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ABSTRACT BOOK

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Contents

FREE PAPERS

Cornea, Cataract and Refractive Surgery 3

General Ophthalmology 8

Glaucoma 13

Neuro-ophthalmology 18

Orbits and Oculoplastics 40

Paediatrics 47

Retina (including medical, surgical and uveitis) 53

Translational and Basic Science 61

POSTERS

Cornea, Cataract and Refractive Surgery 71

General Ophthalmology 88

Glaucoma 94

Neuro-ophthalmology 99

Orbits and Oculoplastics 219

Paediatrics 236

Retina (including medical, surgical and uveitis) 243

Abstract No.: 200112

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N206-208

Deep Learning Automated Diagnosis and Grading of Cataracts using Colour Fundus Images: The Fundus Cataract-AI Project

First Author: Hei Tung SHEK

Co-Author(s): Ivan S.C. CHOW, Angie H.C. FONG, David HUNG, Phoebe LAM, Allie LEE, Christopher K.S. LEUNG, Kendrick C. SHIH

Purpose:

The Fundus Cataract-AI project aims to automate cataract diagnosis and grading using deep learning techniques applied to a single standard macula-centric fundus photo.

Methods:

A dataset was utilized, comprising 11544 fundus images from Chinese patients, aged 50 and above, from a cross-sectional random population-based study. 909 images of patients who underwent cataract surgery previously were removed from the dataset. Another 3674 images were excluded from the dataset due to poor image quality. The subjects underwent comprehensive eye assessment by an Ophthalmologist including presenting visual acuity (PVA), best-corrected visual acuity (BCVA), automatic and subjective refraction, IOP, slit-lamp examination of the anterior segment and funduscopic examination of the posterior segment. Fundus photography was performed using the Eidon Fundus Camera. The images were categorized into three classes: ‘normal’, ‘early cataract’, ‘visually significant cataract’ based on face-to-face assessment by the Ophthalmologist and BCVA. A ResNet152 convolutional neural network, pretrained and fine-tuned via transfer learning, was employed for classification. The dataset was split into training (60%), validation (20%) and testing (20%) sets. To address class imbalance, weighted sampling and transfer learning strategies were applied. Main outcome measure was area under the curve (AUC) with accuracy, sensitivity and specificity.

Results:

6961 images were used for the dataset in total. The distribution of ‘normal’, ‘early cataract’ and ‘visually significant cataract’ was 31.7%, 45.9% and 13.0% respectively. The preliminary model demonstrated an overall performance accuracy of 75%.

Conclusions:

Machine learning may be able to accurately assist in the diagnosis and grading of cataracts using fundus photos alone.

Abstract No.: 200110

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N206-208

Relationship Between Ocular Surface Signs and Self-Reported Dry Eye Symptoms in Substance Abusers: Implications for Screening and Understanding Neurological Pathways

First Author: Kit Wai LIANG

Co-Author(s): Calvin Cp PANG, Clement Cy THAM, Kelvin Kl CHONG

Purpose:

This study investigates the relationship between dry eye signs and symptoms in substance abusers.

Methods:

Substance abusers(n=40) with regular use of cocaine, methamphetamine, or other drugs within the last 24 months were recruited. Ocular signs were assessed through OCULUS_Keratograph_5M, TearScienceTM LipiViewTM II Interferometer, Schirmer's test (ST) and Slit-lamp examination. Symptoms were measured by Ocular Surface Disease Index (OSDI). Spearman's partial correlation adjusting for covariates, including age and gender, was performed between signs and symptoms. Subjects were divided into a Normal Symptom Group (NSG) with OSDI<13(n=12) and an Abnormal Symptom Group (ASG) with OSDI≥13(n=28). The median differences in signs between groups were compared using the Mann-Whitney test. Only the right eyes are included.

Results:

Only demodex cylindrical lash significantly correlated with OSDI (r=-0.44, p=0.006). Mann-Whitney tests indicated that Lipid Layer Thickness Average(median: 25 vs. 65 , z=2.649, p=0.007, r=0.429) and Lipid Layer Thickness Minimum(median: 23 vs. 59, z=2.74, p=0.005, r=0.444) were significantly lower in NSG than ASG. NSG also exhibited poorer result among Lipid Layer Thickness Maximum(median: 35 vs. 81), ST(median: 2 vs. 7), Non Invasive Keratograph Break Up Time 1st(median: 2.68 vs. 4.47), Non Invasive Keratograph Break Up Time Average(median: 2.80 vs. 10.05), Bulbar Conjunctival Hyperemia(median: 2.00 vs. 0.95), Meiboscore Lower Lid(median: 2.00 vs. 1.00), Tear Film Break Up Time(median: 1.42 vs. 3.97), and Meibomian capping(median: 2.00 vs. 1.00) than ASG, but not statistically significant(all p>0.05).

Conclusions:

Dry eye signs and symptoms in substance abusers are generally uncorrelated, emphasizing the need for dry eye screening. Lower Lipid Thickness could be a more sensitive indicator of dry eye changes even when symptoms are not reported. Substance abuse might have a potential effect on the neurosensory pathway related to dry eye sensation, causing a reduced awareness of symptoms. Further investigation is essential to explore the mechanisms.

Abstract No.: 200219

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N206-208

Summary of femtosecond laser-assisted cataract surgery in Kowloon East Cluster

First Author: Lok Man Tiffany YEUNG

Co-Author(s): Wing Man HO, Yi Han LAU, Kai Wang Kenneth LI, Anita Lai Wah LI,

Purpose:

An interim report of femtosecond laser-assisted cataract surgeries (FLACS) performed in Kowloon East Cluster between 8/2023 and 1/2024.

Methods:

Among a total of 61 cases of FLAC cases, we compared the operation time, total cumulative dissipated energy (CDE), visual outcome and complication rates with the Royal College of Ophthalmologists' National Ophthalmology Database study of cataract surgery reported in United Kingdom.

Results:

FLACS is a precise and reproducible technique with comparable anterior chamber rim tear and posterior capsule rupture rates as traditional phacoemulsification cataract surgery. It has a comparable visual outcome and refractive status and is a safe procedure to perform with a short operation time and low CDE. We identified several limitations of FLACS including the dependence of patient factor, machine factor and a steep learning curve.

Conclusions:

FLACS is a precise, reproducible technique with comparable complication rate, visual outcome and is a safe procedure to perform with a short operation time and low CDE.

Abstract No.: 200140

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N206-208

Corneal Endothelial Cell Density and Morphology of Filipino Patients in a Tertiary Level Hospital

First Author: Julia Mercedes VILLALVA

Purpose:

This paper aims to identify patients' demographics in a tertiary hospital with comorbidities such as diabetes mellitus and hypertension and compare it with age-matched controls. Previous studies that described the relationship between healthy individuals and those with comorbidities show contradicting results. This study hopes to clarify the correlation using our local data. Providing such a correlation will urge Filipino ophthalmologists to take extra care in the population of patients with corneal surface disease abnormalities since treatment can avoid irreversible vision problems that can only be treated surgically.

Methods:

This study identified the demographics and corneal endothelial cell density and morphology of diabetic and hypertensive patients 20-83 years old who underwent specular microscopy in one center from January 2021 to January 2023 and compared it with an age-matched control.

Results:

There was no significant correlation between mean cell density, coefficient of variation, and hexagonality in patients with either of the comorbidities and those without across all age groups. However, for patients 60 years old and above, endothelial cell count decreased by an average of 0.78% (18.8003 cells/mm2), and percent hexagonality decreased by an average of 28.2% (-13.31%) compared to age-matched control. The majority of the population with comorbidities was noted to belong to this age group.

Conclusions:

It is highly recommended to include careful evaluation of the corneal endothelium as part of the diabetic and hypertensive patient's eye screening, especially in pre-operative examination.

Abstract No.: 200166

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N206-208

Comparison of outcomes of primary and secondary sutureless scleral fixated intraocular lens implantation in adult patients

First Author: Lok Man Tiffany YEUNG

Purpose:

To evaluate and compare results of primary and secondary sutureless scleral fixated intraocular lens (SFIOL) implantation in adult patients.

Methods:

A retrospective analysis of SFIOL implanted during (primary group) or after (secondary group) cataract surgery was performed. Outcome measured were indications, corrected distant visual acuity, change in visual acuity and complications.

Results:

Visual acuity improved by at least 1 snellen line or remain unchanged in 18 eyes (85.7%) in the primary group and in 17 eyes (100%) in secondary group (p=0.132 and p=0.104 respectively). The difference between intraoperative, early and late complications were not statistically significant between primary and secondary groups (p=0.337, p=0.984, p=0.198 respectively). Regarding late complications, 95.2% in primary group and 82.4% in secondary group has no complications (p=0.198).

Conclusions:

Both primary and secondary sutureless scleral fixated intraocular lens implantation can provide favourable visual outcome.

Abstract No.: 200065

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

Effect of public health and social measures on the trend of acute conjunctivitis in Hong Kon

First Author: Tiffany WU

Co-Author(s): Francis Paul Cruz FLORES, Allie LEE, Michael NI, Hunter YUEN

Purpose:

During the COVID-19 pandemic, Hong Kong implemented one of the world's longest public health and social measures, lasting more than 3 years. We aim to investigate the change in incidence of acute conjunctivitis (AC) before COVID-19 (January 2015- January 2020), during COVID-19 (February 2020- February 2023) and after the easing of public health and social measures (March 2023- December 2023) in Hong Kong.

Methods:

Surveillance data on patients diagnosed with AC was collected from a tertiary hospital from January 2015 to December 2023. The number of "Corneal foreign body (CFB) removal" cases was used as negative control. Google Trend data on AC and chalazion in HK and US were collected. A 6-month moving average time series analysis was used to study trends and a Pearson's coefficient was employed to examine correlations between trends of different variables.

Results:

A total of 5329 AC cases and 4252 CFB removal cases were included. The number of AC cases decreased significantly during COVID-19 and showed an upward trend once public health measures were loosened. A strong correlation between AC cases and AC Google searches was found, with p-value <0.05. In contrast, our negative control (CFB removal cases) demonstrated a concurrent rise and was not affected by the implementation of anti-epidemic measures.

Conclusions:

The prevalence of AC is impacted by public health measures. This has an implication on implementing effective infection control measures to reduce the incidence of AC in our locality.

Abstract No.: 200069

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

Efficacy of Intense Pulse Light Therapy as the Treatment in Patients with Meibomian Gland Dysfunction : A Retrospective Cohort Study

First Author: Yi Lam WONG

Co-Author(s): Julia Yy CHAN, Vanissa Ws CHOW

Purpose:

The study aimed to evaluate the efficacy and clinical benefits of intense pulse light (IPL) therapy against life-style modification alone for patients with meibomian gland dysfunction (MGD) in the Han Chinese population.

Methods:

28 consecutive subjects with MGD who received 3 sessions of IPL is compared against age and sex matched MGD subjects received life-style modification only . Subjective parameters (Ocular Surface Disease Index (OSDI), Standard Patient Evaluation of Eye Dryness Questionnaire (SPEED) and objective parameters (Tear break up time (TBUT), Schirmer's test, corneal staining score, conjunctival bulbar redness, total number of expressible meibomian gland, tear film lipid layer thickness, lid closure analysis) are compared before and after treatment and between the two groups.

Results:

The baseline demographic data and dry eye parameters of the two groups are comparable statistically. There is a statistically significant improvement in both subjective and objective parameters were observed in patients received 3 sessions of IPL compared with life-style modification alone. No serious adverse reaction was documented.

Conclusions:

IPL serves as a novel, safe and effective treatment option in the management of MGD compared to life-style modification.

Abstract No.: 200133

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

Paracentral Acute Middle Maculopathy (PAMM) after Vaccination – A Literature Review

First Author: Sin Ki YEUNG

Co-Author(s): Chi Lik AU

Purpose:

Paracentral acute middle maculopathy (PAMM) was first described in 2013. This is the first review on the development of PAMM after vaccinations and the proposed mechanisms.

Methods:

Literature search was conducted on 30 June 2024 using PubMED and MEDLINE advanced search engines, using keywords “Paracentral acute middle maculopathy” and “Vaccination”. Vaccine type, dose, interval between vaccination and symptom presentation, best-corrected visual acuity (BCVA) were extracted. Wilcoxon test were used to compare BCVA at presentation and follow-up. Mann-Whitney U test were used to compare interval of mRNA and non-mRNA vaccines.

Results:

We identified 44 references, 13 cases from 13 studies met the inclusion criteria for full review. The most reported vaccine type is COVID vaccine (n=9), most commonly Pfizer-BioNTech mRNA vaccine (n=5). The patients ranges from children to elderly (Mean age = 37.5, Female: Male =7:5). Most cases presented with unilateral scotoma with full or mildly impaired BCVA (Mean = 0.3, SD=0.54). More than half (54%) presented with logMAR 0 or better BCVA. The interval from vaccination to presentation ranges from 0 to 40 days (Mean = 11.9 days, SD=13.8), more than half (58.3%) of the cases presented within a week, only 1/3 presented within 1 day. No significant difference between intervals of mRNA and non-mRNA vaccines (p=0.935). Most showed improvement upon follow up (Z= -0.447, p=0.655). Given the short interval to presentation, proposed mechanisms were autoimmune responses, such as molecular mimicry and immune-complex related, leading to ischemia in retinal vessels.

Conclusions:

PAMM is one of the autoimmune retinal vascular events after vaccination.

Abstract No.: 200245

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

The association between socio-behavioral variables and visual impairment among the Chinese elderly: A Population-based Cross-Sectional Study

First Author: Hoi Ching PANG

Co-Author(s): Ivan CHOW, Phoebe LAM, Jordy LAU, Allie LEE, Christopher K.S. LEUNG, Kendrick SHIH, Perseus WONG, Angie FONG

Purpose:

Our objectives were to examine for associations between socio-behavioral variables and visual impairment in Chinese subjects 50 years and older, and also estimate the age-and-gender-adjusted rate of visual impairment in this population.

Methods:

This was a population-based cross-sectional survey. We included subjects were local Chinese residents aged ≥50, and scoring ≥7 in the Abbreviated Mental Test score. The fieldwork included a comprehensive eye examination, body measurements, and questionnaires on martial status, housing condition, overnight work and smoking status and were carried out from 20th May 2019 to 24th January 2020.

Results:

Of the 2665 included subjects, those aged ≥80 (vs 50-59: AOR 1.040, 95% CI 1.025-1.054), being widowed (vs unmarried: AOR 1.011, 95% CI 1.001-1.022), living in rental estate (vs private housing: AOR 1.089, 95% CI 1.050-1.129), with VFL ≥13 (vs ≤12: AOR 1.006, 95% CI 1.000-1.012), attributed to the 3rd quartile of working overnight (vs never worked overnight: AOR 1.013, 95% CI 1.002-1.024), and the 4th quartile of cigarettes-smoking (vs never smoked: AOR 1.044, 95% CI 1.017-1.073) had significantly worse visual acuity (BCVA). Comparing pinhole VA with best corrected VA, there was a significant decrease in the age-and-sex adjusted rate from 7.99% (6.42-9.95) to 0.83% (0.30-1.91).

Conclusions:

Worse visual acuity was highest among cigarette-smokers, followed by night-shift workers in the Chinese elderly, with increased AORs in the high-risk groups of age ≥70, BMI ≥25, hypertension, and VFL ≥13. We propose investigating adequacy of access to eye-care services in low socioeconomic areas of Hong Kong, and conducting longitudinal studies for follow-up.

Abstract No.: 200231

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

The epidemiology, clinical signs and viral load in quantitative polymerase chain reaction (qPCR)-confirmed acute adenoviral conjunctivitis in Hong Kong

First Author: Phoebe LAM

Co-Author(s): Khant Nyar AUNG, Alex KAN, Welchie KO, Allie LEE, Michael NI, Siddharth SRIDHAR, Jenny WANG, Hunter YUEN

Purpose:

To compare the difference in clinical presentation and demographics between acute conjunctivitis patients confirmed adenovirus-positive and -negative on qPCR, and to analyze the relationship of viral load with various clinical parameters

Methods:

This is a cross-sectional study on acute infectious conjunctivitis diagnosed clinically by ophthalmologists in Hong Kong. Patients aged 18 years or above with onset of symptoms within 14 days and at least one eye displaying signs of conjunctivitis were recruited across 3 regional hospitals. Severity scores were given for their conjunctival injection, colour and severity of discharge. Conjunctival swabs were collected for adenovirus qPCR and multiplex nested PCR for other respiratory viruses.

Results:

120 subjects were recruited, and 110 were included in the final analysis. They averaged 51 years old (range 19-88,SD=18), with a male: female ratio of 1:1.3. 24 (21.8%) patients tested positive for adenovirus, who presented with significantly more severe conjunctival redness (grade 3) compared to adeno-negative patients $X2(1,N=110)=7.09$, $p=.00775$; they were also significantly more male-predominant $X2(1,N=110)=7.19$, $p=.00733$, and were significantly younger ($M=41,SD=14$) than adeno-negative patients ($M=54,SD=18$), $t(111)=-3.42$, $p=.000439$. The viral load was found to correlate negatively with the purulence and amount of discharge [$F(1,19)=7.35$, $p=.00982$], and negatively with the degree of conjunctival injection [$F(1,19)=7.35$, $p=.00982$].

Conclusions:

Adenoviral-positive acute conjunctivitis displayed more severe conjunctival injection and had a predilection for male young adults. An increased viral load was associated with less copious but more watery than purulent discharge.

