessment for SEN. The number of referrals has increased with an average of 14% of the total population screened requiring secondary care assessment. An increase of 8% since 2013. Over the last 12 years the average number of false positive referrals is 28%. In the years following covid-19 there was a 5% increase, however in the year 24/25 the number has fallen to average levels again. The number of children who failed vision screening and required spectacle correction remains stable and on average accounts for 44% of the total number referred to secondary care (range 38% - 53%). The type of refractive error identified has largely remained similar in the last 6 years with the largest change seen in anisomyopia with astigmatism (9% increase since 2019) and a downward trend of anisohypermetropia. Numbers requiring primary vision screening are reducing inline with the reduction in the national birth rate in England. The number of SEN referrals in mainstream schools has increased and increasing the demand for specialist assessment. The increase in the number of false positives and referral rate in the years after covid-19 may reflect the lower "school readiness" of children aged 4-5 years old.

POSTER 37

Compliance to the NHSE Special eye care service

Sonia MacDiarmid, Frances Midgley

North Cheshire and Mersey NHS Foundation Trust, UK

A specialist eye care service for special educational needs (SEN) schools has been undertaken and commissioned in Warrington and Halton for the last 12 years. Special eye care provision is undertaken in 6 special schools in the two boroughs of Warrington and Halton. In 2021 the service was amended to align with the service specification set out by NHS England's proof of concept. This enhanced the existing service carried out by the Orthoptic and Optometry team within secondary care to include dispensing opticians. Activity data and clinical data was extracted from the hospital PAS and EPR systems. Data from special school activity for 1st April 2024 to 31st March 2026 was analysed. 60 random case notes were audited against service specification from 24/25 cohort of children and young people (CYP). From 1st April 2024 – 31st March 2025 there were a total of 840 Orthoptic assessments completed on 611 CYP. 83% of eligible CYP had a refraction within 12 months and therefore met the criteria set out by NHSE. The average age of CYP seen was 10.8 years with a range of 4-19 years. There a higher proportion of male to females with 71% of all the CYP seen in SEN setting being male. In 25/26 there were 783 orthoptic assessments undertaken on 629 CYP, with 91% having a refraction within the 12-month target timeframe. An increase in 8% on the previous year. From the 24/25 cohort of children a random sample of 60 case notes were analysed. 50% of all children had a diagnosis of ASD with a further 14% having a diagnosis of cerebral palsy or Down's syndrome. As per the guidance, any child with Down syndrome or cerebral palsy should have a dynamic retinoscopy carried out. Our data shows 50% of children with CP or Down's syndrome had a dynamic ret performed with 38% having no lag identified and therefore bifocals not issued. 50% of the children and young people had not had dynamic ret performed, reasons for this are it was deemed not appropriate to test at that stage or the child or young person had moved out of the area. 35% of children and young people in the 60 cases studied had glasses issued and dispensed within school during the 2 years. Only 3% of the 60-case looked at required a referral to a Consultant Ophthalmologist during the 12 months analysed. 83% of children and young people eligible for the service gave consent to be part of the proof of concept. This demonstrates secondary care Orthoptists, Optometrists and Dispensing Opticians can deliver a high quality service within special educational needs schools.

POSTER 38

Case mix in a tertiary general paediatric ophthalmology clinic: implications for workforce redesign

Rebecca Rewbury, Jessy Choi

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"Paediatric ophthalmology services face sustained demand pressures. Workforce redesign, including the development of sub-specialist services and advanced clinical practitioner roles can expand capacity and improve service delivery. This evaluation aimed to analyse the case-mix in general paediatric ophthalmology clinics in a tertiary centre, to quantify subspecialty distribution and the proportion requiring direct consultant input. Retrospective review of all attendances to general consultant paediatric eye clinics over one month (April 2025). The primary indication for the attendance was used to assign the most appropriate sub-specialty category. The necessity for direct consultant involvement was assessed for each encounter. A total of 270 encounters were analysed. 88% of all consultations were conducted face-to-face. 32% were new patients. Referrals were predominantly from non-ophthalmic hospital specialties, followed by general practitioners, community optometrists and the accident and emergency department. 68% of all patients were discharged. Neuro-ophthalmology represented the largest proportion of cases (31%), exceeding all other subspecialties, followed by anterior segment (excluding cataract) and strabismus. The most frequent neuro-ophthalmic indications were related to brain tumours and optic disc appearances. Direct consultant input was required in 53% of encounters, leaving 47% potentially manageable by non-consultant clinicians. The case mix demonstrates a disproportionate neuro-ophthalmology burden within general paediatric ophthalmology clinics and highlights substantial scope for task redistribution. These results should inform future service development, to decompress general clinics, streamline triage, and concentrate expertise. A dedicated paediatric neuro-ophthalmology service alongside expansion of advanced practitioner-led pathways, represents a pragmatic route to improve capacity, safety and service efficiency."

POSTER 39

Gender Dynamics in UK Private Ophthalmology Practice: Representation, Barriers, and Insights

Sachleen Soor, Anna Maino
UK

Women hold 30% of RCOphth consultant posts, yet their private sector presence is undocumented. This study aimed to evaluate gender representation in private practice (PP) and explore differences relative to NHS sector trends, to assess what barriers exist. A cross-sectional analysis of the Private Healthcare Information Network (PHIN) database (March 2026) was conducted to assess gender distribution and consultation fees. Subspecialty data was used to identify paediatric ophthalmologists where available. Additionally, a survey of paediatric ophthalmologists was distributed via the BIPOSA mailing list to paediatric ophthalmology consultants. The survey included demographic data, PP participation, motivations and perceived barriers. A total of 1,171 ophthalmology consultants were identified from PHIN, of whom 19% were female and 50 were paediatric ophthalmologists. Female ophthalmologists demonstrated higher median initial consultation fees (£220 females vs £210 males). Separately, of the 61 BIPOSA members who completed the survey, 45.9% reported undertaking PP, mainly in a private hospital/clinic setting. Consultants with >20 years post-CCT were more likely to undertake PP, with the majority based in London. Common motivations for PP included greater autonomy, extra income and patient-personalised care. Reported barriers included insurance fees, lack of multidisciplinary team, perceived low demand, childcare commitments and lack of mentorship. Our data suggests a significant gender gap in the private sector. Strikingly, female consultants who do enter PP command higher median fees, suggesting high market value despite lower participation. To achieve gender equity, the specialty must dismantle structural hurdles to ensure the private sector reflects the diversity of the modern ophthalmology workforce.