Abstract No.: 200213

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

Efficacy and safety of adjunctive mitomycin C in Ahmed glaucoma valve implantation in a Chinese population

First Author: Anthony Chuk Him LAI

Co-Author(s): Oi Man WONG

Purpose:

To evaluate the efficacy and safety of the use of mitomycin C (MMC) in implantation of Ahmed glaucoma valve (AGV) in a Chinese population

Methods:

Consecutive cases of AGV implantation with or without MMC augmentation performed at Hong Kong Eye Hospital from 2017 to 2023 with one year follow-up were retrospectively reviewed. Percentage intraocular pressure (IOP) and medication reduction, treatment success and complications were compared between two groups. Treatment failure was defined as the first occurrence of any of the following: intraocular pressure (IOP) >21, >18 mmHg, less than 20% reduction below baseline, or <6 mmHg on 2 consecutive 3-monthly visits after 3 months; reoperation for glaucoma; or loss of light perception.

Results:

Forty eyes of 37 patients were included in the study. Among them, 11 eyes (27.5%) received augmentation with 0.4mg/ml MMC for 3 minutes. The percentage reduction in IOP at 6 months and 1 year were both significantly greater in the MMC group compared with non-MMC group (Median % IOP reduction at 6 months: 55.88% versus 30.43%, p= 0.003; 1 year: 54.84% vs 38.10%, p= 0.009, respectively, Mann-Whitney U test). Kaplan-Meier analysis using IOP >21 mmHg or >18 mmHg as definition of failure showed a tendency of longer survival in MMC group, but did not reach statistical significance (Logrank test; p= 0.115 and 0.106, respectively). There was no sight-threatening complication in both groups

Conclusions:

AGV implantation achieved larger percentage IOP reduction when augmented with MMC in Chinese population.

Abstract No.: 200266

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

Factors associated with post-selective laser trabeculoplasty (SLT) intraocular pressure (IOP) spike

First Author: Shui King TSOI

Co-Author(s): Chi Ho Thomas LAM, Oi Man WONG

Purpose:

Intraocular pressure(IOP) spike is a common complication after selective laser trabeculoplasty(SLT). This study aims to identify factors associated with post-SLT IOP spike to enhance safety.

Methods:

Retrospective chart review of 145 consecutive patients who underwent SLT in a local eye hospital between July 2021 to June 2023.

Results:

We included 218 eyes of 145 patients(mean age 64.84 years), with 178 eyes(81.65%) receiving one SLT. The most common diagnoses were primary open angle glaucoma(POAG)(67.4%), followed by normotension glaucoma(NTG)(19.7%) and primary angle closure glaucoma(PACG)(7.8%). Baseline visual field(VF) mean deviation(MD) was -13.7dB, with 48.4% of eyes having advanced glaucoma(MD ≤-12dB). Mean pre- and post-SLT IOP and no. of IOP-lowering medications were 18.49 mmHg and 17.17mmHg, and 3.48 and 3.65 respectively(n=258, p<0.001 and <0.001 respectively, paired t-test). The mean %IOP reduction was 6.63%. Post-SLT IOP/no. of IOP-lowering medications/%IOP reduction were defined as the mean of measurements at 1-week and 1-month post-SLT.,,IOP spike(IOP elevation ≥ 5mmHg within 1 hour) occurred in 11.7% of eyes. Younger age(p<0.001), less negative MD(p<0.012), use of timolol instead of brimonidine immediately post laser(p=0.003), performance of SLT by trainees(p=0.023) were significant predictors of IOP spike by univariate analysis. IOP spike also positively correlated with higher total energy used, with borderline significance(p = 0.07). After accounting for inter-eye correlation and effect of multiple treatments with generalized estimating equation, total energy used and less negative MD were significant predictors (p<0.001 and p<0.001, respectively).

Conclusions:

IOP spike is not uncommon after SLT. Predictive factors include earlier stage of glaucoma and higher total energy.

Abstract No.: 200034

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

In Vivo Confocal Microscopy (IVCM) Analysis of Corneal Sub-basal nerve plexus (SNP) and corneal sensitivity after Micropulse Transscleral Cyclophotocoagulation (MP-TSCPC) in glaucoma patients

First Author: Ho Ming WONG

Co-Author(s): Noel Ching-yan CHAN, Ka Wai KAM, Shuet Yan POON, Lok Yee TSUI, Alvin L. YOUNG

Purpose:

To investigate the clinical outcome of micropulse transscleral cyclophotocoagulation (MP-TSCPC) and its effect on corneal sensitivity, as well as corneal nerve parameters using in vivo confocal microscope (IVCM) in eyes with glaucoma.

Methods:

This was a prospective longitudinal study recruiting consecutive glaucoma patients who were scheduled to undergo MP-TSCPC for intraocular pressure (IOP) control in a tertiary center. Pre-operative and postoperative clinical parameters were compared including: best-corrected visual acuity, IOP, number of topical glaucoma medication, requirement of oral acetazolamide and corneal sensitivity. Intraoperative and postoperative complications were recorded. Pre-operative and postoperative corneal nerve parameters measured using IVCM were analysed in both operated and non-operated eye. All clinical and imaging parameters were compared longitudinally between baseline, postoperative 2 weeks and 1 month.

Results:

Twenty consecutive glaucoma patients who received MP-TSCPC between January 2024 and May 2024 were recruited. Postoperatively, there was a significant reduction in IOP (p=0.000) and oral acetazolamide use (p=0.001) while visual acuity were maintained (p=0.710). However, there were reduced corneal sensitivity (p=0.014), decrease in corneal nerve fibre density (CNFD) (p=0.017) and corneal nerve branch density (CNBD) (p=0.047) as detected by ICVM from baseline to 1 month in the operated eye.

Conclusions:

MP-TSCPC is an effective glaucoma treatment in terms of IOP control and reduction of glaucoma medications. However, it may potentially result in reduced corneal sensitivity, corneal nerve fiber density and branch density at postoperative 1 month.

Abstract No.: 200272

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

Neurotrophic keratopathy after transscleral cyclophotocoagulation in neovascular glaucoma patients - a retrospective observational study

First Author: Sze Wai Venice LI

Co-Author(s): Chi Ho Thomas LAM, Ho Lam WONG

Purpose:

Neurotrophic keratopathy is a rarely reported but vision-threatening complication of transscleral cyclophotocoagulation (TSCPC), especially in patients with reduced corneal sensation, such as neovascular glaucoma (NVG). This retrospective study examines the occurrence of corneal epithelial defects (ED) and their outcomes in NVG patients undergoing micropulse cyclophotocoagulation (MPCPC) and slow coagulation G-probe.

Methods:

We conducted a retrospective chart review of consecutive NVG patients who received TSCPC, including MPCPC and G-probe, at a local eye hospital from January 2023 to June 2024.

Results:

A total of 76 TSCPC episodes in 49 NVG patients were analyzed. Underlying causes included central retinal vein occlusion, proliferative diabetic retinopathy, and ocular ischemic syndrome. Of the 76 eyes, 59 (77.6%) underwent MPCPC, and 17 (22.4%) received G probe treatment; 20 eyes (40.1%) had multiple procedures. Corneal epithelial defects occurred in 13 eyes (22%) after MPCPC and 2 eyes (11.8%) after G probe. Persistent defects developed in 11 eyes (73.3%), with a mean healing time of 74.2 days. All affected eyes received topical antibiotics; 11 had bandage contact lenses, and 4 received antiviral treatment. One case developed infectious keratitis and required amniotic membrane treatment, while another required anterior chamber tapping due to severe inflammation. Univariate analysis identified male gender, history of prior epithelial defects, and higher energy in MPCPC as significant predictors of ED occurrence ($p<0.05$).

Conclusions:

Neurotrophic keratopathy is an under-reported complication of TSCPC in NVG patients, particularly following MPCPC. High-risk patients include males, history of epithelial defects, and MPCPC with higher energy.

Abstract No.: 200175

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N202+N203

To scan or not to scan? That is the question. How useful is computed tomography in identifying intracranial space-occupying lesions mimicking NTG?

First Author: Leo Ka Yu CHAN

Co-Author(s): Chi Ho Thomas LAM

Purpose:

Neuroimaging is commonly performed in normal tension glaucoma (NTG) patients to rule out compressive optic neuropathy secondary to intracranial space-occupying lesions (SOLs). In the public settings, computed tomography (CT) of the brain and orbit is often the investigation of choice. This retrospective study aims to evaluate the prevalence of pathologies identified on CT scans in NTG patients.

Methods:

CT reports of 1,084 patients were reviewed retrospectively.

Results:

Among the 1084 patients, 526 NTG patients (48.5%) underwent CT scans to exclude SOLs. In this group, 119 patients (22.6%) exhibited positive findings: 4 patients (0.76%) had SOLs that directly compromised the optic pathway, all of which were suprasellar lesions. Other significant findings included small vessel disease in 72 patients (13.7%) and incidental SOLs, such as meningiomas, in 49 patients (9.3%). Among the 4 patients with suprasellar masses, features that argued against a diagnosis of glaucoma included relatively low intraocular pressure (IOP) at presentation (mean: 13.9 mmHg), atypical visual field (VF) loss and asymmetrical VF defects or retinal nerve fiber layer (RNFL) thinning.

Conclusions:

The low incidence of optic pathway SOLs in NTG (<1% in our cohort) indicates that neuroimaging should be reserved for atypical glaucoma presentations, such as younger age, low IOP, atypical or asymmetrical VF defects, advanced VF loss or RNFL thinning at presentation, lack of structure-function correlation, and signs of optic neuropathy in the absence of typical glaucomatous optic disc morphology. Routine neuroimaging is not recommended for NTG patients.

Abstract No.: 200273

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

A new MRI biomarker for idiopathic intracranial hypertension

First Author: Lihua HOU

Co-Author(s): Xiaoyu WANG, Quangang XU

Purpose:

The oculomotor cistern (OMC) is a small CSF-filled and dural cuffed space that surrounding the third cranial nerve (CN III). In this article, we present a new measurement of the oculomotor nerve sheath in brain magnetic resonance imaging (MRI) and demonstrate its relevant role for the diagnostic with raised intracranial pressure (ICP).

Methods:

The coronal section of brain MRI of 18 patients with idiopathic intracranial hypertension (IIH) and 34 patients with normal intracranial pressure (control group) from July 2023 to July 2024 were used and measured. The cross-sectional area of the OMC and the area of oculomotor never at the pituitary stalk plane was measured, and the oculomotor nerve sheath were calculated by subtracting these two areas. The specificity and sensitivity of the area of the oculomotor nerve sheath were analyzed. Receiver operating curve (ROC) was used to test the predictive efficacy of oculomotor nerve sheath area in IIH.

Results:

The cross-sectional area of the oculomotor nerve sheath in the pituitary stalk plane was 15.70±9.03 mm2 in the IIH group and 6.08±1.50 mm2 in the control group, which was statistically significant ($t=4.49$, $P < 0.001$). ROC of the pituitary stalk plane was 0.961 (95%CI=0.916~1, $P < 0.001$). When the optimal critical value was 7.045 mm2, the sensitivity and specificity were 100% and 82.4%.

Conclusions:

The area of oculomotor nerve sheath is effective in predicting increased ICP. We recommend that this finding might be a new MRI biomarker of raised ICP.

Abstract No.: 200178

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

A new surgical procedure using “trigeminal-facial nerve neural circuit blocking” - Report of 47 patients with failed deep brain stimulation therapy for Meige patients with blepharospasm

First Author: Gang LIU

Co-Author(s): Qiangying GUO, Lili SHANG, Jie XIANG, Zhen XU, Shangyi YU

Purpose:

To investigate the safety and efficacy of “trigeminal-facial nerve neural circuit blocking” to treat Meige patients with blepharospasm after failed deep brain stimulation (DBS).

Methods:

47 Meige syndrome patients were recruited after failed DBS treatment from 24 hospitals in China. All patients underwent “trigeminal-facial nerve neural circuit blocking” procedure. Before and after surgery, the Burke-Fahn-Marsden Dystonia Rating Scale (BFMDRS) was used to score the symptoms of ocular and oral dystonia. The degree of blepharospasm improvement was calculated based on the ratio of post-op over pre-op scores.

Results:

The onset of disease was 5 yrs (1.5-20 yrs) before coming to our hospital with post-op average follow-up 20 months (6-55 months). There was significant difference in the BFMDRS scores of ocular dystonia [8.0(8.0,8.0) vs. 0.0(0.0,1.0), $P<0.001$] before and after surgery. Meanwhile, the total score of BFMDRS (including eye, mouth, speech and swallowing, neck dystonia) was significantly different before and after surgery[12.0(10.0, 15.0) vs. 1.0(0.0, 3.0), $P<0.001$]. The degree of post-op improvement of blepharospasm was 100%, and 90% improvement of eye, mouth, speech, swallowing and neck symptoms. The side effects included general forehead numbness and ectropion of lower eyelid. No major systemic or corneal side effects.

Conclusions:

“Trigeminal-facial nerve neural circuit blocking” procedure is safe and effective for Meige syndrome with blepharospam and suitable for patients with failed previous treatment of DBS.

Abstract No.: 200273

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

A new MRI biomarker for idiopathic intracranial hypertension

First Author: Lihua HOU

Co-Author(s): Xiaoyu WANG, Quangang XU

Purpose:

The oculomotor cistern (OMC) is a small CSF-filled and dural cuffed space that surrounding the third cranial nerve (CN III). In this article, we present a new measurement of the oculomotor nerve sheath in brain magnetic resonance imaging (MRI) and demonstrate its relevant role for the diagnostic with raised intracranial pressure (ICP).

Methods:

The coronal section of brain MRI of 18 patients with idiopathic intracranial hypertension (IIH) and 34 patients with normal intracranial pressure (control group) from July 2023 to July 2024 were used and measured. The cross-sectional area of the OMC and the area of oculomotor never at the pituitary stalk plane was measured, and the oculomotor nerve sheath were calculated by subtracting these two areas. The specificity and sensitivity of the area of the oculomotor nerve sheath were analyzed. Receiver operating curve (ROC) was used to test the predictive efficacy of oculomotor nerve sheath area in IIH.

Results:

The cross-sectional area of the oculomotor nerve sheath in the pituitary stalk plane was 15.70±9.03 mm2 in the IIH group and 6.08±1.50 mm2 in the control group, which was statistically significant ($t=4.49$, $P < 0.001$). ROC of the pituitary stalk plane was 0.961 (95%CI=0.916~1, $P < 0.001$). When the optimal critical value was 7.045 mm2, the sensitivity and specificity were 100% and 82.4%.

Conclusions:

The area of oculomotor nerve sheath is effective in predicting increased ICP. We recommend that this finding might be a new MRI biomarker of raised ICP.

Abstract No.: 200178

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

A new surgical procedure using “trigeminal-facial nerve neural circuit blocking” - Report of 47 patients with failed deep brain stimulation therapy for Meige patients with blepharospasm

First Author: Gang LIU

Co-Author(s): Qiangying GUO, Lili SHANG, Jie XIANG, Zhen XU, Shangyi YU

Purpose:

To investigate the safety and efficacy of “trigeminal-facial nerve neural circuit blocking” to treat Meige patients with blepharospasm after failed deep brain stimulation (DBS).

Methods:

47 Meige syndrome patients were recruited after failed DBS treatment from 24 hospitals in China. All patients underwent “trigeminal-facial nerve neural circuit blocking” procedure. Before and after surgery, the Burke-Fahn-Marsden Dystonia Rating Scale (BFMDRS) was used to score the symptoms of ocular and oral dystonia. The degree of blepharospasm improvement was calculated based on the ratio of post-op over pre-op scores.

Results:

The onset of disease was 5 yrs (1.5-20 yrs) before coming to our hospital with post-op average follow-up 20 months (6-55 months). There was significant difference in the BFMDRS scores of ocular dystonia [8.0(8.0,8.0) vs. 0.0(0.0,1.0), $P<0.001$] before and after surgery. Meanwhile, the total score of BFMDRS (including eye, mouth, speech and swallowing, neck dystonia) was significantly different before and after surgery[12.0(10.0, 15.0) vs. 1.0(0.0, 3.0), $P<0.001$]. The degree of post-op improvement of blepharospasm was 100%, and 90% improvement of eye, mouth, speech, swallowing and neck symptoms. The side effects included general forehead numbness and ectropion of lower eyelid. No major systemic or corneal side effects.

Conclusions:

“Trigeminal-facial nerve neural circuit blocking” procedure is safe and effective for Meige syndrome with blepharospam and suitable for patients with failed previous treatment of DBS.

Abstract No.: 200248

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Analysis of Intracranial Pressure Evaluation by Immersion Ophthalmic Ultrasound Measurement of Optic Nerve Sheath Diameter.

First Author: Jia MA

Purpose:

To measure Optic Nerve Sheath Diameter (ONSD) through immersion ophthalmic ultrasound to reflect the change of Intracranial Pressure (ICP) and to distinguish the optic disc edema caused by high ICP.

Methods:

Prospective case-control study. The average ONSD of 3-5mm were measured at the 3, 4, 5mm behind the eyeball in order to reduce the interference of eye rotation, in those patients of normal or high ICP, and those of optic disc edema caused by optic neuritis or high ICP, and the optimal cutoff value for the diagnosis of optic disc edema due to high ICP was determined through ROC.

Results:

The average ONSD of 3-5mm behind the eyeball indirectly reflected ICP changes, which was 3.92±0.41mm in the normal ICP group, 4.68±0.56mm in the high ICP group, and 4.18±0.55mm in optic papillitis. The average ONSD was significantly positively correlated with ICP ($r=0.64$, $P<0.05$) ($Y=78.17X-140.4$). The optimal critical value of the average ONSD by ROC was 4.40mm for diagnosing high ICP, and 4.15mm for distinguishing the optic disc edema caused by high ICP or optic papillitis.

Conclusions:

The average ONSD and other related indices at 3-5mm behind the eyeball through immersion ophthalmic ultrasound are new methods for evaluating elevated ICP non-invasively, repeatably and effectively.