POSTER 40

Why a paediatric orthoptic oncology service matters

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Visual impairment is a common but under-recognised complication in children with intracranial tumours, with over half of patients reportedly not receiving timely ophthalmic assessment. Tumours affecting visual pathways—such as optic pathway glioma, craniopharyngioma and astrocytoma, can significantly impact vision and quality of life. A dedicated paediatric orthoptic-led oncology service plays a crucial role in early detection and management of these ocular diseases. To evaluate the role and clinical impact of a specialised paediatric orthoptic-led oncology service in identifying, monitoring, and managing visual dysfunction in children with intracranial tumours. A retrospective review was conducted of children referred to this service at Leicester Royal Infirmary between May 2024 and September 2025. Data collected included diagnosis, types of visual deficits (e.g. reduced visual acuity, visual field loss, ocular motility disorders) and frequency of follow-up. Visual pathway disease was categorised and quantified to assess patterns of presentation and service utilisation. A range of visual impairments were identified across the cohort, with many patients requiring ongoing monitoring and multidisciplinary management i.e. 35% had an ocular motility disorder, 17.5% had visual field abnormality, 30% had reduced vision and 12.5% had pupil testing abnormality. Regular orthoptic assessments enabled early detection of visual changes, timely intervention and appropriate onward referrals for treatment. Follow-up frequency reflected the complexity and progression of visual involvement. A dedicated paediatric orthoptic-led oncology service enables early detection and management of visual pathway disease in children with intracranial tumours, improving outcomes, supporting multidisciplinary care, and reducing delays in diagnosis and intervention.

Posters: Strabismus, nystagmus & ocular motility

POSTER 41

Current UK trends and opinions on Infantile Esotropia management

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Infantile Esotropia (IET) is a large-angle esotropia typically presenting before the age of 6 months with other typical clinic features. Despite having been well described and researched the management of the strabismic deviation is highly debated.

This includes timing of re-alignment and choice of treatment (surgery versus botulinum toxin A (BTXA). A national online survey was distributed via the British and Irish Paediatric Ophthalmology and Strabismus Association (BIPOSA) listserv in October 2025 and remained open for six weeks, targeting Ophthalmologists and Orthoptists involved in paediatric strabismus care. 94 responses were received: 60 Ophthalmologists (64%), 31 Orthoptists (33%), and 3 junior doctors (3%). Significant variation in IET management was demonstrated. Definitions of early intervention varied: 59% defined it as treatment between 6 and 24 months, 16% as before 6 months, and 10% as within 3 months of misalignment. Early intervention was routinely considered by 53% of respondents, sometimes by 34%, and 12% preferred observation. For early intervention, BTXA was the preferred first-line modality (34%). Overall, surgery was the preferred first-line treatment (41%), followed by BTXA (30%) and observation (13%). BTXA access was available to 77% of respondents. Long-term ocular alignment was the primary outcome of interest for future trials (67%). Surgery versus BTXA and early versus late intervention were the top-ranked priorities for randomised controlled trials (RCTs). This survey confirms significant variability in IET management across the UK, demonstrating the need for well-designed multi-centre RCTs to establish optimal treatment strategies.

POSTER 42

Trends in Adjustable Squint Surgery: An 11-Year Longitudinal Study in a Tertiary Centre

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This study evaluated the trends in performance of adjustable squint surgery over an 11-year period in a single tertiary ophthalmic centre. A retrospective review of all squint surgeries performed between January 2015 and December 2025 was undertaken. Adjustable cases were identified via procedural coding. Patient demographics, primary diagnosis, whether suture adjustment was performed, and reoperation data were extracted and compared between adjustable and non-adjustable cohorts. Of 2,042 surgeries performed, adjustable surgery was planned in 0.9% of cases. Utilisation peaked in 2015 at 5.0% and declined to 0.4% by 2025. Exotropia was the most common indication (61.1%, n=11), followed by esotropia (16.7%, n=3). Suture adjustment was performed in only 6 of 18 cases (33.3%). The reoperation rate was higher in the adjustable cohort (22.2%; 4/18) than in the non-adjustable cohort (8.5%; 172/2,024). The declining use of adjustable surgery at this centre likely reflects evolving consultant practice. The finding that post-operative suture adjustment was only performed in one-third of planned adjustable cases is notable. The higher reoperation rate in the adjustable cohort may reflect the greater complexity of cases selected for this technique, rather than a failure of the technique itself. Adjustable squint surgery represents less than 1% of current squint surgeries performed at this centre and its use is declining. The low rate of post-operative suture adjustment challenges the routine use of this technique and supports a reappraisal of patient selection criteria.

POSTER 43

Sudden-onset diplopia in adults attending an Acute Orthoptic Clinic

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Sudden-onset double vision in adults has a broad differential diagnosis and requires prompt orthoptic and medical assessment. Microvascular cranial nerve palsy is a recognised cause for patient over the age of 60, particularly those with vascular risk factors. It was felt this was becoming more prominent in patients under the age of 60. We reviewed the presentation profile of adults attending the Orthoptic department with sudden-onset diplopia. A retrospective review was undertaken of adults under the age of 60 attending the Orthoptic department with sudden-onset diplopia. Over a 4-month period 29 patients attended the Orthoptic department with sudden-onset diplopia. Their demographic details, clinical findings, and the most likely aetiology were reviewed. Further investigation, such as MRI were completed in most cases, depending upon their appointment pathway. Cases were categorised according to diagnosis. Microvascular cranial nerve palsies accounted for a significant proportion of these cases presenting with sudden-onset diplopia; some of whom did not have known microvascular risk factors. The results suggest a shift in the age profile compared with the traditional expectation that they occur predominantly in older adults. The remaining cases reflected a range of alternative causes of diplopia, reinforcing the need for comprehensive assessment in all patients. In this small series, microvascular cranial nerve palsies were an increasingly common cause of sudden-onset diplopia in adults under 60 years. This finding highlights the importance of maintaining a broad differential diagnosis and ensuring appropriate investigation and follow-up is completed for all patients, regardless of age. Further larger series are required to better understand the prevalence of microvascular nerve palsies.

POSTER 44

Transforming Strabismus Services Through Advanced Orthoptist Led Care

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National workforce pressures highlighted in the Royal College of Ophthalmologists' 2022 census prompted collaboration between Belfast Health and Social Care Trust Orthoptics and Ophthalmology to redesign strabismus services. Aiming to develop and embed Advanced Orthoptic-led pre-assessment, consenting, theatre assistance and post-operative review roles, to expand Ophthalmology capacity, reduce waiting times, prevent theatre cancellations, and deliver a more efficient, sustainable and patient centred strabismus care pathway. A multidisciplinary quality-improvement project trialled Advanced Orthoptists in extended-scope roles: orthoptic-led pre-assessment clinics with independent consenting, an orthoptic theatre assistant role to maintain surgical list continuity, and orthoptic-led post-operative review clinics incorporating slit-lamp examination. Training included an informed clinical consent course, in-house teaching, and completion of British and Irish Orthoptic Society competencies in consenting, surgical first assistance, and post-operative assessment, under Consultant Ophthalmologist supervision. This created a robust governance structure enabling safe and sustainable service transformation. Paediatric strabismus pre-assessment waiting times reduced from 208 weeks (June 2024) to 6 weeks, and adult strabismus surgical waiting list reduced from 468 to 260 weeks. Between 01/04/2025 and 31/03/2026, orthoptist delivered activity released 270 consultant appointments, contributing to a 9 month reduction in the urgent new Paediatric Ophthalmology waiting list. Advanced Orthoptists supported 63 strabismus theatre lists, preventing cancellations due to resident doctor unavailability and avoiding associated cost inefficiencies. Surgical throughput increased, consultants redirected time to higher priority patients, and clinicians reported enhanced job satisfaction. Patients experienced timely access to surgery, resolution of symptoms, and better psychosocial wellbeing. Originally piloted with two Consultant Paediatric Ophthalmologists, the model has expanded to regional paediatric and adult strabismus pathways. Embedding Advanced Orthoptists across the pathway improves workforce resilience, capacity, and cost effectiveness. New Advanced Orthoptic roles in imaging and eye casualty triage further support Ophthalmology reform, offering a scalable, sustainable model for wider adoption.

POSTER 45

Squint Surgery Augmented with Botulinum Toxin for Childhood Esotropias

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There is limited data on the use of botulinum toxin as an adjunct to medial rectus surgery for the surgical management of paediatric esotropias. We present data suggesting that augmentation of bilateral medial rectus recession with botulinum toxin may enhance surgical effect while reducing the need for multiple procedures in this group. A retrospective study was performed across two paediatric ophthalmology units evaluating outcomes of primary medial rectus recession augmented with intraoperative botulinum toxin injection. Childhood esotropias with no prior strabismus surgery measuring 40 prism diopters or more were included. Data collected included age, pre-operative deviation, surgical dosage, botulinum toxin dose, post-operative ocular alignment and if there was presence of binocular single vision postoperatively. Patients underwent 5.5 mm recessions of one or both medial recti, with 1.25–2.5 units of botulinum toxin injected one or both muscles under direct visualisation. The primary objective was to assess post-operative ocular alignment at final follow-up. Thirteen children were included (age range 5–8 years). Pre-operative deviation ranged from 40–50 prism dioptres at distance and 45–70 prism dioptres at near. Mean follow-up was 6 months. Post-operative alignment ranged from orthotropia to 20 prism dioptres of residual esotropia. No serious permanent complications related to botulinum toxin were observed. Botulinum toxin-augmented medial rectus recession appears to be a safe and effective primary surgical strategy for decompensated esotropia. Larger and longer prospective comparative studies are needed to define its role in routine practice.