Abstract No.: 200276

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Clinical Features and Visual outcomes of Optic Neuritis in Chinese population: a 5-year retrospective study in Hong Kong

First Author: Ming Ming ZHU

Co-Author(s): Noel Ching-yan CHAN, Sophia LI, Chun Yue Andrew MAK

Purpose:

As optic neuritis (ON) in Chinese population may present differently than described in Western literature, this study aims to review the clinical features and visual outcomes of ON in Hong Kong.

Methods:

Retrospective medical chart review of all patients diagnosed with demyelinating ON between 2019 and 2023 at a tertiary hospital in Hong Kong was conducted.

Results:

Seventy-nine cases (106 eyes) were identified, involving 66 females (83.5%) with a mean age of 40.9 ± 18.3. Underlying causes of ON included multiple sclerosis (13 cases), aquaporin-4-IgG-positive neuromyelitis optica spectrum disorder (AQP4+NMOSD) (24 cases), seronegative NMOSD (6 cases), myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD) (7 cases), idiopathic (25 cases) and post infection/vaccination (4 cases). The mean presenting LogMAR visual acuity (VA) was 1.47 ± 1.0, while eye pain (41 eyes) or papilledema (31 eyes) were uncommon, with 27 cases suffering bilateral involvement. Seventy-six patients received intravenous pulse steroids, and 8 requiring additional plasma exchange. Patients with AQP4+NMOSD had worse presenting VA of 2.11 ± 1.04 ($p < 0.05$), but a similar final VA of 0.83 ± 1.1 ($p > 0.05$). During follow-up period (73 ± 72.5 months), 25 patients experienced recurrence. Among 10 recurrent AQP4+NMOSD cases, 7 showed no further relapse for 98.9 ± 51.2 months while on maintenance immunosuppressive medications.

Conclusions:

AQP4+NMOSD is one of the most common types of demyelinating ON identified in Hong Kong Chinese population. The availability of early antibody testing and prompt initiation of appropriate treatment have shown improved visual outcomes and reduced relapse rates.

Abstract No.: 200169

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Clinical Features of COVID-19-Related Optic Neuritis: A Retrospective Study

First Author: Ling-ping CEN

Co-Author(s): Tai-ping LI, Yun WANG, Fang-fang ZHAO

Purpose:

This study aimed to investigate the clinical features of optic neuritis associated with COVID-19 (COVID-19 ON), comparing them with NMO-ON, MOG-ON, and antibody-negative ON.

Methods:

Data from 117 patients (145 eyes) with optic neuritis at the Shantou International Eye Center (March 2020-June 2023) were categorized into four groups based on etiology: Group 1 (NMO-ON), Group 2 (MOG-ON), Group 3 (antibody-negative ON), and Group 4 (COVID-19 ON). Characteristics of T2 and enhancement in orbital magnetic resonance imaging (MRI) were assessed. Best-corrected visual acuity (BCVA) was compared before treatment, at a short-term follow-up (14 days), and at the last follow-up after treatment.

Results:

The COVID-19 ON group displayed 100% bilateral involvement, significantly surpassing other groups ($P < 0.001$). Optic disc edema was observed in 100% of COVID-19 ON cases, markedly differing from NMO-ON ($P = 0.023$). Orbital MRI revealed distinctive long-segment lesions without intracranial involvement for the COVID-19 ON group compared to the other groups ($P < 0.001$). Before treatment, no significant difference in BCVA existed between the COVID-19 ON group and other groups. At the 14-day follow-up, BCVA in the COVID-19 ON group outperformed NMO-ON ($P < 0.001$) and antibody-negative ON ($P = 0.028$), with no significant difference compared to MOG-ON group. At the last follow-up after treatment, BCVA in the COVID-19 ON group significantly differed from NMO-ON ($P < 0.001$).

Conclusions:

COVID-19 O predominantly presents with bilateral onset and optic disc edema. Orbital MRI demonstrates that COVID-19 ON presents as long-segment enhancement without involvement. Glucocorticoid therapy showed positive outcomes.

Abstract No.: 200077

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Methanol Toxic Optic Neuropathy During Coronavirus Disease Of 2019 Pandemic In Indonesia

First Author: Keysha ABIGAIL

Co-Author(s): Antonia INDRIATI, Dedeh SUPANTINI, Abraham SUTJIONO

Purpose:

To describe the characteristics of methanol toxic optic neuropathy during coronavirus disease of 2019 pandemic in Indonesia.

Methods:

A retrospective descriptive study was performed on methanol toxic optic neuropathy medical records from March 2020 until March 2021.

Results:

Twenty seven patients were included in this study. Most of the patients were 26-35 years (40.7%) and all patients were male (100%). In most cases, the onset of vision loss is found at >24 hours (81.5%). The interval between drinking alcohol and therapy in most cases was at 2 days-1 week (55.6%). Most patient's initial visual acuity was between <1/60 - light perception. In 51.9% cases showed optic disc swelling.

Conclusions:

All patients were male between the ages of 26-35 years. In most cases, loss of visual acuity mostly occurred >24 hours after exposure to alcohol and received treatment 2 days-1 week after consuming alcohol. Most funduscopy examinations showed optic disc swelling.

Abstract No.: 200083

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Ocular manifestations and outcomes of carotid cavernous fistulas: A 10-year retrospective study

First Author: Suwichaya MUKMONTHIEN

Co-Author(s): Chatchawal ARAMRAT, Juthamat WITTHAYAWEERASAK

Purpose:

Evaluation of ocular manifestations for carotid cavernous fistula (CCF) and analyzed predictive factors associated with clinical outcomes

Methods:

In total 135 patients, diagnosed with CCF at Songklanagarind hospital; Southern Thailand, were included in the retrospective study. The clinical characteristics and treatment outcomes were reviewed at baseline and within a 1-year follow-up period.

Results:

From 143 eyes with angiographic confirmation of CCF, 47 eyes (47 patients) were direct type, and 96 eyes (88 patients) were indirect type. The most common ocular manifestations of both types were dilated episcleral vessels (90.2%), proptosis (75.5%), and diplopia (66%). Decreased vision, ocular bruit, and chemosis were more prevalent in direct fistula (P<0.05). Embolization was performed in 43 eyes (91.5%) of direct CCF and 51 eyes (53.1%) of indirect CCF. Final good visual acuity (VA≥20/40) after embolization and conservative treatment were achieved in 67.1% and 55.3%, respectively. Initial VA>20/200 (odds ratio (OR) 22.14, 95%CI 4.61, 106.38, P<0.001) and absence of hypertension (OR 2.46, 95%CI 1.03, 5.89, P=0.042) were significantly associated with good visual outcomes. Overall ocular symptoms after treatment were completely resolved in 42.6%. Predictive factors associated with complete recovery were time to diagnosis ≤ 30 days (OR 2.71, 95%CI 1.25, 5.90, P=0.012) and treatment with embolization (OR 2.79, 95%CI 1.14, 6.78, P=0.024)

Conclusions:

CCF can have varies ocular manifestations, depending on shunt classification. Taking history of underlying hypertension and initial VA should be considered for visual outcome prediction. Prompt diagnosis and embolization are indicated to prevent residual ocular symptoms after treatment.

Abstract No.: 200159

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Ofatumumab in AQP4-IgG-positive relapsing neuromyelitis optica spectrum disorders: An open-label pilot study

First Author: Yuyu LI

Purpose:

The purpose of this study was to evaluate the efficacy and safety of ofatumumab and to explore subcutaneous injection frequency based on the assessment of peripheral CD19+ B-lymphocyte counts over 17 months in patients with neuromyelitis optica spectrum disorders (NMOSD).

Methods:

Twelve patients with relapsing AQP4-IgG-seropositive NMOSD were enrolled in a prospective open-label trial in China. The patients were divided into three groups receiving regimens of monthly injections of ofatumumab or retreatment based on the assessment of peripheral CD19+ B-lymphocyte counts during the maintenance period. The primary end point was the annualised relapse rate. Secondary end points were expanded scores on the disability status scale and the safety of ofatumumab.

Results:

Of 12 patients, 11 showed a marked reduction in relapse rate during 17 months of taking ofatumumab. The median number of attacks per year fell from 1.5 before treatment to zero during treatment ($p < 0.001$). The mean pretreatment annualised relapse rate was 1.28, and the mean posttreatment annualised relapse rate was 0.17. The median expanded disability status score was 3 and remained unchanged after treatment. The median number of intervals in maintenance treatment was 75.5 (55–129) days. Two patients had fever within 3 hours of the first injection, with the highest temperature reaching 39 degrees, and it receded spontaneously. No severe drug-related adverse events occurred.

Conclusions:

Repeated monthly treatment with ofatumumab and interval retreatment while monitoring peripheral CD19+ B-lymphocyte counts both appeared to produce sustained efficacy with good safety in patients with AQP4-IgG-seropositive NMOSD.

Abstract No.: 200284

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Optic disc changes in Chinese patients with NLRP3-associated autoinflammatory disease

First Author: Yuezhu LU

Co-Author(s): Min SHEN, Weihong YU, Yong ZHONG

Purpose:

To investigate the optic disc changes (ODC) in Chinese patients with NLRP3-associated autoinflammatory disease (NLRP3-AID).

Methods:

Patients who were diagnosed with NLRP3-AID at the Department of Rheumatology, Peking Union Medical College Hospital between April 2015 and December 2022 were retrospectively reviewed and analyzed.

Results:

A total of 20 patients were enrolled in this retrospective study. All the 20 patients had a moderate MWS NLRP3-AID phenotype. Thirteen patients (65%) had ocular involvements. The incidence of hearing loss was significantly higher in patients with ocular involvement, while the incidence of abdominal pain was significantly lower when compared to patients without ocular involvement. Optic disc swelling (ODS) (50%) was the most common ODC. There was a significant difference between patients with/without ODS regarding the number of patients carrying T348M mutation. The occurrence of hearing loss and CNS involvement was significantly higher in the group with ODS compared to the group without. Of the eight patients who underwent lumbar puncture, five presented with intracranial hypertension (IH). ODS was observed in all patients with IH. The serum inflammatory markers were significantly higher in patients with ODS than in those without. Two patients receiving regular subcutaneous IL-1 inhibitor treatment showed improvements in ODC.

Conclusions:

ODC are common among Chinese patients with NLRP3-AID, with ODS being the most common manifestation. Hearing loss and CNS involvement often accompany the occurrence of ODS. The serum inflammatory markers are associated with ODS. The T348M mutation is more likely to lead to ODC with visual-field defects.

Abstract No.: 200060

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N202+N203

Treatment outcomes of isolated peri-ocular botulinum toxin A injection in hemifacial spasm compared with conventional injection : RCT non-inferiority crossover trial.

First Author: Phakinee RUEANGCHARIN

Co-Author(s): Niphon CHIRAPAPASISAN, Wanicha CHUENKONGKAEW, Akarawit EIAMSAMARNG, Manassawee JORADOLN, Yanee MUKDAR, Natthapon RATTANATHAMSAKUL

Purpose:

To evaluate the necessity of botulinum toxin A (BoNT-A) administration in the lower face of patients with hemifacial spasm (HFS).

Methods:

A randomized controlled non-inferiority crossover trial was conducted with 46 HFS patients (non-inferiority margin=1). Patients were randomized (1:1) into two sequences. Sequence 1 received isolated periocular BoNT-A injections, followed by conventional BoNT-A injections (periocular area and lower face area) after a 16-week washout period. Sequence 2 followed the reverse order. Outcome measures were assessed 4 weeks post-injection, comparing self-reported disease severity via the visual analog scale (VAS) for both the periocular and lower face regions between isolated periocular and conventional injections. Secondary outcomes included the Hemifacial Spasm Grading Scale (HSGS), the Samsung Medical Center grading system (SMC), the HFS questionnaire (HFS-30), and reports of adverse events.

Results:

Data from 43 patients were analyzed. Isolated periocular injections demonstrated non-inferiority compared to conventional injections. The VAS score for the periocular region was 0.488±0.140 for isolated injections versus 0.279±0.085 for conventional injections ($p < 0.01$). For the lower face, scores were 0.878±0.167 versus 0.582±0.113 ($p < 0.01$). No significant differences were noted in HSGS, SMC, or HFS-30 scores. Minor adverse events, such as dry eye and orbicularis oculi weakness, occurred with both techniques; however, mouth drooping was reported only with conventional injections.

Conclusions:

Isolated periocular injections provide comparable efficacy to conventional injections for controlling HFS while reducing pain, toxin usage, and side effects.

Abstract No.: 200039

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

A 17-year review of presumed giant cell arteritis (GCA) patients : ophthalmic manifestations and applications of the 2022 ACR/EULAR criteria.

First Author: Chatchawal ARAMRAT

Co-Author(s): Nipat AUI-AREE, Jirakit CHONGKAVINIT, Juthamat WITTHAYAWEERASAK

Purpose:

To study ophthalmic manifestations of patients with biopsy proven giant cell arteritis (GCA) compared with negative results of temporal artery biopsy (TAB). Additionally, to examine the performance of the 2022 American College of Rheumatology (ACR)/EULAR criteria for GCA in real-life settings.

Methods:

A 17-year review of 53 patients diagnosed with presumed GCA having undergone TAB at Songklanagarind hospital; Southern Thailand, were included in this study. The 2022 ACR/EULAR GCA criteria were evaluated and optimized to the patients according to the eye clinic setting.

Results:

Nineteen patients (35.9%) were biopsy proven GCA, with the most common ophthalmic manifestation in this group being anterior ischemic optic neuropathy (AION) (63.5%), followed by AION combine with central retinal artery occlusion (10.5%). The majority of patients (89.5%) had initial visual acuity of less than 20/200, and were significantly worse than the patients with negative pathology (P=0.025). Patients in the proven biopsy had more frequent history of weight loss than the unproven group (P=0.019). There were no differences of other systemic manifestations and initial laboratory investigations between TAB groups. According to our optimization of the new criteria with score≥6, it had a sensitivity of 94.7% and a specificity of 66.7% (AUC = 0.754).

Conclusions:

Applying the new criteria for GCA in routine settings, for elderly patients that have severe visual loss and ischemic ocular diseases, should undergo review of history for systemic GCA symptoms; including weight loss. Immediate laboratory investigations are mandatory to rule out GCA and TAB should be performed if suspicious GCA (score ≥6), until proven otherwise.

Abstract No.: 200192

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Analysis of structural injury patterns in macular superficial vessel density and retinal ganglion cell layer in ethambutol induced optic neuropathy

First Author: Wenyan SHENG

Purpose:

To investigate the changes in GCIPL(ganglion cell–inner plexiform layer) thickness, mVD(macular vessel density) and the relationship between them in patients receiving EMB(ethambutol) therapy for tuberculosis without recognisable clinical symptoms or signs of EON(ethambutol induced optic neuropathy).

Methods:

Sixty-four patients undergoing ethambutol treatment were recruited. Fourteen exhibited visual dysfunction (abnormal group), and the remaining 50 had no visual dysfunction (preclinical group). The thickness of the p-RNFL, GCIPL and mVD were measured using OCTA(optical coherence tomography angiography), and compared with 60 healthy, age-matched controls.

Results:

cCVD (Central circle mVD) was significantly lower in the EMB group than in control group (generalised estimating equation (GEE), p=0.003). The GCIPL thickness in the inferonasal and inferior sectors was significantly deceased in the subclinical group when compared with controls (GEE, P = 0.028,).The average and minimum value of GCIPL thickness, and thickness in the superonasal, inferior, inferotemporal, superotemporal and superior sectors were significantly decreased in the abnormal group when compared with controls (GEE, P = 0.016, P = 0.001, P = 0.028, P = 0.010, P = 0.012, P = 0.015, P = 0.010, respectively). In the generalised linear model analyses, the minimum and inferonasal mGCIPL thicknesses were positively correlated with cCVD in the EMB group (β=1.285, p=0.003 and β=0.770, p=0.024, respectively).

Conclusions:

The minimum and inferonasal GCIPL thicknesses were positively correlated with cCVD. GCIPL and cCVD might be an early indicator for monitoring early-stage EMB toxicity.

Abstract No.: 200138

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Association between Magnetic Resonance Imaging and visual outcome in patients with neuromyelitis optica-A tertiary hospital in Taiwan

First Author: Ming-hui SUN

Co-Author(s): Dolgormaa BUDRAGCHAA

Purpose:

To investigate the association between optic nerve imaging on magnetic resonance imaging (MRI) and visual outcome in patients with neuromyelitis optica (NMO)

Methods:

A retrospectively study was conducted by recording the optic nerve imaging on MRI in 35 patients with NMO (43 eyes with optic neuritis). Visual outcome was assessed with log MAR of Snellen visual acuity , and retinal fiber analysis of optical coherent tomography (OCT).

Results:

In total, there were 32 (91.4%) female and 3 (8.6%) male patients. Mean onset of age was 37.5±0.4 years in female, and 26±1.1 years in Male. Forty two (84%) patients had positive aquaporin-4 (AQP4) auto-antibody, 11 (36.7%) patients had high signal of optic nerve on Diffusion-Weighted imaging (DWI), and 20 (47.7%) patients had optic nerve enhancement on MRI. Twenty seven (62.8%) patients had worse final visual acuity (VA <20/40). Enhancement of optic nerve on MRI was significantly associated with worse final visual outcome (P=0.015), and thinning of temporal retinal nerve fiber layer (RNFL) 6 months after optic neuritis (P<0.001). However, high signal of optic nerve on DWI was not associated with visual outcome (P=0.141), and thinning of RNFL 6 months after optic neuritis (P=0.664). Neither high signal on DWI nor enhancement of optic nerve on MRI was associated with positive AQP4 antibody.

Conclusions:

Enhancement of optic nerve on MRI in patients with NMO might be associated with thinning of temporal RNFL on OCT measurement and could predict worse visual outcome.

Abstract No.: 200233

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Can changes in papillary blood flow density detected by OCTA predict prognostic vision for TON?

First Author: Caiwen XIAO

Purpose:

To detect changes in fudus blood flow in the patients of traumatic optic neuropathy using Optical Coherence Tomography Angiography (OCTA) technology, and to investigate whether changes in the vascular density of the optic nerve in the optic papilla are associated with improved vision

Methods:

A total of 86 monocular TON patients who were admitted to our department within three days after injury were selected. OCTA was conducted pre-surgery and post-surgery to detect blood perfusion in the optic disc and macular area of the patients in both eyes. The correlation between the changes of fundus blood flow and visual acuity was analyzed by LASSO logistic regression model.

Results:

In the early stage of injury, the vessel density of the TON eye was significantly reduced compared to the other healthy eye in all zones (C, S, I, N, T) of the peripapillary area ($p<0.001$), but there was no statistical difference in each parafoveal region. The difference of binocular peripapillary vessel density in the C zone was highly correlated with a change visual acuity ($p <0.01$). With the extension of time, the density of fundus blood vessels in injured eyes decreased significantly, even in eyes with improved vision, the density of fundus blood vessels also gradually decreased.

Conclusions:

The blood perfusion of the peripapillary area is an important potential marker to assist in the early diagnosis and treatment of TON.

Abstract No.: 200249

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Clinical Features and Functional Visual Recovery of Patients with Central Retinal Artery Occlusion Treated with Intra-Arterial Thrombolysis: A Single-Center Study

First Author: Songdi WU

Purpose:

To investigate the clinical characteristics and functional visual recovery of patients with central retinal artery occlusion (CRAO) treated with intra-arterial thrombolysis (IAT).

Methods:

The non-arteriotic CRAO patients were divided into IAT group and non-IAT group according to whether IAT was performed after admission. Functional vision is defined as visual acuity≥20/100. The clinical features and functional visual recovery at different time periods (admission, discharge and 1 month after discharge) were compared and analyzed between the two groups.

Results:

A total of 131 patients (131 eyes) with non-arteriotic CRAO were included, including 93 males (71.0%) with a mean age of (61.6±12.6) years. There were 57 patients (43.5%) in IAT group and 74 patients (56.5%) in non-IAT group. The proportion of functional vision at 1 month after discharge was higher in IAT group than that in non-IAT group [25(43.9%) vs. 24.3%), P =0.018], but there was no statistically significant difference in other time periods (admission and discharge) (P >0.05). Multivariate logistic regression analysis showed that the functional vision of CRAO patients in the IAT group at 1 month after discharge was significantly improved compared with those in the non-IAT group (OR 3.24,95%CI 1.08-9.69, P =0.036).

Conclusions:

Some clinical features of CRAO patients who were treated with or without IAT were different. IAT can significantly improve the functional vision of CRAO patients at 1 month after discharge, and the surgical safety is good. This suggests that clinicians should pay more attention to IAT in CRAO patients in order to improve their visual function

Abstract No.: 200158

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Clinical and optic coherence tomography characteristic of acute optic neuritis secondary to neurosarcoidosis

First Author: Xia ZHANG

Purpose:

Optic neuritis associated with neurosarcoidosis (NS-ON) presents a unique pathogenic profile distinct from conventional optic neuritis. The differentiation between NS-ON and typical optic neuritis forms, such as MOG-Ab positive optic neuritis (MOG-ON) and relapsing-remitting multiple sclerosis (RRMS) with optic neuritis is complex.

Methods:

This retrospective study encompasses data from 15 eyes of 15 patients with biopsy-proven neurosarcoidosis and acute optic neuritis, gathered from three major UK tertiary centres. Comparative groups included 16 patients with MOG-ON and 21 with RRMS-ON. Parameters such as clinical manifestations, best corrected visual acuity (BCVA), and optical coherence tomography (OCT) measurements of the peripapillary retinal nerve fibre layer (RNFL) and the ganglion cell-inner plexiform layer (GCIPL) were collected.

Results:

NS-ON differed significantly from MOG-ON and MS-ON in several aspects, including later age of onset ($p<0.001$), higher bilateral involvement ($p<0.001$), reduced ocular pain ($p<0.001$), and increased disc hemorrhage ($p<0.001$). Over a 6-month follow-up, visual improvement trajectories were similar across the groups ($p=0.11$). Initial RNFL thickness in NS-ON was significantly greater than in MS-ON ($p=0.015$) but comparable to MOG-ON. Baseline GCIPL thickness in NS-ON was significantly thinner than in MOG-ON ($p=0.009$) but similar to MS-ON . NS-ON exhibited a greater reduction in RNFL thickness compared to MS-ON ($p=0.012$) and a lesser reduction in GCIPL thickness compared to MOG-ON ($p=0.008$).

Conclusions:

Visual impairment and recovery in acute NS-ON did not significantly differ from MOG-ON and RRMS-ON. In acute NS-ON cases, RNFL was more swollen compared to MS-ON, and GCIPL damage was less severe than in MOG-ON.

Abstract No.: 200190

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Distinct clinical characteristics of optic compressive neuropathy associated with anterior clinoid process pneumatization

First Author: Mingxing WU

Co-Author(s): Shu Hui WEI, Huanfen ZHOU

Purpose:

Anterior clinoid process (ACP) pneumatization is an uncommon entity. The goal of the research was to explore the diagnostic characteristics and prognosis of the compressive optic neuropathy (CON) caused by ACP pneumatization.

Methods:

Clinical information were retrospectively gathered via those in hospitals diagnosed alongside CON companied with ACP pneumatization at the Neuro-Ophthalmology Department at the Chinese People's Liberation Army General Hospital from January 2021 to August 2023.

Results:

A overall of thirteen sufferers (three females and ten males, sixteen involved eyes) participated alongside an average age of 34.38±16.12 years. All the eyes were assessed with the ACP pneumatization classification system established by Da Costa: pneumatization Type 0 occurred in 3/26 sides (11.5%), Type 1 in 8/26 sides (30.8%), Type 2a in 8/26 sides (30.8%), Type 2b in 5/26 sides (19.2%), Type 3 in 2/26 sides (7.7%). 69.6% (16/23) eyes had optic compressive neuropathy in these patients. Among the ten patients with bilateral pneumatization, only three induced bilateral compressive optic neuropathy. 37.5% (6/16) eyes with visual field defect as the first symptom. Ultimately, two patients had endoscopic sphenoidotomy and optic canal decompression surgery, resulting in improved visual acuity in the operated eyes.

Conclusions:

CON caused by ACP pneumatization can lead to transient visual obscuration, varying degrees of visual field defects and vision loss. HRCT is advised in cases of unexplained vision loss and visual field defects to determine whether or not ACP gasification is occurring. While whether it requires surgery intervention and its effectiveness, still require large-scale research and verification.

Abstract No.: 200063

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Factors influencing the rate and time of generalization in ocular myasthenia gravis

First Author: Jimethat CHALERMPONG

Co-Author(s): Pawimon CHATCHUTIMAKORN*, Niphon CHIRAPAPASISAN, Wanicha CHUENKONGKAEW, Akarawit EIAMSAMARNG*, Natthapon RATTANATHAMSAKUL*

Purpose:

The conversion of ocular myasthenia gravis (OMG) to generalized myasthenia gravis (GMG) lacks definitive predictors. This study aimed to identify factors influencing OMG generalization and the time to conversion.

Methods:

This retrospective cohort study collected and analyzed data from January 2007 to December 2019. Medical records of 200 OMG patients were reviewed. Statistical analyses were performed to identify factors associated with GMG conversion and time to conversion.

Results:

Among the 200 OMG patients, 78 (39%) progressed to GMG, with a median conversion time of 16 months (IQR 7.88, 33.75) and a 2-year conversion rate of 25.5%. Significant predictors of conversion included acetylcholine receptor antibody (AchR Ab) positivity (OR 6.99, 95% CI 3.23–15.13), thymic abnormalities (OR 5.35, 95% CI 2.24–12.76), and pyridostigmine dosages > 180 mg/day (OR 8.35, 95% CI 2.98–23.37). Shorter conversion times were associated with smoking, thymic abnormalities, positive AchR Ab, and pyridostigmine dosages > 180 mg/day, with adjusted hazard ratios of 1.78 (95% CI 1.04–3.03), 2.30 (95% CI 1.41–3.74), 2.88 (95% CI 1.79–4.63), and 2.33 (95% CI 1.41–3.87), respectively.

Conclusions:

The findings highlight the importance of routine assessment for thymic abnormalities and AchR Ab positivity in OMG patients. Smoking cessation should be strongly recommended as part of the management strategy, given its potential impact on conversion risk and time. Managing these risk factors may mitigate the progression from OMG to GMG.

Abstract No.: 200047

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

Neuro-ophthalmic findings of visual snow in East Asia

First Author: Hyun Jin SHIN

Co-Author(s): Andrew LEE, Ha Eun PARK

Purpose:

The aim of this study was to determine the neuro-ophthalmology and treatment responses in visual snow syndrome (VSS).

Methods:

We retrospectively reviewed the data of patients diagnosed with VSS at a tertiary referral hospital from March 2021 to February 2024. Data on visual and nonvisual symptoms, self-reported events that caused VSS, and medical and psychiatric comorbidities were extracted from medical charts. Neuroimaging findings from MRI and 18F-FDG PET were evaluated, along with treatment responses to pharmacological interventions and filter glasses.

Results:

The sample comprised 27 males and 36 females, with a mean age of 27±11 years (mean±SD) and onset age of 22.4±11 years. Common symptoms included floaters, palinopsia, anxiety, and depression. Fourteen participants attributed VSS onset to specific ophthalmic events (e.g. bright-lights during dilated ophthalmic examinations or refractive surgeries). 18F-FDG PET scans showed hypermetabolism in the visual cortices, with no significant MRI abnormalities. Lamotrigine (18.9%), alprazolam (20%), and filter glasses (32.1%) showed modest efficacy in reducing the intensity of VSS.

Conclusions:

Bright-light ophthalmic examinations and refractive surgery might trigger VSS in susceptible subjects. Functional brain scanning methods such as 18F-FDG PET may be an objective diagnosing tool for VSS. The pharmacological treatment responses for VSS were variable and modest. A multidisciplinary treatment strategy that combines medication and filter glasses and also addresses psychological aspects may improve the quality of life in patients with VSS. East Asian patients with VSS demonstrated similar symptoms, PET scan findings, and response to treatment to reports from Europe and North America.

Abstract No.: 200079

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N202+N203

The Effect of Androgen Deprivation Therapy on Contrast Sensitivity and Colour Vision in Metastatic Prostate Cancer Patients

First Author: Antonia INDRIATI

Co-Author(s): Aaron Tigor SIHOMBING

Purpose:

To investigate the effect of androgen deprivation therapy (ADT) on contrast sensitivity and colour vision in patients with metastatic prostate cancer.

Methods:

A cross-sectional study was performed on 13 metastatic prostate cancer patients who received ADT and 8 benign prostate hyperplasia (BPH) patients as control. Mars numeral contrast sensitivity test as well as Hardy Rand and Rittler (HRR) pseudoisochromatic plates, Farnsworth-Munsell 28-hue and Ishihara 21 plates colour vision tests were performed in both groups.

Results:

Mars numeral contrast sensitivity was reduced significantly in both eyes of metastatic prostate cancer patients with ADT compared to BPH patients (p=0.035). There was no statistically significant difference in all colour vision tests between metastatic prostate cancer patients with ADT and BPH patients; HRR test (p= 0.952), Farnsworth test (p=0.998) and Ishihara test (p=1.000).

Conclusions:

Androgen deprivation therapy reduces contrast sensitivity; however, it does not affect colour vision in metastatic prostate cancer patients.

Abstract No.: 200261

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N206-208

Beta-blockers Reduce the Hazard of Developing Moderate-to-severe Thyroid Eye Disease in Autoimmune Thyroid Disease Patients – a Target Trial Emulation with Territory-wide Cohort of Autoimmune Thyroid Disease Patients from Hospital Authority Data Collaboration Laboratory

First Author: Wai Chak CHOY

Co-Author(s): Fatema ALJUFAIRI, Carmen CHAN, George Pak Man CHENG, Carol CHEUNG, Kelvin Kam Lung CHONG, Oscar Hou In CHOU, Xiao Yan HU, Kenneth LAI, Alan Chun Hong LEE, Kam Pui LEE, Jason Chiu Ming NG, Calvin Cp PANG, Jake SEBASTIAN, Clement Cy THAM, Han WANG, Martin Chi Sang WONG, Samuel Yeung Shan WONG, Wilson YIP, Alvin L. YOUNG, Hunter YUEN

Purpose:

Thyroid eye disease (TED) remains a significant extra-thyroidal manifestation of autoimmune thyroid disease (AITD). Previous studies showed the potential effect of beta-blockers on TED progression. We performed target trial emulation (TTE) to delineate the effect of beta-blockers on TED.

Methods:

We emulated multiple two-arm clinical trials to compare the standard-of-care alone versus the standard-of-care alone plus commonly used beta blockers (atenolol, propranolol, and metoprolol). Adults with newly diagnosed AITD with no previous treatments for autoimmune thyroid diseases and thyroid eye diseases, while being treatment-naïve to beta-blockers, were included. We excluded those within 2 years of pregnancy, with history of thyroid malignancies or pathologies, or have orbital pathologies. We excluded patients with history of optic neuropathy or severe keratopathy defined by treatment. Patient data were extracted from the HADCL. Covariates adjustment was performed with propensity score weighting (PSW) with sensitivity analysis by inverse probability weighting.

Results:

Among 140776 AITD patients. 5154, 7767 and 6641 were assigned to treatment arm of atenolol, propranolol and metoprolol respectively. PSW showed good covariates adjustment. (Ks=<0.035). Atenolol (estimate=0.787, CI=0.680-0.910, P=0.0012) and metoprolol (estimate=0.729, CI=0.638-0.833, P=<0.0001) were associated with lower hazards for M2STED onset. Subgroup analysis showed metoprolol was the most protective for female (estimate=0.667, CI=0.574-0.775, P<0.0001) and non-smoker (estimate=0.681, CI=0.586-0.792, P<0.0001) among the 3 drugs. Only metoprolol was protective for those aged above 50 (estimate=0.835, CI=0.726-0.960, P=0.0111). Statistically significant association was found for the 3 drugs on sensitivity analysis.

Conclusions:

TTE allowed repurposing of commonly used medications. Use of selected beta-blockers may be protective against M2STED onset

Abstract No.: 200030

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N206-208

Deep Learning-based Non-invasive Differential Diagnosis of Eyelid Basal Cell and Sebaceous Carcinomas Using Photographic Images

First Author: Jie CHEN

Co-Author(s): Renbing JIA, Shiqiong XU

Purpose:

Accurate differential diagnosis of eyelid basal cell carcinoma (BCC) and sebaceous carcinoma (SeC) is mainly relies on pathological examination, which is invasive and time-consuming, and many grassroots hospitals do not have the examination condition. An early and accurate non-invasive differential diagnosis method for eyelid BCC and SeC is of greater significance.

Methods:

Using 199 photographic images from 199 eyelid BCC patients and 171 photographic images from 171 eyelid SeC patients diagnosed at Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine from 2016 to 2022, we proposed a ResNet50-based deep learning method, and its differential diagnosis performance was assessed by classification accuracy and F1 score. We compared the differential diagnosis performance of the method with that of four ophthalmologists, three junior and one senior. To validate the auxiliary value of the method, we compared the ophthalmologists' eyelid BCC and SeC diagnosis with and without the assistance of our proposed method.

Results:

Our proposed method achieved a differential diagnosis accuracy of 0.892, higher than that of four ophthalmologists (0.703, 0.541 and 0.811 for three junior ophthalmologists and 0.874 for one senior ophthalmologist). With assistance of this method, the ophthalmologists' differential diagnosis accuracy increased by 14.1%, 63.2% and 2.2%, respectively, for three junior ophthalmologists and by 1.0% for one senior ophthalmologist.

Conclusions:

Our proposed method accurately differentiates eyelid BCC and SeC, and effectively improves the differential diagnosis performance of ophthalmologists. It may therefore facilitate the development of appropriate and timely therapeutic plans.

Abstract No.: 200032

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N206-208

Establishment and characterization of a TP53-mutated eyelid sebaceous carcinoma cell line

First Author: Xiang GU

Purpose:

This study established and characterized an eyelid SeC cell line with a TP53 mutation that might be useful for analyzing potential treatment options for eyelid SeC.

Methods:

The eyelid SeC cell line SHNPH-SeC was obtained from a patient with eyelid SeC at Shanghai Ninth People's Hospital (SHNPH), Shanghai JiaoTong University School of Medicine. Immunofluorescence staining was employed to detect the origination and proliferation activity. Short tandem repeat (STR) profiling was performed for verification. Chromosome analysis was implemented to investigate chromosome aberrations. Whole exome sequencing (WES) was used to discover genomic mutations. Cell proliferation assays were performed to identify sensitivity to mitomycin-C (MMC) and 5-fluorouracil (5-FU).

Results:

SHNPH-SeC cells were successively subcultured for more than 100 passages and demonstrated rapid proliferation and migration. Karyotype analysis revealed abundant chromosome aberrations, and WES revealed SeC-related mutations in TP53, KMT2C, and ERBB2. An in vivo tumor model was successfully established in NOD/SCID mice. Biomarkers of eyelid SeC, including cytokeratin 5 (CK5), epithelial membrane antigen (EMA), adipophilin, p53, and Ki-67, were detected in SHNPH-SeC cells, original tumors, and xenografts. MMC and 5-FU inhibited the proliferation and migration of SHNPH-SeC cells, and SHNPH-SeC cells presented a greater drug response than non–TP53-mutated SeC cells.