POSTER 46

Extraocular Muscle Plication as an Alternative to Resection in Strabismus Surgery: A Comparative Study

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Extraocular-muscle plication has evolved as a vessel-sparing alternative, however comparative outcome data remains limited. This study investigated effectiveness of plication compared to resection surgery, evaluating surgical outcome, dose-response and post-plication muscle morphology, using anterior-segment optical coherence tomography (AS-OCT). A service evaluation of retrospective consecutive cases from a single surgeon's logbook, with sub-group analysis. Among 225 cases, 75 (33.3%) underwent plication and 150 (66.7%) resection. Mean pre-operative deviation was similar, 37.38 vs 37.61 prism dioptres (PD). At 2 weeks, overall deviation across all cases reduced by 77.98% following plication and 94.48% following resection. Surgical success was similar, with 62.9% versus 65.1% within ± 10 PD and 87.1% versus 93.8% within ± 20 PD for plication and resection respectively. For single-muscle procedures, the surgical dose-response was 3.24 PD/mm for plication $\pm$ advancement (n=19) and 2.57 PD/mm for resection (n=17) based on week 2 post-operative measurements. Central plication demonstrated 2.1 PD/mm (n=12). No significant difference was found between the cohorts including consecutive exotropia subgroup (p=0.83), or differences in binocularity (p=0.74). Overcorrection occurred less frequently after single-muscle plication (9.7%) than resection (29.3%) while undercorrection > 10 PD was more common (29.3% vs 14.6%). No scleral perforation or lost muscles. AS-OCT showed transient muscle thickening post-plication, normalising by 6 months. Plication surgery produces alignment outcomes comparable to resection, with lower risk of overcorrection. Outcomes are consistent within subgroups with various complexity. AS-OCT findings confirmed no persistent increase in muscle bulk, correlating with intra-operative findings. These results support plication as a safe, effective and vessel-sparing alternative to resection. Evaluation of outcomes from inferior oblique anteriorisation in management of hypertropia associated with superior oblique underactivity and inferior oblique overactivity

POSTER 47

Evaluation of outcomes from inferior oblique anteriorisation in management of hypertropia associated with superior oblique underactivity and inferior oblique overactivity

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Inferior oblique anteriorisation (IOA) is commonly performed to address conditions such as superior oblique underaction (SOUA), inferior oblique overaction (IOOA), and dissociated vertical deviation (DVD). Our study analysed data extracted from Medisight for inferior oblique anteriorisation procedures performed at Royal Liverpool University Hospital between 2020 and 2026. Pre-operative and post-operative measurements of horizontal and vertical deviation, both near and distance, were analysed. Success was determined as resultant hypertropia ≤ 5 prism dioptres (PD) with patient satisfaction with outcome. Partial success was determined as persistent hypertropia > 5 PD but patient satisfied with outcome. A total of 15 patients were included. Subjective success was observed in 53% (8/15) of cases; a further 20% (3/15) demonstrated partial success. Combined success rate of 73% (11/15). Further intervention occurred in 20% (3/15) and 1 patient is unsure. There was a mean reduction of hypertropia by 7.5 PD for near, 5.1PD for distance. There was a mean reduction of exotropia by 1.8PD for near, 3.9PD for distance. Our data fits in with published data regarding success of IOA in the correction of hypertropia with a small correction of exotropia. Interestingly in cases with a hypertropia in primary exceeding 20PD, IOA was less likely to be successful (25%) as compared to those with < 20 PD of hypertropia (91%). In conclusion, IOA appears to be an effective procedure in the management of hypertropia with either SOUA or IOOA. However hypertropia > 20 PD may require an alternative approach and the patient should be counselled accordingly."

POSTER 48

The use of anterior segment optical coherence tomography (AS-OCT) to determine the insertion of the horizontal extra-ocular muscles

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Reliable pre-operative localisation of extra-ocular muscle insertions remains a persistent challenge in complex and redo-strabismus, where previous operative records are unavailable. AS-OCT has emerged as a promising non-invasive imaging tool, its real-world accuracy and limits are not well-defined. This NIHR-funded pilot directly benchmarks AS-OCT against intra-operative measurements and delineates its performance. Pre-operative AS-OCT measurements of horizontal rectus muscle insertions were compared with intra-operative reference from limbus to the muscle insertion. Forty-five recti from 31 patients (mean age 41.1 years) were analysed, excluded two due to poor image quality. Overall, AS-OCT achieved agreement within 1 mm in 72.1%, comparable performance in 25 medial and 18 lateral recti.

In 33 unoperated-muscles, AS-OCT measurements accuracy was 84.85% within 1 mm. Medial-rectus: AS-OCT-measurements 5.42mm (SD 0.82mm, range 2.63mm), surgical-measurements 5.43mm (SD 0.24mm, range 0.75mm). Lateral-rectus: AS-OCT-measurements 6.49mm (SD 0.5, range 1.4), surgical-measurements 6.96 mm(SD 0.05, range 0.1). In previously operated-muscles, agreement declined, with a consistent underestimation with AS-OCT. Medial-rectus: AS-OCT-measurement 7.97mm (SD 1.92mm, range 4.01mm), surgical-measurements 9.49mm (SD 1.69mm, range 3.75mm). Lateral-rectus: AS-OCT-measurement 8.28mm (SD 0.82mm, range 1.1mm), surgical-measurements 10.67mm (SD 2.08mm, range 4.00mm). Accuracy decreased with increasing insertion distance from the limbus. AS-OCT produced clinical agreement in horizontal rectus pre-operative localisation, a reliable and clinically practical imaging tool. AS-OCT underestimates insertion position in previously operated muscles, but highly accurate in unoperated muscles. It is useful in surgical planning e.g. disparity history, lost muscle and complicated re-operation while previous surgical notes are missing. AS-OCT is a valuable adjunct in contemporary strabismus practice

POSTER 49

Higher Visual Function Profiles in Cerebral Visual Impairment With and Without Autism Spectrum Disorder: Evidence for Overlapping Phenotypes