Conclusions:

The newly established eyelid SeC cell line SHNPH-SeC demonstrates mutation in TP53, the most commonly mutated gene in SeC. It presents SeC properties and malignant characteristics that may facilitate the investigation of cellular behaviors and molecular mechanisms of SeC to explore promising therapeutic strategies.

Abstract No.: 200107

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N206-208

Low Clinical Activity Score Thyroid Eye Disease: review of 1439 patients from a Tertiary Center in Hong Kong

First Author: Kenneth LAI

Co-Author(s): Fatema ALJUFAIRI, Karen CHAN, Regine CHAN, Joyce Kar Yee CHIN, Chi Lai LI, Calvin Cp PANG, Jake SEBASTIAN, Clement Cy THAM, Wilson YIP, Alvin L YOUNG, Kelvin KI CHONG

Purpose:

To report the clinical-serological and treatment profiles of 1439 thyroid eye disease (TED) patients from a tertiary center in Hong Kong.

Methods:

TED patients were managed at the Thyroid Eye Clinic, the Prince of Wales Hospital, and the Chinese University of Hong Kong between 2014 and 2023. This is a retrospective cohort study involving a masked review of medical records and orbital images.

Results:

A total of 1439(70% female, 98% ethnic Han Chinese) TED patients (26%ex/current smoker), average onset age of 43±59years, were reviewed. Duration from symptom to our consultation was 6±3 months. Up to 85% of patients were diagnosed with Graves' disease and 12% were treated with radioactive iodine. Euthyroid Graves' ophthalmopathy (EGO) was diagnosed in 6% of patients and they were associated with asymmetric presentation($P<0.001$). The most common presentation was upper eyelid retraction (53%), followed by upper eyelid swelling(36%), redness(34%), and lower eyelid retraction(32%). The mean clinical activity score (CAS) was 1.2±1.4. Up to 48% of patients had restrictive myopathy and 10% were diagnosed with dysthyroid optic neuropathy. Thyroid-stimulating hormone receptor antibody, TSI Thyroid-stimulating immunoglobulin, and thyroid peroxidase antibody were elevated in 75%,69%, and 57% of treatment naïve patients. Male and onset age above 39 were associated with higher CAS and NOSPEC scores (both $P<0.05$). 33% and 9% of patients received intravenous methylprednisolone and surgical decompression, respectively.

Conclusions:

82% were clinically inactive with CAS <3, while 48% of the cohort presented with moderate-to-severe or visual-threatening TED. Our cohort highlights the need for alternative approaches to treat low-CAS progressive TED patients.

Abstract No.: 200105

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N206-208

Psychiatric Outcome in Thyroid Eye Disease

First Author: Eric Ka Ho CHOY

Co-Author(s): Kenneth Ka Hei LAI, Kelvin Kl CHONG

Purpose:

To evaluate the prevalence of psychiatric diseases and the use of psychiatric drugs among thyroid eye disease (TED) patients.

Methods:

A retrospective cohort study of TED patients managed at Prince of Wales Hospital and the Chinese University of Hong Kong from January 2014 to May 2024. Clinical data regarding diagnoses of psychiatric diseases and psychiatric drug use were extracted from electronic clinical records in Clinical Management System.

Results:

A total of 1,659 patients were included. Diagnoses of psychiatric disease were found in 211 patients (12.7%), in which 79 (37.4%) occurred after TED diagnoses. The most prevalent psychiatric diagnoses were depressive disorder (106, 6.4%), anxiety disorder (44, 2.7%), adjustment disorder (18, 1.1%), mixed anxiety and depressive disorder (15, 0.9%), and schizophrenia and psychosis (11, 0.7%). The most common psychiatric drugs used were anti-depressants (130 out of 211, 61.6%), anxiolytics (99, 47.0%), hypnotics (75, 35.5%), anti-psychotics (40, 19.0%), and anti-convulsant (37, 17.5%). The most prescribed anti-depressants were sertraline (60 patients), fluoxetine (47), and mirtazapine (35). The most used anxiolytics were lorazepam (56 patients), alprazolam (37), and diazepam (35). Zopiclone (55 patients), zolpidem (31), and melatonin (13) were the most prescribed hypnotics. The most used antipsychotics were quetiapine (27 patients), risperidone (8) and olanzapine (8). Pregabalin (20 patients), clonazepam (12), and sodium valproate (9) were the most prescribed anti-convulsant. Drug abuse was observed in 16 (1.0%) patients. 59 (3.6%) patients had suicidal thoughts, 14 of which attempted suicide.

Conclusions:

Psychiatric diseases are common among TED patients. Larger epidemiology study evaluating psychiatric outcome in TED is warranted.

Abstract No.: 200144

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N206-208

Small-Incision Medial Browpexy Combined with Direct Lateral Browplasty: A Feasibility Review

First Author: Mark Joseph LAGAO

Co-Author(s): Karen CHAN, Kelvin Kam Lung CHONG

Purpose:

To review the feasibility of Small-Incision Medial Browpexy Combined with Direct Lateral Browplasty.

Methods:

A literature review was performed using databases such as PubMed, and Google Scholar. Keywords included ‘brow ptosis,’ browplasty,’ and ‘browpexy.’ Studies were selected based on relevance, study design, and publication date.

Results:

Brow ptosis, often results from aging can be influenced by trauma, neurogenic, myogenic, infectious, and iatrogenic factors. It leads to a displeased appearance and may be associated with functional visual deficits due to pseudoptosis or secondary dermatochalasis. Current management options include usage of botulinum toxins, dermal filler, thread lifts and, surgical methods such as frontotemporal lift and endoscopic lift. The most effective and durable procedure is direct brow lifting however this procedure can cause visible scarring and excessive elevation resulting in a surprised look or feminized brow in men. Direct browplasty limited on the lateral aspect does not address the medial brow ptosis ,Small-incision medial browpexy is a modification of the external browpexy technique. An incision made above the medial eye brow to expose the subcutaneous orbicularis and periosteum. Another incision is placed along the closest frontal rhytid to access the periosteum. A horizontal mattress is passed through the orbicularis oculi muscle and periosteum out to the second incision.

Conclusions:

Small-incision medial browpexy may offer a balanced solution to medial brow ptosis by with minimized scarring. This technique may enhance aesthetic outcomes while preserving the natural brow contour, potentially improving both appearance and function in patients with brow ptosis.

Abstract No.: 200167

Dec 07, 2024 (Sat) 10:30 - 12:00 Venue: N206-208

The Economic Burden of Thyroid Eye Diseases – A Systematic Review

First Author: Anakin Chu Kwan LAI

Co-Author(s): Kelvin Kam Lung CHONG, Wai Chak CHOY, Kenneth Ka Hei LAI

Purpose:

Thyroid eye disease (TED) lead to visual dysfunction, facial deformities causing significant economic burden and impairment of the quality of life (QOL) of patients. We report on the published evidence of its economic burden and investigate for any evidence gap.

Methods:

We conducted a systematic review including MEDLINE, EMBASE, Cochrane reviews and PubMed according to the PRISMA guideline on studies reporting its direct, indirect and intangible costs in USD, adjusted to inflation for comparison.

Results:

Of the 325 studies/presentations included, three reported on direct and indirect costs of TED. Data was from standardized questionnaires and administrative database. Cost of disease per patient varied from US$12,278-$109,999. Indirect costs from productivity loss (absenteeism and presenteeism) were consistently higher than direct costs. Non-surgical treatments range from $2,569-$8,503 while surgery costs from $5,813-$27,464. Orbital decompression was the commonest and the most expensive operation. Decreasing treatment cost was observed over time. TED has a higher per person cost than most eye diseases, including cataract ($150-$2,500) and glaucoma ($878-$10,494) [1]. Existing studies did not include biologics which may substantially underestimate its potential economic burden as a course of teprotumumab costs $200,000 [2]. No study evaluated intangible cost in disability-adjusted life years (DALYs) but reported using TED-specific QOL scores, rendering comparison with other eye diseases impossible.,,1. PMID: 35340626,2. PMID: 36346685

Conclusions:

TED has highest economic burdens amongst eye diseases and cost is mainly surgical. Future studies should include cost of biologics and DALYs.

Abstract No.: 200136

Dec 08, 2024 (Sun) 09:00 - 10:30 Venue: N206-208

Comparison of Peripapillary Retinal Nerve Fiber Layer Thickness of Paediatric Patients with True and Pseudo-Papilledema

First Author: Jasmine CHUANG

Co-Author(s): Cheuk Ling YIM, Carmen CHAN, Matthew LAM, Cherie WONG

Purpose:

To evaluate the differences in the peripapillary retinal nerve fiber layer (pRNFL) thickness of true vs. pseudo-papilledema patients in the Chinese paediatric population

Methods:

This is a retrospective study including 10 eyes of 5 paediatric patients with papilledema due to idiopathic intracranial hypertension (IIH) or intracranial tumor and 24 eyes of 12 paediatric patients with pseudo-papilledema. pRNFL thickness was measured using Cirrus optical coherence tomography (OCT). Comparison was made between the average and sectoral (superior, inferior, nasal and temporal) pRNFL of the two groups, using unpaired t-test.

Results:

The average age of the papilledema group and the pseudo-papilledema group were 14±3 and 12±2 respectively. The papilledema group had significantly thicker average pRNFL (146.0±20.7μm vs 120.8±19.1μm) and in the inferior (201.3±64.3μm vs 147.6±34.2μm) and nasal (78.7±15.7μm vs 64.7±15.7μm) sector, as compared to the pseudo-papilledema group (p=0.0022, 0.0044, 0.0435 respectively). However, a comparison of the superior (179.7±34.6μm vs 157.8±43.9μm) and temporal sectors (123.6±34.0μm vs 113.6±25.7μm) revealed no significant difference (p=0.18 and 0.37 respectively). Based on available data, a potential cut-off value with >95% specificity and 50% specificity can be >138μm for average pRNFL combined with >181.5μm for inferior pRNFL.

Conclusions:

This study demonstrated a significantly thicker average, inferior and nasal pRNFL in paediatric papilledema patients as reflected in their OCT RNFL scans. As it is important to err on the side of caution in patients with bilateral optic disc swelling, OCT pRNFL (average, inferior and nasal sectors) can help distinguish true papilledema from pseudo-papilledema non-invasively.

Abstract No.: 200147

Dec 08, 2024 (Sun) 09:00 - 10:30 Venue: N206-208

Effects of Physical Activity and Inactivity on the Microvasculature in Children: The Hong Kong Children Eye Study

First Author: Vincent YUEN

Co-Author(s): Guy CHEN, Carol CHEUNG, Ka Wai KAM, Calvin Cp PANG, Clement Cy THAM, Jason C YAM*, Alvin L. YOUNG, Xiujuan ZHANG, Yuzhou ZHANG

Purpose:

To investigate the effects of physical activity/ inactivity on the microvasculature, measured from retinal photographs, in children.

Methods:

All participants were from the Hong Kong Children Eye Study, a population-based cross-sectional study of children aged 6 to 8 years. They received comprehensive ophthalmic examinations and retinal photography. Their involvement in physical activity/ inactivity and demographics were obtained from validated questionnaires. A validated artificial intelligence deep-learning system was used to measure central retinal arteriolar equivalent (CRAE) and central retinal venular equivalent (CRVE) from retinal photographs.

Results:

In the final analysis of 11,959 participants, 6,244 (52.2%) were boys and the mean age was 7.55 (1.05) years. Increased ratio of physical activity to inactivity was associated with wider CRAE ($\beta = 1.033$; $P = 0.007$) and narrower CRVE ($\beta = -2.079$; $P < 0.001$). In the subgroup analysis of boys, increased ratio of physical activity to inactivity was associated with wider CRAE ($\beta = 1.364$; $P = 0.013$) and narrower CRVE ($\beta = -2.563$; $P = 0.001$). The subgroup analysis of girls also showed increased ratio of physical activity to inactivity was associated with narrower CRVE ($\beta = -1.759$; $P = 0.020$), but not CRAE.

Conclusions:

Increased activity in children is associated with healthier microvasculature, as reflected in the retina. Our study contributes to the growing evidence that physical activity positively influences vascular health from a young age and underscores the potential of using the retinal vasculature as a biomarker for cardiovascular health.

Abstract No.: 200256

Dec 08, 2024 (Sun) 09:00 - 10:30 Venue: N206-208

Global, Regional, and National Trends of Retinopathy of Prematurity Epidemiology in 1990-2021 and the Association with Socio-economic and Healthcare Factors

First Author: Wai Chak CHOY

Co-Author(s): Guy CHEN, Ka Wai KAM, Calvin Cp PANG, Clement Cy THAM, Emily WONG, Jason C YAM*, Yuzhou ZHANG

Purpose:

Retinopathy of prematurity (ROP) is an important cause of avoidable blindness. We aim to analyze global, regional, and national trends in vision loss related to ROP and delineate socioeconomic and healthcare (SEH) determinants of the current landscape.

Methods:

Utilising the Global Burden of Disease (GBD) 2021 database, we extracted population-level statistics for ROP from 1990-2021 for 204 countries. Disease burden for ROP was characterised by prevalence rate, stratified by levels of vision loss. Estimated annual percent changes (EAPCs) were used to characterise trends, stratified by age, sex, social development index (SDI), and locations. SEH indicators were extracted from WHO and world bank database. We estimated their correlation with ROP disease burden with multivariable linear regression.

Results:

Significant reduction in prevalence rate was observed particularly for low (EPAC=-1.27, CI=-1.29--1.24, P<0.0001) and low-middle SDI locations after 2005 (EPAC=-1.08, CI=-1.21--0.96, P<0.0001). Latin America (EPAC=-2.41, CI=-2.51--2.32, P<0.0001), North Africa and Middle East (EPAC=-1.69, CI=-1.72--1.65, P<0.0001), and South Asia (EPAC=-1.68, CI=-1.84--1.51, P<0.0001) showed the highest reduction in ROP-related blindness. GINI index (beta=0.51, CI=0.16-0.87, P=0.0059), nurses density (beta-1.21, CI=-1.99--0.44, P=0.0028), and prenatal and perinatal care coverage (beta=-0.83, CI=-1.19--0.47, P<0.0001) were significantly associated with all-grade vision loss prevalence. Nursing staff density (beta=-1.03, CI=-1.54--0.51, P<0.0001) and GNI per capita (-1.03, CI=-1.76--0.30, P=0.0065) showed comparable and the strongest correlation with blindness.

Conclusions:

Improving global outcomes with narrowing disparity was noted from 1990-2021. Increasing global efforts on technological transfer, personnel training and neonatal care access would continue to improve ROP outcomes worldwide.

Abstract No.: 200176

Dec 08, 2024 (Sun) 09:00 - 10:30 Venue: N206-208

Scleral-suture augmented Hummelsheim's Transposition for treatment of Abducens Paralysis: A single centre experience.

First Author: Kai Ching, Peter LEUNG

Co-Author(s): Tak Chuen Simon KO, Kai Wah Patrick WU

Purpose:

Management of complete abducens paralysis with vertical rectus muscle transposition (Hummelsheim) is an effective strategy. The resection effect is however commonly found under-correction. Lateral fixation suture on vertical muscle transposition (Foster) enhances the transposition vector and path length and appeared to be a useful strategy to overcome this problem.

Methods:

Retrospective analysis of scleral-suture augmented Hummelsheim procedure by three resident surgeons were conducted at a tertiary ophthalmology centre from 2003 to 2024. Data, patient demographics, diagnosis, presence of diplopia, deviation angle, abduction deficit, stereopsis, preoperative and postoperative comparison and complication event were retrieved via hospital database. s were recorded. Conventional Hummelshiem and Foster augmentation procedure were conducted with or without adjustable medial rectus (MR) recession in cases of tight MR.

Results:

A total of 30 cases were found to have Hummelsheim transposition and Foster augmentation with or without MR adjustable recession. Preoperative angle deviation mean was 61^BO. Abduction deficit mean was -4. Stereopsis was negative for all patients . All patient complained of diplopia preoperatively. Postoperative angle deviation mean was 2^BO. Abduction deficit mean was improved to -3. Stereopsis were regained in all subjects by Frisby. Diplopia was relieved in all but 7 patients. No anterior ischemic events were documented. Induced vertical diplopia was noted in 6 patients. Mild globe retractions were recorded in 3 patients.

Conclusions:

The use of scleral-suture augmented Hummelsheim's transposition appeared to be an effective and safe strategy in treating abducens paralysis.

Abstract No.: 200255

Dec 08, 2024 (Sun) 09:00 - 10:30 Venue: N206-208

The longitudinal vision recovery in 3 months after primary pediatric optic neuritis onset in Chinese population

First Author: Jun Yan ZHANG

Co-Author(s): Chunxia PENG

Purpose:

Pediatric optic neuritis (PON) is a rare entity of disease and patients' visual function recoveries vary according to subtypes and ethnic groups.The study aimed to evaluate PON patients' best-correct vision acuity (BCVA) change with time in various subtypes of PON, recurrences and optic nerve structural alterations detected by optical coherence tomography (OCT) in a Chinese population.

Methods:

91(151 eyes) PON cases with at least 3 months follow-up were included in this study and they were subtyped according to serum MOG and AQP4 antibodies assay. BCVA were assessed and peripapillary retinal nerve fiber (pRNFL)and macular thicknesses were evaluated by OCT.

Results:

The age of PON primary onset was median (IQR):9(7-11) years, with ratio of male to female 40/51.Among them, 52.7% were MOG antibody positive (MOG+PON), with 14.3% of NMO/NMOSD associated PON(NMO/NMOSD-PON) and 25.3% of isolated PON. 86.8% of PON suffered to visual loss worse than 0.1 and 77.5% of cases' BCVA recovery better than 0.8 at 3 months. ADEM-PON had best visual recovery with 100% of fully recovery followed by MOG+PON (86.6%), isolated PON (68.6%) and NMO/NMOSD-PON (47.8%). The pRNFL and macular thicknesses in PON patients reduced sharply compared with healthy controls (HCs)(p=0.000).

Conclusions:

The PON suffered severe visual loss at acute stage but most cases gained completely recovery. Visual recovery with time varied among subtypes of PON. The subtypes of PON could have potential cues to assess PON's prognosis.

Abstract No.: 200195

Dec 08, 2024 (Sun) 09:00 - 10:30 Venue: N206-208

The peripheral defocus designed spectacle lenses might increase astigmatism in myopic children

First Author: Jie CHEN

Co-Author(s): Xiaoman LI, Cong YE

Purpose:

This study aims to explore the impact of wearing peripheral defocus spectacle lenses (PDSL) on cylindrical refractive error (CYL) in myopic children.

Methods:

This study included 1,057 myopic children and divided the participants into three groups: the HAL group (spectacle lens with highly aspherical lenslets), the MPV group (spectacle lens based on manipulating peripheral vision), and a control group (without myopia control interventions). The study analyzed the effect of wearing PDSL on changes in spherical equivalent refraction (SER), CYL, and corneal astigmatism (CA). The mediating effect between changes in spherical refractive errors (SPH) and CYL was also investigated.

Results:

Compared to the control group (0.05 ± 0.33 D), the annual CYL progression was faster in the HAL group (-0.15 ± 0.33 D, $p < 0.001$) and the MPV group (-0.09 ± 0.27 D, $p = 0.019$). More children in the HAL group had an annual CYL progression ≥ 0.50 D (HAL: 23.6%, Control: 16.2%, $p = 0.012$). The annual CYL and CA progression were consistent within the PDSL groups (HAL: $p = 0.677$, MPV: $p = 0.683$). The total effect of CYL progression in the HAL group was primarily due to direct induction from wearing HAL and indirect induction through the SPH control effect.

Conclusions:

The application of PDSL could cause increase in astigmatism in myopic children, which could mainly be contributed to cornea astigmatism change.

Abstract No.: 200157

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N206-208

Exploring the retina-heart connection: insights from a cohort study using OCTA imaging

First Author: Ziyu ZHU

Co-Author(s): Wei WANG

Purpose:

To identify the essential capillary layer having prognosticated value for cardiovascular disease (CVD) and mortality.

Methods:

The Guangzhou Diabetic Eye Study (GDES) is a community-based prospective cohort. The optical coherence tomography angiography (OCTA) was adopted for quantifying retinal microvasculature and choriocapillaris (CC) perfusion. The impacts of OCTA metrics on risks of CVD and mortality were evaluated by logistic models.

Results:

A total of 2,950 patients (2,950 eyes) were included. In the fully adjusted models, the elevated CC flow deficit (FD) in the entire region was significantly associated with higher odds of developing CVD (odds ratio [OR]=1.11 per 1-SD increase; 95%CI: 1.01-1.20; P=0.022) and risks of CVD-related mortality (OR=1.25 per 1-SD increase; 95%CI: 1.04 -1.52; P=0.021). Sector analyses arrived consistent results, with ORs of 1.17 (95% CI, 1.07-1.27; P<0.001) for CVD events and 1.246 (95%CI: 1.023-1.517; P=0.029) for CVD-mortality in the foveal, 1.130 (95% CI, 1.038-1.230; P=0.005) for CVD events and 1.224 (95%CI: 0.989-1.515, P=0.063) for CVD-mortality in the parafoveal, and 1.168 (95% CI, 1.075-1.269; P<0.001) CVD events and 1.307 (95%CI: 1.070-1.597; P=0.009) for CVD-mortality in the perifoveal region. Subgroup analysis by age group, sex, HbA1c levels, and education attainment obtained similar results.

Conclusions:

Impaired CCs occur earlier than alterations in retinal capillary layers, underscoring the potential of CC FD% as an early indicator of CVD risk. Further study is warranted to explore whether early interventions based on CC information could positively impact the prognosis of individuals at high risk for CVD.

Abstract No.: 200205

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N206-208

Metabolic fingerprinting on photoreceptors reveals underpinnings of eye-body connection and predicts multi-disease risk

First Author: Wei WANG

Co-Author(s): Li HUANGDONG, Shaopeng YANG, Ziyu ZHU

Purpose:

The systemic health implications of the retinal photoreceptor layer remain intriguing yet elusive. This prospective study aims to elucidate the eye-body connection and inform health promotion strategies.

Methods:

Optical coherence tomography and metabolomics data were acquired from two ethnically diverse cohorts: the UK Biobank (UKB) and the Guangzhou Diabetic Eye Study (GDES). The prospective association between photoreceptor layer thickness and multi-system health outcomes were examined in 35,830 UKB and 1,357 GDES participants. Plasma metabolites linked to photoreceptor layer thickness were identified and validated in 7,824 UKB and 980 GDES participants. The prospective association of these photoreceptor-related metabolites with multi-disease risk and their added predictability were assessed in a non-overlapping 86,014 UKB and 638 GDES participants.

Results:

Associations were identified between the photoreceptor layer and 16 varied health outcomes, including all-cause mortality, cardiovascular diseases, kidney disease, liver disease, respiratory conditions, and cancers (all false discovery rate [FDR] $P<0.05$). 109 metabolic signatures were associated with the photoreceptor layer, comprising 96 metabolites with positive and 13 with negative associations (all FDR $P<0.05$). Metabolites positively associated with the layer generally indicated a lower risk of multi-system outcomes, whereas those negatively associated indicated increased risk (all FDR $P<0.05$). Incorporating these metabolic signatures into predictive models significantly improved multi-disease risk prediction over established predictors (all $P<0.05$).

Conclusions:

The photoreceptor layer is significantly associated with a broad spectrum of systemic health outcomes, underscored by a distinct metabolic profile. These profiles might help refine the integrated prediction of systemic health, though further validation studies are required.

Abstract No.: 200082

Dec 07, 2024 (Sat) 16:00 - 17:30 Venue: N206-208

Quantitative OCTA metrics as biomarkers in Cerebral Small Vessel Disease: A pilot study

First Author: Isaac LAU

Co-Author(s): Tuerxuntayi AILIFEIRE, Simon SZETO, Shuyi ZHANG

Purpose:

To investigate the association between quantitative metrics of optical coherence tomography angiography (OCTA) images of the macula and severity of quantitative metrics of cerebral small vessel disease (CSVD) on magnetic resonance imaging (MRI).

Methods:

This was a cross-sectional analysis of a prospective study involving 51 eyes from 26 patients with CSVD. All patients underwent structural MRI with diffusion imaging and swept source OCTA (DRI-OCT Triton, Topcon Inc, Japan) examinations. MATLAB (MathWorks, Natick, MA) was used to generate quantitative OCTA metrics from the superficial capillary plexus (SCP) and deep capillary plexus (DCP) based on 3x3mm OCTA images of the macula, which included foveal avascular zone (FAZ) area, FAZ circularity, vessel density (VD) and fractal dimension (FD). MRI metrics included volume of white matter hyperintensities (WMH), fractional anisotropy (FA), mean diffusivity (MD), and normalized hippocampus volume. Statistical analysis was performed using multivariate linear regression.

Results:

In multivariate analysis adjusting for age, gender, axial length and education level. FAZ circularity of the SCP was associated with lower FA (ß = -0.451, p=0.020). FAZ area of the SCP was correlated with lower MD (ß = -7.222, p=0.021), and higher normalized hippocampus volume (ß =0.498, p=0.035).

Conclusions:

FAZ area and VD were associated with severity of CSVD. Given its non-invasive nature and rapid image acquisition time, OCTA can be potentially used to screen for CSVD and assess its severity and progression with treatment.

Abstract No.: 200041

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N202+N203

Comparison of Image Review Parameters from Two Different Optical Coherence Tomography Analytical Workflows

First Author: Franz Marie CRUZ

Co-Author(s): Jose Carlo ARTIAGA, Pik Sha CHAN, Youko SAKURAI, Harvey UY

Purpose:

To compare image review time, treatment decision agreement rate, treatment decision confidence, ease-of-use, and inter/intra-rater reliability of two optical coherence tomography (OCT) image review workflows.

Methods:

This cross-over study had 10 retina specialists review OCT image sets from 30 eyes being treated with intravitreal medications. Five specialists reviewed chronologically arranged paper printout image sets first, then reviewed the corresponding digital versions using data navigation and summary software; the other 5 specialists reviewed the same image sets in reverse. The 2 image review workflows were compared based on: 1) image review time per image set; 2) self-rated treatment-decision confidence level; 3) ease-of-use rating. Inter-rater and intra-rater reliability rates were also determined.

Results:

The mean image review time for print and digital image sets were 55.5 37.2 and 28.6 16.5 seconds, respectively (P = 0.007). The mean treatment-decision confidence levels using print and digital workflows were 8.0 0.9 and 8.5 0.8, respectively (P = 0.0015). The mean ease-of-use ratings for print and digital workflows were 6.3 1.7 and 9.5 0.5, respectively (P = 0.0008). The mean inter-rater agreement rates for print and digital workflows were 81 17% and 79 15%, respectively (P = 0.998). The mean intra-rater treatment-decision reliability rate was 71.0 6.1% (range, 63.3 to 80.0).

Conclusions:

Compared to conventional paper printout workflow, use of digital image review workflows resulted in shorter review times, higher treatment-decision confidence levels and enhanced ease of use. Digital workflows optimize OCT image review efficiency.

Abstract No.: 200198

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N202+N203

Long Term Follow-Up of Central Serous Chorioretinopathy (CSCR) after Successful Treatment of Half-Dose Photodynamic Therapy (PDT) or Subthreshold Micropulse Laser (SMLT)

First Author: Anne Stephanie Lam BUAN

Co-Author(s): Guy CHEN, Mary HO, Sophia LI, Brelen MARTEN, Calvin Cp PANG, Clement THAM, Sze Lee WING, Yolanda YIP, Alvin L. YOUNG

Purpose:

To evaluate the recurrence rates of central serous chorioretinopathy (CSCR) in patients who had complete resolution of subretinal fluid after treatment with subthreshold micropulse laser (SMLT) or half-dose photodynamic therapy (PDT).

Methods:

This retrospective review analyzed 52 of the 66 patients from the “Half-Dose Photodynamic Therapy Versus Subthreshold Micropulse Laser for the Treatment of Central Serous Chorioretinopathy Treatment Trial”. The recurrence rate of CSCR in the first year after completing the clinical trial was compared between groups.

Results:

Of the 52 patients analyzed, 12 in the SMLT group and 5 in the half-dose PDT group experienced a recurrence of subretinal fluid. The recurrence rate was significantly higher in the MLT group vs. the PDT group (36.4% vs. 15.2%, p=0.02). Additionally, CSCR patients who recurred tended to have poorer baseline visual acuity (logMar 0.34 vs. 0.20, p=0.01) and retinal sensitivity (17.6 vs. 21.0, p=0.02). Logistic regression identified the treatment group (OR 6.64, 95% CI 1.55-28.4) and baseline retinal sensitivity (OR 0.82, 95% CI 0.69-0.96) as significant factors for predicting recurrence.

Conclusions:

While the outcome from our clinical trial showed that treatment outcomes were equivalent between the SMLT and PDT treatment arms, in the year after completing the study, the SMLT group exhibited a higher recurrence rate of CSCR compared to the half-dose PDT group. These findings underscore the importance of considering long-term treatment strategies for CSCR management.

Abstract No.: 200052

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N202+N203

Outcomes of vitrectomy with membrane peeling in Myopic Traction Maculopathy

First Author: Wai Yan LAM

Co-Author(s): Nicholas S.K. FUNG, Wai Ching LAM, Qing LI, Angie FONG

Purpose:

To review outcomes of vitrectomy with membrane peeling in patients with Myopic Traction Maculopathy(MTM)

Methods:

Patients with Myopic Traction Maculopathy(MTM) who underwent vitrectomy and membrane peeling between 2018-2023 were included. Baseline demographics, visual acuity(VA), lens status, axial length and OCT features were extracted. The primary outcome was to analyze factors associated with anatomical success. The secondary outcome was to analyze factors associated with VA improvement.

Results:

79 eyes(from 70 patients) were included. 35 eyes had myopic foveoschisis-only, 32 had macular holes (with or without detachment) and 12 had isolated macular detachment(without macular holes).,,91% of myopic foveoschisis-only eyes showed post-operative improvement in mean foveal thickness (MFT). The mean % MFT improvement was 34%. 57% had VA improvement (mean 7 letter gain). Outer-schisis group (p=0.0001) and eyes without lamellar-hole (p=0.009) were good prognostic factors.,,69% of isolated macular holes (without retinal detachment) achieved primary anatomical success. For the macular hole retinal detachment (MHRD) group, 79% had retinal reattachment and 21% achieved both retinal reattachment and macular hole closure.,,92% of isolated macular detachments achieved primary anatomical success. 75% showed post-op VA improvement with a mean 10 letter gain. A poorer baseline VA was associated with VA improvement.

Conclusions:

Vitrectomy with membrane peeling is effective in the management of MTM, especially those with myopic foveoschisis-only and isolated macular detachment. For foveoschisis-only, outer schisis and absence of lamellar hole are good prognostic factors of surgical outcome. MHRD is a poor prognostic factor.

Abstract No.: 200239

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N202+N203

Prediction of macular foveal microstructure recovery after idiopathic full-thickness macular hole surgery

First Author: Jing KONG

Co-Author(s): Ying WEN

Purpose:

Exploring the effectiveness of preoperative macular hole and intraretinal cyst (IRC) OCT parameters in predicting the closure classification of macular foveal microstructure in patients with idiopathic full-thickness macular hole (iFTMH) who achieve complete closure (grade B closure) after surgery.

Methods:

A retrospective study. A total of 92 eyes with iFTMH were included in the iFTMH group. All patients underwent best corrected visual acuity (BCVA) and OCT before and 3 months after surgery. Based on OCT image features, we proposed a new classification of macular fovea microstructure recovery degree: type B1 (ELM and EZ are continuous), type B2 (ELM and EZ are discontinuous), type B3 (ELM and EZ are discontinuous), and the capsular area was measured using Image J software. The paired sample t test, non-parametric test and ROC curve analysis were used for statistical processing.

Results:

First, of 92 cases, 18 cases were B1 type,B2 type 45 cases and B3 type 29 cases ; BCVA was significantly improved at 3 months after surgery, and the difference was statistically significant (B1: $p < 0.001$; B2: $p < 0.001$; B3: $p=0.018$); Hiatal base diameter BD, minimum diameter MIN, apical diameter, total diameter, arm length L, height, internal retinal capsule height, total lesion area, macular hole index, hiatus pulling factor and hiatus closure factor were significantly different among the three closure patterns($p < 0.05$). Second, BD, MIN and L have better prediction efficiency for type 3 closure(AUC >0.75).

Conclusions:

BD, MIN and L are the most important indicators for predicting the type 3 closure of macular fovea in patients with iFTMH.

Abstract No.: 200246

Dec 08, 2024 (Sun) 14:00 - 15:30 Venue: N202+N203

Prevalence and Risk Factors for Epiretinal Membrane (ERM) in a Hong Kong population aged 50 years and above

First Author: Natalie Nga Man TAM

Co-Author(s): John BUCHAN, Ivan S.C. CHOW, Angie H.C. FONG, Phoebe LAM, Allie LEE, Christopher K.S. LEUNG, Kendrick SHIH

Purpose:

Epiretinal membrane (ERM) is a common age-related retinal condition that can cause significant vision distortion and reduced quality of life. Interest in the prognostic factors and staging of ERMs has increased due to emergence of OCTs. Currently, no epidemiological studies have reported the prevalence and risk factors of ERM in Hong Kong. This study aims to determine the prevalence and risk factors of ERM in individuals aged 50 and older in the Southern District of Hong Kong using OCTs.

Methods:

This cross-sectional study randomly recruited individuals aged 50 and older in the Southern District. All participants underwent ocular and physical exams, along with a structured questionnaire. ERM prevalence was calculated, and ERM staging was performed. Univariate logistic regression analysed the association between the presence of primary and advanced primary ERMs with various risk factors, using R-Studio v.4.4.0 for analysis.

Results:

The prevalence of ERM, primary ERM and secondary ERM was 7.5%, 6.16% and 1.36% respectively. Significant positive associations with primary ERMs were found for age (OR: 1.05, 95% CI: 1.04-1.07), hypertension (OR: 1.29, 95% CI: 1.03-1.64), and high myopia (OR: 2.24, 95% CI: 1.52-3.20). Negative associations were observed for obesity (OR: 0.81, 95% CI: 0.66-1.00) and night shift work (OR: 0.69, 95% CI: 0.49-0.96).

Conclusions:

The prevalence of ERM in Hong Kong is comparable to other countries. With high myopia and age as significant risk factors, the prevalence of ERMs and other age-related vitreoretinal pathologies is expected to rise due to the global aging population, necessitating action to meet the increasing healthcare demands.

Abstract No.: 200162

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

A novel model of traumatic optic neuropathy under direct vision through anterior orbital approach in non-human primates

First Author: Zhiqiang XIAO

Purpose:

To establish a novel TON model in non-human primates under direct vision through the anterior orbital approach and a comprehensive evaluation system.

Methods:

Three cynomolgus monkeys were subjected to a partial optic nerve transection in one eye (PONT eye) via the anterior orbital approach. Visual function was systematically evaluated one week before the surgical procedures and at four subsequent time points after the surgical procedures. These assessments included tests for pupillary light reflex, optokinetic nystagmus, electroretinogram (ERG), and visual evoked potential (VEP). Additionally, the structures of the optic nerve and retina were observed using 9.4 T Magnetic resonance imaging (MRI), fundus photography, and optical coherence tomography. After 12 weeks, the animals were euthanized for detailed pathological examination of the optic nerve and retina using immunostaining.