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Cerebral visual impairment (CVI) and autism spectrum disorder (ASD) share overlapping behavioural phenotypes, raising uncertainty as to whether co-occurrence reflects true comorbidity or behavioural mimicry (Fazzi et al., 2019; Chokron et al., 2020). This study compares higher visual function profiles in children with CVI with and without ASD. We retrospectively analysed 147 children with CVI (mean age 9.74 ± 3.69 years) from the Chandna et al. (2024) cohort: 59 (26 female) with ASD (CVI+ASD) and 88 (39 female) without (CVI-ASD). Parents completed the Higher Visual Function Questionnaire Inventory (HVFQI-58). Two measures were derived: CVI spectrum (proportion of items rated Sometimes, Often, or Always; range 0-1) and severity (mean Likert response; range 1-5). Group- and item-level comparisons used Mann-Whitney U; the same 2024 neurotypical cohort served as external reference. CVI+ASD showed higher spectrum (0.70 vs 0.61) and severity (3.30 vs 2.98) than CVI-ASD; both exceeded neurotypical values (0.12; 1.42). Eleven items differentiated groups; three remained significant across both metrics (facial expressions, furniture moved, floor-boundary crossing). Some items trended higher in CVI-ASD, indicating a non-uniform profile. CVI+ASD is associated with greater and qualitatively distinct visual dysfunction. Clustering of significant items around ASD-related behaviours suggests HVFQI composites may partly capture autism itself (Perna et al., 2023), highlighting potential diagnostic overlap. Extending the cohorts to include children with ASD-CVI, will further examine behavioural overlap and potential diagnostic mimicry.

Electronic posters: case reports: Anterior segment, cornea & uveitis

Eposter 1

Beyond Infection: An Unusual Cause of Recurrent Periocular Swelling in a Child

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Recurrent periocular swelling in children is frequently attributed to infective causes such as preseptal cellulitis. However, atypical or recurrent presentations should prompt reconsideration of the diagnosis. We describe a 12-year-old boy with intermittent unilateral eyelid swelling, initially managed as recurrent preseptal cellulitis. Despite multiple courses of antibiotics, symptoms showed only partial and temporary improvement, with no clear infective trigger identified. CT imaging was performed due to ongoing diagnostic uncertainty and incidentally identified an orbital abnormality, prompting a shift in clinical focus towards possible intracranial or structural pathology. However, this finding proved non-contributory and risked diverting attention from the underlying cause. A more detailed history subsequently revealed episodes of urticarial rash, particularly following swimming, along with cutaneous lesions affecting the scalp, forehead, chest and back. These features suggested an alternative diagnosis. Clinical assessment was consistent with urticaria pigmentosa, a form of cutaneous mastocytosis, with eyelid swelling representing episodes of angioedema secondary to mast cell degranulation and histamine release. This case highlights the importance of thorough and iterative history-taking in paediatric presentations. Earlier opportunities for diagnosis were missed due to limited exploration of dermatological features and reliance on an existing diagnostic label, compounded further by incidental imaging findings. Treatment typically includes antihistamines, with mast cell stabilisers in selected cases. This case emphasises the need to maintain a broad differential diagnosis and to re-evaluate when the clinical course does not align with the presumed diagnosis.

Epouser 2

Paediatric corneal hypoesthesia: Expanding the ocular spectrum of PHACES

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PHACES is an acronym pertaining to the pertinent features of the neurocutaneous disorder: posterior fossa abnormalities, haemangiomas of the face, cardiovascular anomalies and eye anomalies. Ocular findings are therefore mostly observed in the posterior segment and include problems with optic nerve tissues, retinal vascular changes or microphthalmia. We describe a paediatric patient with a confirmed diagnosis of PHACES syndrome, who presented with recurrent corneal ulcers and scarring due to recurrent ocular surface irritation. She was found to have reduced corneal sensation. The child had a history of a large segmental facial haemangioma in the trigeminal distribution and associated cerebrovascular anomalies. The patient was managed conservatively with intensive ocular surface lubrication, topical antibiotics and frequent reviews. An isolated episode of a secondary keratitis necessitating corneal scraping resulted in a further drop in visual acuity. This episode was managed with intensive chloramphenicol drops. Later, moisture chambers were commenced at night. The ocular surface has since stabilized. Unfortunately, vision is 6/18 secondary to a large central corneal scar and likely an element of stimulus deprivation amblyopia. She has been referred for corneal neurotization surgery in Birmingham. This case highlights corneal hypoesthesia as a potential manifestation of PHACES, likely related trigeminal nerve involvement. Routine assessment of corneal sensation should be considered in patients with PHACES syndrome, particularly those with haemangiomas involving the trigeminal distribution. Secondly, paediatric cases of chronic anterior segment ulceration raise a separate urgency due to the threat of stimulus deprivation amblyopia. Early diagnosis, aggressive treatment and intensive follow up are crucial.

Epouser 3

Endothelial keratoplasty in an adolescent with congenital hereditary endothelial dystrophy

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Congenital hereditary endothelial dystrophy (CHED) is a corneal dystrophy characterised by progressive stromal oedema and corneal opacification secondary to endothelial dysfunction. The condition is highly amblyogenic if not treated promptly. The surgical intervention of choice in children with CHED has traditionally been penetrating keratoplasty (PKP) however in recent years there has been increasing adoption of endothelial keratoplasty procedures such as Descemet's stripping automated endothelial keratoplasty (DSAEK). There are numerous advantages to DSAEK in comparison to PKP including reduced astigmatism, the requirement for fewer sutures and earlier visual rehabilitation. We present a case of CHED in a fourteen-year-old girl managed with a left eye DSAEK at Manchester Royal Eye Hospital. Pre-operatively the patient had a best corrected visual acuity of 0.82 LogMAR in her left eye with a central corneal thickness of over 1000 microns. The left eye DSAEK proceeded uneventfully and the patient has been followed up for over six months. The left eye vision has improved to 0.32 with pinhole at latest follow up and their central corneal thickness (CCT) has reduced to 815 microns. The post-operative course has been complicated by ocular hypertension but this is controlled on only one topical intra-ocular pressure lowering agent. This case further adds to the growing evidence base that there is a role for endothelial keratoplasty

in children with CHED. There has been steady improvement in the patient's visual acuity in the months following surgery with notable reduction in their corneal thickness.

Epouser 13

The Unresponsive Eye: Managing Refractory Tubercular Panuveitis in a Young Patient

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We report a case of a 15-year-old girl presenting with bilateral panuveitis and retinal vasculitis secondary to presumed latent tuberculosis. She was commenced on standard anti-tubercular therapy, including rifampicin, along with systemic corticosteroids. However, intraocular inflammation remained inadequately controlled. Given the persistent disease activity, treatment was escalated to include methotrexate as a steroid-sparing immunosuppressive agent. Despite this, there was minimal clinical improvement, and visual acuity remained suboptimal. Subsequently, therapy was transitioned to the biologic agent adalimumab, which resulted in marked improvement in intraocular inflammation. An important learning point from this case is the significant pharmacokinetic interaction between rifampicin and commonly used immunosuppressive agents. Rifampicin is a potent inducer of hepatic cytochrome P450 enzymes, accelerating the metabolism of corticosteroids and methotrexate and reducing their bioavailability by up to 50%, thereby diminishing therapeutic efficacy. This interaction likely contributed to the poor response observed in our patient. In contrast, adalimumab undergoes clearance via the reticuloendothelial system rather than hepatic metabolism, and its efficacy remains unaffected by rifampicin. This case underscores the importance of recognizing drug-drug interactions in tuberculosis-associated uveitis and highlights the role of biologic therapy in refractory cases where conventional immunosuppression may be compromised.

Electronic posters: case reports: Genetic, syndromic & rare disease

Epouser 4

A novel missense variant in NYX presenting as high myopia in a case of complete congenital stationary night blindness

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Congenital stationary night blindness (CSNB) is a heterogenous retinal disorder characterised by nyctalopia, reduced visual acuity and an absent B-wave on the electroretinogram (ERG). Complete x-linked CSNB is typically caused by mutations in nyctalopin (NYX). Here we report a novel variant in NYX associated with a classical phenotype of complete CSNB presenting in a 11-year-old boy with high myopia. The patient initially presented age 4 with reduced vision (0.5logMAR in BE) and high myopia (-7.00DS) in both eyes with no family history of inherited eye disease. Fundus exam demonstrated a tilted optic disc, peripapillary atrophy and prominent choroidal vasculature. OCT showed a staphylomatous appearance. The electroretinogram demonstrated a profoundly electronegative B wave. Whole genome sequencing (R32 retinal gene panel) identified a hemizygous variant of unknown significance c.782T>A p.(Leu261Gln) in the NYX gene. The leucine at residue 261 is located within the leucine-rich repeat region which has been shown critical for NYX protein function and has been associated with other proven pathogenic missense variants. The translational effect of this patient's variant p.(Leu261Gln) had a predicted pathogenicity score of 1.0 using PolyPhen-2. The variant fulfils the American College of Medical Genetics and Genomics (ACMG) criteria as likely pathogenic. Segregation analysis is currently pending. This case report describes a novel NYX variant, identified in a paediatric patient presenting with high myopia who was later shown to have a classical phenotype for complete CSNB including an electronegative B wave on ERG. This report expands the list of known pathogenic variants in CSNB.

Epouser 5

A patient with autosomal recessive Knobloch Syndrome who is compound heterozygous for two novel presumed pathogenic mutations in COL18A1.

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Knobloch syndrome is a very rare, autosomal recessively inherited disorder caused by biallelic deleterious variants in the COL18A1 gene leading to deficiencies of type XVIII collagen. It is characterized by high myopia, vitreoretinal degeneration and occipital skull defects though there is wide phenotypic variability. Fewer than 100 cases have been reported in the literature. In 2015, baby R was referred to paediatric ophthalmology with exotropia. His vision was central, steady and maintained bilaterally. There was relative left microphthalmia. He had myopic fundus in the right eye and he had a chronic shallow total rhegmatogenous retinal detachment in the left. He had 18 dioptres of anisometropia with refraction OD - 14.00/+1.00 x 130, OS +4.00/+1.00 x 85. MRI of the brain showed thinning of the scalp fat overlying the occipital lobe on the left. The presentation was most in-keeping with Knobloch Syndrome and molecular analysis of COL18A1 was performed. R was heterozygous for two variants in COL18A1: c.3001G>T p.(Gly1001*) and c.3509dupC p.(Gly1171fs) both of which are likely pathogenic. Phase testing confirmed these variants were in trans. Vitreoretinal surgery was not performed in this case due to the chronicity at presentation and uncertainty of aetiology at the time. R has been fitted with contact lenses from an early age due to the degree of anisometropia. This case of Knobloch Syndrome is important because it describes a very rare disorder with 2 novel pathogenic mutations in a heterozygous state.

Epouser 6

A Rare Case of Optic Disc Neovascularisation and Vitreous Haemorrhage in Pediatric Bardet-Biedl Syndrome