Results:

The optic nerve was partially transected 3 mm posterior to the eyeball under direct vision. Subsequent MRI indicated an increase in T2 signal and T1 contrast enhancement at the transection site. The PONT eyes exhibited a decline in visual acuity and impaired responses in ERG and VEP, and showed a reduced thickness of the retinal nerve fiber layer and ganglion cell layer. Immunostaining confirmed the transection site of optic nerve and associated inflammation, and also showed a reduced survival rate of retinal ganglion cells in the PONT eyes.

Conclusions:

This study established a novel, minimally invasive TON model in non-human primates under direct visualization, which demonstrated typical declines in visual function and provided clear indications of optic nerve damage.

Abstract No.: 200087

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

A radiotherapy sensitizer for uveal melanoma that interrupts Cu-Fe balance

First Author: Yu HUA

Co-Author(s): Shengfang GE, Jing RUAN, Jie YU

Purpose:

To develop a synergetic drug that can enhance the radiotherapy sensitivity of UM by disrupting the cellular homeostasis of copper and iron.

Methods:

A micelle conjugated with divalent iron ions was prepared. The morphology was characterized using transmission electron microscopy, and the particle size was measured using dynamic light scattering. Cellular sub-localization was examined using confocal microscopy and TEM. Intracellular copper and divalent iron were detected using specific probes and inductively coupled plasma mass spectrometry (ICP-MS). The efficacy of the nanodrug combined with radiation on cell proliferation was assessed using the CCK8 assays and colony formation assays. The transcription and protein alterations of genes related to ferroptosis and copper homeostasis were examined using quantitative PCR and Western blot.

Results:

After irradiation, bulk-RNA sequencing revealed the changes in genes and pathways related to ferroptosis and copper metabolism in UM cells. Radiation induced ferroptosis as expected. Additionally, radiation elevated the levels of intracellular copper ions, which could potentially trigger radiation resistance. Therefore, we hypothesized to prepare a nanodrug that can further promote radiation-induced ferroptosis and reduce copper levels to counteract potential radiation resistance. The nanodrug was verified to enhance the radiotherapy sensitivity of UM in vitro and in vivo. Mechanistically, the drug increased the level of divalent iron ion, aggravated ferroptosis, and decreased the level of copper ion, interrupting the Cu-Fe homeostasis.

Conclusions:

The nanodrug can promote radiation-induced ferroptosis and resist radiation resistance caused by elevated copper ions, providing a novel idea for UM radiotherapy.

Abstract No.: 200128

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

Aurora A Kinase Inhibition Is Synthetic Lethal with the Activation of MYCN in Retinoblastoma

First Author: Qili LIAO

Co-Author(s): Jiayan FAN, Xianqun FAN, Renbing JIA

Purpose:

RB1 inactivation and MYCN activation have been documented as common oncogenic alterations in retinoblastoma (RB). Direct targeting of RB1 and MYCN has not yet been proven to be feasible. The current treatment options for RB mainly consist of conventional chemotherapy, which inevitably poses health-threatening side effects. Here, we aimed to screen an in-house compound library to identify potential drugs for the treatment of human RB.

Methods:

Aurora A kinase (AURKA) inhibitors were identified by differential viability screening with a tool compound library, and the pharmacological safety and efficacy of candidate drugs were further validated in zebrafish and RB patient-derived xenograft (PDX) models in vivo. Further CUT & Tag assay, ChIP-qPCR and RNA seq performances showed that MYCN binds to the AURKA promoter and upregulates its transcription, suggesting that AURKA inhibition induces synthetic lethality in Retinoblastoma.

Results:

In this study, we revealed that AURKA inhibitors (AKIs) exhibited high therapeutic efficacy against RB both in vitro and in vivo. Mechanistically, we found that MYCN could bind to the AURKA promoter region to regulate its transcription, thereby promoting AURKA expression and consequently driving RB progression. Interestingly, AURKA inhibition exhibited synthetic lethality with RB1-deficient and MYCN-amplification in RB cells.

Conclusions:

Collectively, these findings demonstrate that AURKA is crucial for RB progression and further expanded the current understanding of synthetic lethal therapeutic strategies. Our study indicates that AURKA inhibitors may represent a new therapeutic strategy for selectively targeting RB with RB1-deficient and MYCN-amplification patients to improve the prognosis of aggressive types of RB patients.

Abstract No.: 200177

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

CYTORNFAT1 feedback loop regulates epithelialmesenchymal

First Author: Rong ZHANG

Purpose:

Epithelial mesenchymal transition (EMT) occurring in retinal pigment epithelial cells (RPE) is a crucial mechanism that contributes to the development of age-related macular degeneration (AMD), a pivotal factor leading to permanent vision impairment. Long non-coding RNAs (lncRNAs) have emerged as critical regulators orchestrating EMT in RPE cells. In this study, we explored the function of the lncRNA CYTOR (cytoskeleton regulator RNA) in EMT of RPE cells and its underlying mechanisms.

Methods:

Through weighted correlation network analysis, we identifed CYTOR as an EMT-related lncRNA associated with AMD. Experimental validation revealed that CYTOR orchestrates TGF-β1-induced EMT, as well as proliferation and migration of ARPE-19 cells. Further investigation demonstrated the involvement of CYTOR in regulating the WNT5A/NFAT1 pathway and NFAT1 intranuclear translocation in the ARPE-19 cell EMT model. Mechanistically, CHIP, EMSA and dual luciferase reporter assays confrmed NFAT1's direct binding to CYTOR's promoter, promoting transcription.

Results:

Reciprocally, CYTOR overexpression promoted NFAT1 expression, while NFAT1 overexpression increased CYTOR transcription. These fndings highlight a mutual promotion between CYTOR and NFAT1, forming a positive feedback loop that triggers,the EMT phenotype in ARPE-19 cells.

Conclusions:

These discoveries provide valuable insights into the molecular mechanisms of EMT and its association with AMD, ofering potential avenues for targeted therapies in EMT-related conditions, including AMD.

Abstract No.: 200160

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

Combination of single-cell and bulk RNA seq reveals the immune landscape in retinal ischemia-reperfusion injuryRetinoblastoma

First Author: Shan HE

Purpose:

Retinal ischemia-reperfusion injury (RIRI) is a common mechanism of various retinal ischemic diseases. This study aimed to reveal the immune landscape of RIRI, explore the molecular mechanism of RIRI and potential therapeutic targets.

Methods:

Bulk RNA sequencing (bulk RNA-seq) dataset (PRJNA859197) and single-cell RNA sequencing (scRNA-seq) dataset (PRJCA008174) were obtained from the BioProject database. In the bulk RNA-seq, the R package ‘Deseq2’, ‘WGCNA’ and cytoscape software were used to jointly screen hub genes. Subsequently, the R package ‘Seurat’ was used to dimensionality reduction clustering and grouping, ‘CellChat’ was used for intercellular communication analysis. The expression of immune hub genes was verified in mouse samples through quantitative real-time polymerase chain reaction (qPCR) and immunofluorescence.

Results:

Through the bulk-RNA seq, Stat2, Irf7, Irgm1, Igtp, Parp9, Irgm2, Nlrc5 and Tap1 were identified as hub genes. Moreover, these hub genes exhibit a strong correlation with various immune cells. ScRNA-seq revealed six clusters of immune cells, with Irf7 predominantly found in microglia and Tap1 in dendritic cells. Therefore, Irf7 and Tap1 are considered as immune hub genes of RIRI. Furthermore, these immune hub genes were verified qPCR. Finally, the localization of Irf7 and Tap1 in microglia and dendritic cells were confirmed in immunofluorescence.

Conclusions:

In the acute phase of RIRI, Irf7 in microglia and Tap1 in dendritic cells have the potential to be key therapeutic targets to reduce inflammation and promote neurological function recovery.

Abstract No.: 200073

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

Elesclomol-elicited Cuproptosis Abrogates Cisplatin Resistance in Uveal Melanoma

First Author: Tianyu ZHU

Co-Author(s): Peiwei CHAI, Yongyun LI, Renbing JIA

Purpose:

This study aims to elucidate the mechanisms underlying chemoresistance in uveal melanoma (UM) and identify potential therapeutic strategies for overcoming this resistance.

Methods:

Cisplatin-resistant UM cell lines were developed and subjected to multi-omics analysis including RNA sequencing, metabolomics, and CUT&Tag. The therapeutic potential of elesclomol against chemoresistant UM was validated through zebrafish models, orthotopic xenografts, and patient-derived xenografts.

Results:

Chemoresistant UM cells exhibited a significant dependence on mitochondrial respiration rather than glycolysis. This metabolic reprogramming was associated with increased sensitivity to elesclomol, which functions by targeting Fe-S cluster proteins and inducing DLAT aggregation. Furthermore, our findings demonstrated that FDX1 deficiency re-sensitizes chemoresistant UM cells to elesclomol and attenuates copper-triggered cell death.

Conclusions:

This study uncovers a metabolic shifting from glycolysis to mitochondrial respiration in chemoresistant UM cells, highlighting the promise of elesclomol as an effective therapeutic agent.

Abstract No.: 200126

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

FTO elicits tumor neovascularization in cancer-associated fibroblasts through eliminating m6A modifications of multiple pro-angiogenic factors

First Author: Qili LIAO

Co-Author(s): Peiwei CHAI, Renbing JIA

Purpose:

Cancer-associated fibroblasts (CAFs) exhibit notable versatility, plasticity, and robustness, actively participating in cancer progression through intricate interactions within the tumor microenvironment (TME). N6-methyladenosine (m6A) modification is the most prevalent modification in eukaryotic mRNA, playing essential roles in mRNA metabolism and various biological processes. Howbeit, the precise involvement of m6A in CAF activation remains enigmatic.

Methods:

With the support of single-cell transcriptome analysis, RNA-seq, meRIP-seq and other advanced experimental methods, this study analyzed the changes in the gene expression of normal fibroblasts (NFs) and CAFs. In vitro and in vivo experiments, the effects of FTO in CAF on vascularization in the tumor microenvironment were determined.

Results:

In this study, we revealed that the m6A demethylase FTO supports CAF-mediated angiogenesis through activation of EGR1 and VEGFA in conjunctival melanoma (CoM). First, single-cell transcriptome analysis revealed that FTO was specifically upregulated in the CAF population, thereby contributing to the hypo-m6A status in the TME of CoM. Moreover, CAFs of CoM displayed extensive proangiogenic potential, which was largely compromised by FTO inhibition, both in vitro and in vivo. By employing multi-omics analysis, we showed that FTO effectively eliminates the m6A modifications of VEGFA and EGR1. This process subsequently disrupts the YTHDF2-dependent mRNA decay pathway, resulting in increased mRNA stability and upregulated expression of these molecules.

Conclusions:

Collectively, our findings initially indicate that the upregulation of FTO plays a pivotal role in tumor development by promoting CAF-mediated angiogenesis. Therapeutically, targeting FTO may show promise as a potential antiangiogenic strategy to optimize cancer treatment.

Abstract No.: 200031

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

Histone lactylation-boosted ALKBH3 potentiates tumor progression and diminished promyelocytic leukemia protein nuclear condensates by N1-Methyladenosine demethylation of SP100

First Author: Xiang GU

Purpose:

N1-Methyladenosine (m1A) RNA modification represents an important regulator of RNA metabolism and participates in carcinogenesis. However, the role of m1A modification in uveal melanoma (UM) remains enigmatic.

Methods:

m1A dot-blot assays and survival analysis were used to explore decreased global m1A levels, indicating a poor prognosis of UM. Multiomic analysis of meRIP-seq, RNA-seq and iTRAQ elucidated that m1A RNA modification posttranscriptionally promoted the expression of SP100, a core component for PML condensates.

Results:

We found that histone lactylation enhances ALKBH3 expression and simultaneously attenuates the formation of tumor-suppressive PML condensates by removing the m1A methylation of SP100, promoting the malignant transformation of cancers. First, ALKBH3 is specifically upregulated in high-risk UM due to the excessive histone lactylation levels, referring to m1A hypomethylation status. Moreover, the multiomics analysis subsequently identified that SP100 serves as a downstream candidate target for ALKBH3. Therapeutically, the silencing of ALKBH3 exhibits efficient therapeutic efficacy in UM both in vitro and in vivo, which could be reversed by the depletion of SP100. Mechanistically, we found that YTHDF1 is responsible for recognition of the m1A methylated SP100 transcript, which increases its RNA stability and translational efficacy.

Conclusions:

We initially demonstrated that m1A modification is necessary for tumor suppressor gene expression, expanding the current understanding of dynamic m1A function during tumor progression. In addition, our results indicate that lactylation-driven ALKBH3 is essential for the formation of PML nuclear condensates, which bridges our knowledge of m1A modification, metabolic reprogramming, and phase-separation events.

Abstract No.: 200230

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

Research on the Relationship Between CD47 Expression and the Prognosis as well as Immune Microenvironment of Uveal Melanoma

First Author: Jing KONG

Co-Author(s): Yungang DING, Ying WEN

Purpose:

The study was to investigate the relationship between CD47 and the immune microenvironment in Uveal Melanoma (UVM). Additionally, it aimed to explore the correlation between CD47 and the polarization of M1/M2 tumor-associated macrophages.

Methods:

We first downloaded the gene expression data of 80 UVM patients from the TCGA database, and identified the relationship between exosomal marker genes CD63, CD9 and immune checkpoint CD47. The RclusterProfiler software package was used to analyze estimate score and immune cell infiltration. Additionally, univariate COX regression analysis was used to analyze the prognosis of UVM patients. The expressions of CD9, CD63, CD47 and CD163 in UVM pathological samples were detected by immunohistochemistry.

Results:

Firstly, bioinformatic and pathological analysis showed that CD63, CD9 and CD47 were prognostic risk factors, and the distribution trend of CD63 was consistent with M2 macrophages. Immunohistochemistry showed that the distribution of CD63 in central and peripheral tumors was the same as that of M2 macrophages (CD163+) in tumors. Secondly, UVM exosome related genes were searched in the ExoCarta database, and correlation analysis was performed between the top 10 expressed genes and CD47. The results showed a significant positive correlation. CD47 was finally selected. CIBERSORT analysis showed that the high expression of CD47 was positively correlated with M2 macrophage infiltration.

Conclusions:

First, UVM exosomes are correlated with patient prognosis and M2 macrophage infiltration. Second, as a signal transmitter, UVM exosomes can carry immune checkpoint CD47, causing polarization of M2 macrophages and forming tumor immune escape microenvironment. CD47 is a risk factor for prognosis.

Abstract No.: 200201

Dec 07, 2024 (Sat) 08:30 - 10:00 Venue: N206-208

The Temporal Dynamics of Pathological Profile and Functional Impairment in Neuromyelitis Optica Spectrum Disorders associated Optic Neuritis

First Author: Xiayin YANG

Co-Author(s): Ellen Shaoying TAN

Purpose:

Optic neuritis (ON) associated with Neuromyelitis Optica Spectrum Disorders (NMOSD) can lead to irreversible vision loss, especially in Asians. The absence of comprehensive analyses tracking disease progression hinders timely observation and intervention. This study aims to map disease progression histologically and functionally in an NMOSD-ON animal model.

Methods:

NMOSD-ON group animals received injections of aquaporin-4 immunoglobulin G (AQP4-IgG) and human complement into the posterior optic nerve, repeated twice at 24-hour intervals. The control group received normal immunoglobulin G (IgG) and human complement. Histological analyses assessed AQP4, glial fibrillary acidic protein (GFAP), microglial activation, myelin oligodendrocyte glycoprotein (MOG), and retinal ganglion cell (RGC) degeneration. Gene expression profiling of inflammatory cytokines was conducted at various time points (Baseline, Day 2, Week 1, Week 2, Week 4). In vivo visual and retinal structural assessments were performed weekly up to Week 4.

Results:

AQP4-IgG and human complement administration triggered early astrocyte pathology, marked by loss of AQP4 and GFAP, and upregulation of inflammatory markers in Week 1. By Week 2, demyelination and damage to RGCs and nerve fibers occurred. Functionally, delays in visual evoked potential N1 latency and reduced N1P1 amplitudes were observed, alongside decreased positive scotopic threshold response (pSTR) amplitude and retinal nerve fiber layer thinning.

Conclusions:

This study delineates the progression timeline of NMOSD-ON, linking histological and functional impairments to retinal changes in an optimized animal model.

Abstract No.: 200185

Poster No.: -P027 Panel No.: P027

A Systematic Review of the Efficacy and Safety of Topical Immunomodulatory Treatments in Prevent Recurrence after Herpes Stromal Keratitis

First Author: Matthew Chun-wang MA

Co-Author(s): Kendrick SHIH

Purpose:

To systematically review published literature on efficacy and safety of topical immunomodulatory treatments in preventing recurrence after herpes stromal keratitis (HSK).

Methods:

An Entrez Pubmed search was performed on the 3rd of July 2024 from 1994 to 2024 using the following search terms: ‘herpes stromal keratitis’, ‘treatment’, ‘topical’, ‘recurrence’. We further curated the results based on the filter criteria of including prospective studies in humans and published in English language.

Results:

A total of 6 publications were reviewed. Immune-regulatory drugs including cyclosporine-A, tacrolimus, and flurbiprofen demonstrate therapeutic benefits when combined with antivirals. Cyclosporine-A resulted in improvements in cornea optical density and best-corrected visual acuity (BCVA) alongside regression of corneal vessel, stromal infiltrates, and neovascularization. No significant difference between cyclosporine-A and prednisolone in intraocular pressure and BCVA scores was reported. Evidence of recurrence upon tapering off cyclosporine-A therapy. The case group including tacrolimus showed greater improvement in BCVA scores compared to the control group of prednisolone and acyclovir. The duration of resolution was significantly shorter in the prednisolone group compared to the flurbiprofen group.