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Bardet-Biedl Syndrome (BBS) is a rare autosomal recessive multisystem disorder characterised by rod-cone dystrophy and progressive visual loss. Retinal vascular changes including Coats'-like exudative disease, choroidal neovascular membrane (CNVM), peripheral and disc retinal neovascularisation, have been described but are uncommon in inherited retinal dystrophies. A 12-year-old female with genetically confirmed BBS, rod-cone dystrophy, and end-stage renal disease presented with acute unilateral visual decline (0.44 to 1.04 LogMAR in the left eye). Examination revealed left vitreous haemorrhage and bilateral optic disc neovascularisation (NVD), with retinal vascular attenuation and typical dystrophic changes. Multimodal imaging included Optos widefield fundus imaging, Optical coherence tomography (OCT), wide field angio-OCT (Xephilio OCT-S1, Canon), Fluorescein Fundus Angiography (FFA), Following 6 weeks of observation, bilateral intravitreal injection of anti-Vascular Endothelial Growth Factor (anti-VEGF) (Bevacizumab 1.25 mg/0.05 mL) was administered, given the absence of significant peripheral ischaemia. Retinal neovascularisation in inherited retinal dystrophies is rare and may relate to chronic photoreceptor degeneration, capillary non-perfusion, and ischaemia. In syndromic conditions such as BBS, additional mechanisms may contribute. Notably, Insulin-like Growth Factor 1 (IGF-1) levels were elevated (963), a known modulator of VEGF-mediated angiogenesis, which is known to play a role in the pathogenesis of diabetic retinopathy. Systemic contributors such as hypertension and diabetes were excluded. Vitreous haemorrhage and proliferative retinopathy represent rare but significant and potentially blinding complications in BBS. Intravitreal anti-VEGF therapy may be an effective treatment and preferred in the absence of significant retinal ischaemia. Elevated IGF-1 may play a contributory role in syndromic cases.

Electronic posters: case reports: Neuro-ophthalmology & CVI

Epouser 7

IVIG-Associated Intracranial Hypertension: A Rare Cause of Paediatric Papilloedema

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Intravenous immunoglobulin (IVIG) is widely used in paediatric practice and is generally well tolerated, with most adverse effects being mild and self-limiting. However, intracranial hypertension (IH) is an exceptionally rare but likely under-recognised complication, with only a very small number of reported cases. An 8-year-old girl with linear IgA bullous dermatosis presented with a three-week history of worsening headaches, vomiting, pulsatile tinnitus, and transient visual obscurations, beginning shortly after IVIG administration (2 mg/kg over 2 days). Ophthalmic examination revealed severe bilateral optic disc swelling (Frisén grade 4-5) with preserved visual acuity (0.0 LogMAR bilaterally) and colour vision. MRI brain with venography demonstrated features of raised intracranial pressure, including partially empty sella and right transverse and sigmoid sinus narrowing. Lumbar puncture demonstrated markedly elevated opening pressure (42 cm H₂O). In the absence of alternative causes, a diagnosis of IVIG-associated IH was made. Treatment with cerebrospinal fluid drainage and oral topiramate led to rapid clinical improvement, with near-complete resolution of papilloedema within two weeks. This case strengthens the emerging association between IVIG and intracranial hypertension in children. The

temporal relationship, severity of disc swelling despite preserved vision, and rapid reversibility following treatment suggest a probable causal link. Given the risk of irreversible visual loss, early ophthalmic assessment should be considered in children presenting with significant headache after IVIG, especially in the presence of other symptoms of raised intracranial pressure. Increased awareness of this rare complication is essential to enable prompt diagnosis and management, minimising the risk of visual impairment.

Ep0ster 8

A Silent Clue: Parinaud's Syndrome and a Forgotten VP Shunt

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Parinaud's syndrome is an early indicator of raised intracranial pressure resulting in compression of the tectal region, which may occur in the context of ventriculoperitoneal (VP) shunt malfunction. We report a 24-year-old female who developed features of Parinaud's syndrome, with neuroimaging revealing a previously undocumented VP shunt inserted in infancy for post-meningitic hydrocephalus. The patient presented with progressive diplopia, headache, and impaired upward gaze. Orthoptic assessment revealed subtle yet characteristic features of Parinaud's syndrome, including a compensatory chin-up posture, limitation of vertical gaze, and convergence-retraction nystagmus. Visual acuity and fundoscopic examination were normal. Magnetic resonance imaging demonstrated a right-sided ventriculoperitoneal shunt catheter, with radiological features suggestive of shunt dysfunction, including triventricular dilatation, anterior bowing of the lamina terminalis, and inferior displacement of the third ventricle. The patient was initially unaware of the presence of the shunt; historical confirmation was subsequently obtained from family members, who reported its insertion at three months of age following neonatal meningitis. A high-volume shunt tap resulted in marked but transient symptomatic improvement, supporting a diagnosis of subacute shunt under-drainage with consequent dorsal midbrain compression. The patient subsequently underwent urgent ventriculoperitoneal shunt revision, with complete resolution of Parinaud's syndrome observed within one month. This case highlights the diagnostic challenges associated with delayed recognition of shunt malfunction in patients with longstanding devices. It emphasises the importance of considering previous neurosurgical interventions, including ventriculoperitoneal shunts, in the evaluation of unexplained neurological symptoms, to facilitate timely management and prevent irreversible deficits.

Ep0ster 9

A rare case of chronic immune sensory polyradiculopathy (CISP) with ocular manifestations

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We present a rare case of chronic immune sensory polyradiculopathy (CISP) with ocular manifestations, which was misdiagnosed as a functional neurological disorder (FND) for over a decade. CISP is an immune-mediated condition affecting proximal sensory nerve roots, typically resulting in gait disturbance and sensory ataxia. This 52-year-old man presented at age 40 with diplopia due to decompensated intermittent exophoria, noticed following a febrile illness ten years earlier. Over time, he developed variable ocular motility deficits, left upper lid ptosis, paraesthesia, reduced sensation in the lower limbs and left hand, and intermittent dizziness. Initial management included botulinum toxin injections to the lateral recti, providing short-term benefit. He underwent strabismus surgery (lateral rectus recession and medial rectus resection). With progression of oculomotor symptoms, investigations were undertaken, including blood tests for myasthenia gravis and thyroid eye disease, alongside MRI imaging of the brain and orbits. Blood tests were unremarkable. MRI demonstrated enlargement of the oculomotor nerves within the cavernous sinus, suggestive of tubular neuroma. The patient was diagnosed with FND and underwent therapy without clinical improvement. Neurological review prompted reconsideration of an organic cause. Investigations, including lumbar puncture, spinal MRI, and nerve conduction studies, supported CISP. Treatment with intravenous immunoglobulin (IVIg) led to marked improvement in ocular motility and ptosis after the first cycle. CISP with cranial nerve involvement is exceptionally rare, with few cases. This case highlights diagnostic challenges and the risk of misattributing organic pathology to FND. Early recognition is beneficial, as appropriate immunotherapy can lead to significant clinical improvement.

Eposter 10

Severe Atypical Retinopathy of Prematurity in an Infant with ASPM-Related Microcephaly

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Retinopathy of prematurity (ROP) is a vasoproliferative disorder of the developing retina, typically correlated with degree of prematurity and systemic risk factors. Familial exudative vitreoretinopathy (FEVR) is a genetically mediated retinal vascular disorder associated with abnormalities in the Wnt/ β -catenin signalling pathway. Increasing evidence suggests phenotypic overlap between these entities, particularly in the presence of underlying genetic susceptibility. We report a premature infant born at 31+5 weeks' gestation (birth weight 1303 g) with ASPM-related primary microcephaly who developed atypical retinal neovascularisation. Initial screening at 35+5 weeks postmenstrual age demonstrated bilateral Zone II, Stage 1 ROP without plus disease. This progressed rapidly to Stage 3 disease in both eyes, characterised by localised temporal neovascularisation. Notably, there was no plus or pre-plus disease at any stage. The retinopathy persisted beyond term-corrected age, with clinical concern raised regarding an atypical ROP phenotype suggestive of a FEVR-like vasculopathy. Spontaneous regression occurred by 42+5 weeks postmenstrual age, with residual peripheral avascular retina. This case demonstrates an atypical ROP phenotype with features overlapping FEVR, in the context of an ASPM gene mutation. Since emerging evidence links ASPM to β -catenin signalling, we propose that disruption of Wnt-mediated retinal vascular development may predispose to abnormal neovascular responses in premature infants. Previous studies have described a spectrum of disease ROPER (ROP vs. FEVR) due to phenotypic overlap of both disease entities. ASPM-associated microcephaly may add to this and represents a previously unrecognised risk factor for severe or atypical ROP, highlighting the importance of considering genetic contributions in unexpected disease presentations.

Eposter 11

Late Onset Naïve Monocular Activation of Type 1 ROP in Over 42-week Preterm Baby: a Case Report

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We report a 27-week gestational age (GA) delivered newborn baby with a late naïve onset activation of retinopathy of prematurity (ROP) in one eye. He was admitted in neonatal intensive care unit (NICU) of Royal London Hospital with a weight of 1065g at birth and a suspected sepsis. At 36 weeks chronic lung disease was reported, thus he was discharged with oxygen ventilation at 38 weeks. As NICU protocol, routine ROP screening was performed with a final review at 37 weeks of bilateral anterior zone II stage 1-2 in regression with no Plus/Pre-plus in either eye, therefore 2 weeks' time review was planned. Patient missed appointment arranged in clinic, so upon attending a rescheduled review, examination of his left eye revealed a stage 3 ROP with plus disease and peripheral retinal haemorrhages. His fundus fluorescein angiography in arterio-venous phase demonstrated capillary tufts, large peripheral capillary non-perfusion areas, and arterio-venous shunt vessels, and on late phase being evident leakage from ridge. Given the high risk of "crunch syndrome" associated with anti-VEGF therapy in this case, we performed laser photocoagulation to the ischaemic, non-perfused retina of the left eye in two sessions, so a complete resolution of ROP was achieved after 4 weeks. Appropriate screening and clear counselling of parents/caregivers regarding the importance of attending follow-up appointments are essential for effective ROP management. When treatment is required, careful selection of the most suitable modality is critical to optimise outcomes.

Electronic posters Strabismus, nystagmus & ocular motility

Eposter 12

Isolated Inferior Rectus Palsy Masking Aggressive Sinonasal Malignancy: A Diagnostic Challenge

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Isolated extraocular muscle palsy in elderly patients is often presumed to be microvascular in origin; however, this may delay the diagnosis of serious underlying pathology. We present a rare case of isolated inferior rectus palsy as the initial manifestation of an aggressive sinonasal malignancy. An 87-year-old male presented with a 6-day history of sudden-onset binocular vertical diplopia. He had recently had a right upper tooth extraction. Initial ocular motility assessment revealed an isolated inferior rectus underaction. Ophthalmic assessment was satisfactory. Initial blood tests were sent to rule out Myasthenia Gravis and Thyroid Eye Disease. Over subsequent weeks, symptoms progressed with worsening diplopia, right hypertropia, conjunctival chemosis, and redness. The patient also reported ipsilateral hearing loss, raising suspicion of wider regional involvement. Initial investigations, including acetylcholine receptor antibodies and thyroid function tests, were normal. Due to progression, orbital imaging was performed. MRI demonstrated an infiltrative sinonasal lesion, and CT confirmed a destructive right maxillary sinonasal malignancy involving the pterygopalatine fossa, breach of inferior orbital floor with orbital extension. The patient was admitted under ENT, and biopsies were performed which resulted in metaplastic squamous cell carcinoma. He was subsequently listed for surgical removal with subsequent radiotherapy. There is a diagnostic challenge of isolated muscle palsy without early red flag signs, particularly in the context of coexisting dental and sinonasal pathology. This case highlights the importance of keeping malignancy/ infiltrative lesions as a differential diagnosis when seeing a patient with an isolated inferior rectus palsy.