Conclusions:

Immune-regulatory drugs including cyclosporine-A, tacrolimus, and flurbiprofen demonstrate therapeutic benefits when combined with antivirals. Although differences in effect between topical steroids and immune-regulatory drugs are minimal, immune-regulatory drugs may play a substantial role in adjunction to steroid-antiviral regimens and occurrences where the patient is unresponsive to topical steroid treatment. Further studies with longer follow-ups and larger samples are needed to confirm the long-term efficacy of immune-regulatory drugs in reducing HSK recurrence.

Abstract No.: 200068

Poster No.: -P028 Panel No.: P028

Dry eye disease induced by methamphetamine use: A cross-sectional study

First Author: Chak Fung HO

Co-Author(s): Calvin Cp PANG, Clement Cy THAM, Kelvin Kl CHONG

Purpose:

This study investigates dry eye disease(DED) caused by methamphetamine use.

Methods:

20 methamphetamine users and 20 age, sex-matched control(40% female) were recruited for comparing both aqueous, lipid-related parameter, including Lipid layer thickness(LLT), meiboscore, tear meniscus height(TMH), non-invasive tear break up time(NITBUT), oxford scale corneal staining, fluorescence tear break up time(FBUT), Schirmer's test(ST) and lid margin findings, 40 right eye being studied. Besides, tear osmolarity was measured to assess tear film instability in methamphetamine users and use OSDI to evaluate DED severity. Mann-Whitney U test and chi-square test for analysing continuous and ordinal data respectively. All data below present as median(inter-quartile range(IQR: Q3-Q1)).

Results:

Subject's age was 41(IQR:47-34). Methamphetamine use duration was 15(IQR:24-10) years. Methamphetamine group's tear osmolarity was 313.5(IQR:339.8-300.8) mOsm/L, 66.7%>308mOsm/L, had tear film instability according to TFOS Dry Eye WorkshopII. Methamphetamine user OSDI scored 13.4(IQR:39.74-6.70), with 40% moderate-to-severe DED and 50% has normal score<13. All control have normal ODSI<13.,LLT in methamphetamine group was significantly lower, 58(IQR:75.8-38.3)nm vs 81.5(IQR:90.25-75)nm, p=0.001. Methamphetamine group have a higher meiboscore, statistically significant in lower lid, 1(2-1) vs 0(1-0), p<0.001, but not significant in upper lid. Methamphetamine group had shorter FBUT, 2.52(IQR:4.81-1.75)s vs 4(IQR:6.25-4) s, p=0.002. Methamphetamine group had more severe lid margin thickening in 0-3 scale with 3 is more thicken, 2(2-1) vs 0(1-0), p<0.001. Other test statistically insignificant between two groups.

Conclusions:

Methamphetamine users have more severe DED, especially in lipid-related parameter indicating evaporative dry eye and meibomian gland dysfunction. OSDI results supporting methamphetamine users tend to have severe DED while lacking awareness. Therefore, screening is important.

Abstract No.: 200051

Poster No.: -P029 Panel No.: P029

Factors of Late Presentation with Advanced Cataract in the Hong Kong Adult Population

First Author: Yan Yin LO

Co-Author(s): John BUCHAN, Jonathan CHAN, Ivan S.C. CHOW, Angie H.C. FONG, Nicholas S.K. FUNG, Phoebe C.L. LAM, Allie LEE, Christopher K.S. LEUNG, Kendrick C. SHIH

Purpose:

Cataract is the main cause of blindness and impaired best-corrected visual acuity (BCVA) in Hong Kong. This study aims at analysing the risk factors for late presentation of patients with advanced cataract, while also investigating the motivation factors for eye screening programme attendance.

Methods:

The study is a case-control study. Participants were classified into cases and controls by their BCVA at primary diagnosis. BCVA and demographic data were collected from the database and information of other risk factors were collected by questionnaire.

Results:

175 participants were recruited for this study, with 86 cases. 56.6% are females and mean age is 69 years old. Univariate analysis shows that low socioeconomic status is associated with late presentation of advanced cataract, as measured by monthly household income, housing type, education level and occupation. Other significant factors include increasing age, lack of social support, diabetes, hypertension, heart disease, no primary family history of cataract and lowered mobility. Presence of symptoms and recommendations from friends or family are the common reasons for screening programme attendance. The general knowledge level about cataract is low, while word-of-mouth and healthcare providers are useful channels for providing cataract information to patients.

Conclusions:

The findings show that low socioeconomic status, increasing age, lack of social support and medical co-morbidities are significant risk-factors for late presentation of cataract, emphasizing the importance of active eye health promotion to prevent unnecessary vision loss among underprivileged populations.

Abstract No.: 200118

Poster No.: -P030 Panel No.: P030

Benchmarking large language models performance in question-answering for dry eye disease and evidence-based enhancement by a new pipeline.

First Author: Wai Chak CHOY

Co-Author(s): Carmen Km CHAN, Carol CHEUNG, Allan CHU, Kenneth LAI, Calvin Cp PANG, Clement Cy THAM, Wilson YIP, Alvin L. YOUNG, Hunter YUEN, Kelvin Kl CHONG

Purpose:

Performance of large language models in medical question-answering has been reported to be subpar. We have developed a customised pipeline (EyeLM01) to enhance their performance. We aimed to benchmark the base model's performance for answering enquires on dry eye disease, and the potential performance enhancement by EyeLM01.

Methods:

Frequently asked questions for dry eye disease were collected from 100 websites with customised scraper. Topic modelling was performed to identify the most common 20 questions. We included PubMed and EyeWiki articles to the EyeLM01 framework. Performance of latest base models (Gemini-1.5-pro and GPT-4o) and their enhanced version was evaluated by 2 independent reviewers. Performance was graded by accuracy, comprehensiveness, and organisation on a 5-point scale. T-test and chi-square test were employed to evaluate the performance.

Results:

Enhancement in model accuracy was noted for Gemini alone. (estimate=4.45 vs 5.00, P=0.0235) Improvement in comprehensiveness was identified for both Gemini (estimate=4.70 vs 4.05, P=0.0026) and GPT (estimate=5.00 vs 3.90, P<0.0001). Enhancement in organisation was noted for both Gemini (estimate=4.10 vs 4.60, P=0.0386) and GPT (estimate=3.50 vs 4.95, P<0.0001). Overall, EyeLM01 enhanced GPT-4o outperformed the other models (accuracy=5.00, P=0.0361; comprehensiveness=4.95, P<0.0001; organisation=5.00, P<0.0001)

Conclusions:

Our findings demonstrated the potential for large language models to deliver accurate responses. The implementation of EyeLM01 boosted the accuracy, comprehensiveness and organisation of responses. With the possibility of synchronising up-to-date findings from publications and credible sources, this paved way for the possibility of evidence-based response generation for safer clinical applications.

Abstract No.: 200135

Poster No.: -P031 Panel No.: P031

A novel, convenient, and practical model to predict asymptomatic moderate-severe dry eye disease (DED) among Hong Kong drug abusers without the need for ophthalmologic examinations

First Author: Yui Cheung NG

Co-Author(s): Kelvin Kam Lung CHONG, Calvin Cp PANG, Clement Cy THAM

Purpose:

Our prior work (ASM Ref:200110) indicated that the Ocular Surface Disease Index(OSDI) had a poor ability to detect asymptomatic DED. This study aimed to develop a handy and reliable tool to distinguish hidden moderate-severe DED in drug abusers in front-line psychotropic rehabilitation and counseling centers without the need for an ophthalmologist's involvement.

Methods:

31 drug abusers (31eyes; 23males; 8females; mean age: 40.1±8.6 years) were included in this study Abusers were divided into mild and moderate-severe DED based on OSDI, non-invasive tear breakup time, Schirmer test, ocular staining, and meibomian gland dysfunction grading, by using DEWII dry eye severity grading system. A binary logistic regression model was established by utilizing OSDI scores and drug abuse parameters, including duration and frequency of abuse, number of abused drugs, and Severity of Dependence Scale (SDS) score. To compare their performance in moderate-severe DED prediction, the area under the receiver operating characteristic curve (AUC), sensitivity, and specificity of both the model and OSDI were used.

Results:

10 mild and 21 moderate-to-severe DED were classified. The model had good accuracy (AUC=0.795) in predicting. Instead, OSDI only had satisfactory accuracy (AUC=0.610). The model had higher sensitivity and specificity (76.2%; 80%) with the classification than that of OSDI(52.4%; 80%).

Conclusions:

The new model demonstrated highly enhanced accuracy, sensitivity and convenience to identify asymptomatic DED using easily accessible variables by non-specialized trained social workers. It is highly feasible and practical to apply this calculator in the front-line drug addiction rehabilitation centers to protect the ocular health of drug abusers, even though resources for ophthalmology consultation are scarce.

Abstract No.: 200118

Poster No.: -P030 Panel No.: P030

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First Author: Wai Chak CHOY

Co-Author(s): Carmen Km CHAN, Carol CHEUNG, Allan CHU, Kenneth LAI, Calvin Cp PANG, Clement Cy THAM, Wilson YIP, Alvin L. YOUNG, Hunter YUEN, Kelvin Kl CHONG

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Abstract No.: 200135

Poster No.: -P031 Panel No.: P031

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Co-Author(s): Kelvin Kam Lung CHONG, Calvin Cp PANG, Clement Cy THAM

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Conclusions:

The new model demonstrated highly enhanced accuracy, sensitivity and convenience to identify asymptomatic DED using easily accessible variables by non-specialized trained social workers. It is highly feasible and practical to apply this calculator in the front-line drug addiction rehabilitation centers to protect the ocular health of drug abusers, even though resources for ophthalmology consultation are scarce.

Abstract No.: 200227

Poster No.: -P032 Panel No.: P032

Therapeutic use of topical insulin to treat refractory neurotrophic keratopathy

First Author: Andrea Chor Kiu AU

Co-Author(s): Wing Man HO, Kai Wang Kenneth LI, Anita Lai Wah LI

Purpose:

To present the result of four patients with refractory neurotrophic keratopathy (NK) that were treated with topical insulin.

Methods:

This retrospective case series included four patients started with topical insulin for NK not responsive to conventional treatment. Topical insulin was prepared by mixing short acting insulin in artificial tears with a polyethylene glycol and propylene glycol base at a concentration of 1 unit per mL, prescribed 4 to 6 times daily.

Results:

Four patients, aged 31 to 67 years old with stage 1 to 2 NK (3 patients with stage 2) and reduced corneal sensation from herpetic stromal keratitis in two patients, surgical resection causing trigeminal nerve damage in one patient and facial nerve palsy in one patient were included. All patients failed to respond to conventional treatment including topical lubricants, steroid, cyclosporine, bandage contact lens, punctal occlusion, amniotic membrane grafting and temporary tarsorrhaphy. Each patient was started on topical insulin drops with complete corneal re-epithelialization in two and subjective symptom improvement in one within 7 to 14 days. One patient defaulted subsequent follow up but his epithelial defect healed at month 4 following insulin treatment of 1 month and regular lubricants.

Conclusions:

Topical insulin has been reported to be an effective and safe treatment for refractory neurotrophic keratopathy. It showed encouraging results in some of our patients who failed all standard conventional treatment. Further studies are needed to determine the long term efficacy and safety.

Abstract No.: 200194

Poster No.: -P033 Panel No.: P033

A rare case of Corneal Perforation in a Breast Cancer patient receiving HER2 targeted chemotherapy

First Author: Anita Lai Wah LI

Co-Author(s): Wing Man HO, Kai Wang Kenneth LI

Purpose:

It is more commonly known that Epidermal Growth Factor inhibitors can cause corneal melt, however HER2 receptor inhibitors are rarely reported to have ocular toxicity. This is a case report on a HER2 receptor positive breast cancer patient who developed corneal perforation after receiving a combination of HER2 inhibitors (pertuzumab / trastuzumab) chemotherapy.

Methods:

A 67 year old lady presented to the ophthalmology department with left eye loss of vision and a sudden gush of fluid after her 6th cycle of combination HER2 inhibitor chemotherapy. She was found to have a central corneal perforation with flat anterior chamber. Chemotherapy was discontinued. After immediate glue and BCL was applied to the perforation site, surgery with multilayer amniotic membrane transplant was done for the patient and the anterior chamber was reformed. Her visual acuity remained at hand movements and the amniotic membrane transplant was well incorporated however there was obscuration of her visual axis by the scar and intumescent cataract. 5 months later after the patient's general condition was stabilized, a triple procedure-combined penetrating keratoplasty, extracapsular cataract extraction with intrascleral haptic fixated intraocular lens was done for the patient.

Results:

Her visual acuity one week after surgery was 0.2 in the left eye and she enjoyed much improved vision.

Conclusions:

This is a rare report on severe corneal melt leading to perforation related to HER2 receptor inhibitor use in a breast cancer patient.

Abstract No.: 200275

Poster No.: -P034 Panel No.: P034

Correlation between Tear Film Lipid and Meibomian Gland Structure in Mild to Moderate Meibomian Gland Dysfunction

First Author: Yiu Man Hanson WONG

Co-Author(s): Kelvin Kam Lung CHONG, Zhichao HU, Stella Weng Chi SIO, Precious Gennelyn Gean UNTALAN

Purpose:

Patients with meibomian gland dysfunction (MGD) may demonstrate structural changes of meibomian gland (MG), which ultimately leads to gland atrophy and functional loss in both the quantity and quality of meibum secretion. We evaluated the correlation of the MG architecture with both lipid layer thickness (LLT) and expressed meibum quality in mild to moderate MGD patients.

Methods:

During the enrolment of a randomized clinical trial (Clinicaltrial.gov registration: NCT05577910), LLT (average, maximum, minimum) were estimated using the LipiView interferometer (TearScience Inc, Morrisville, NC). MG morphologies in both the upper lid (UL) and the lower lid (LL) are graded in terms of the meiboscore (a score of 0-3), and the meibograde which further divides into 3 distinct categories (a score of 0-3 in each category): gland distortion, gland shortening, and gland dropout. The quality of expressed meibum (a score of 0-3) in nasal, central and temporal portion of LL were scored by masked ophthalmologists. Data were analyzed by multiple linear regression using SPSS Statistics 29.0 software.

Results:

348 subjects aged 54.53±14.53 (264 females) were recruited. In our multiple linear regression model, average (P=0.006), maximum (P=0.049) and minimum (P=0.004) LLT were all significantly correlated with UL meibograde's gland dropout category. Yet, there were no statistically significant differences among other categories of UL or LL MG histopathologic changes, nor the quality of expressed meibum in nasal, central and temporal LL that were associated with LLT.

Conclusions:

Our cohort confirmed that morphological changes in MG, specifically UL MG gland dropout, were significantly related to the LLT.

Abstract No.: 200097

Poster No.: -P035 Panel No.: P035

Impact of Cocaine Use on Meibomian Gland Dysfunction and Ocular Surface Health: A Comparative Cross-sectional Study

First Author: Sze Wing LEE

Co-Author(s): Calvin Cp PANG, Clement Cy THAM, Kelvin Kl CHONG

Purpose:

Aim to investigate meibomian gland dysfunction (MGD) in cocaine users.

Methods:

Six cocaine regular users (6 right eyes) within past two years were recruited under the project supported by Beat Drug Fund (BDF210067). Subjective data was collected using Ocular Surface Disease Index (OSDI). We measured (lipid layer thickness--LLT, meiboscore, blinking rate) by TearScience LipiView II Interferometer, follicles, fluorescein tear breakup time (FBUT), (non-invasive keratography break-up time--NIKBUT, tear meniscus height--TMH) from OCULUS Keratograph 5M, and Schirmer's test (ST), comparing cocaine users and controls with age and sex matched.

Results:

Mean age of subjects was 31.7±6.5, consisted of 3 males and 3 females. Mean duration of cocaine use was 10.5±8.8 years. Mean OSDI score of subjects was 26.2±22.2, with 67% of individuals having dry eyes; while the control group have a much lower score of 5.3±4.8.,,Comparing two groups, LLT of cocaine group was significantly lower than control (49.5±9.3nm vs 71.3±19.7nm), p=0.039. Cocaine group have a higher meiboscore than control in lower lid (1.7±1.0 vs 0.8±0.6), p= 0.036, but not significant in upper lid. Cocaine group have worse results in follicles than control groups (0.7±0.8 vs 0±0), p=0.015.,Average FBUT of cocaine group is significantly lower, compared to controls (4.2±2.9 vs 7.0±1.9), p=0.048.,Blinking rate, NIKBUT, TMH and ST did not show statistically significant differences between two groups.

Conclusions:

Tear film instability is demonstrated by LLT, FBUT and meiboscore, suggested that cocaine significantly affected MGD, leads to evaporative dry eye.,As a result, drug-induced damage to ocular surface deserves more attention.,*Figures shown by mean±SD

Abstract No.: 200101

Poster No.: -P036 Panel No.: P036

Comparison of Dry Eye Manifestations Between Polysubstance Users, Monosubstance Users and Healthy Controls: a Prospective Cohort Study

First Author: Long Ngai CHONG

Co-Author(s): Calvin Cp PANG, Clement Cy THAM, Kelvin Kl CHONG

Purpose:

This study aims to compare the dry eye manifestations between polysubstance users, monosubstance users and healthy controls.

Methods:

15 polysubstance users (including cocaine, methamphetamine, ketamine, cannabis, zopiclone, heroin, ecstasy, nimetazepam, midazolam and codeine) and 15 monosubstance users of cocaine (n=6) or methamphetamine (n=9) were recruited (30 eyes with poorer dry eye parameters per subject) and compared with healthy controls. Dry eye parameters include schirmer's test (ST), Ocular Surface Disease Index (OSDI), tear meniscus height (TMH), non-invasive break-up time (NIKBUT), lipid layer thickness (LLT), papillae, follicle and meiboscore.

Results:

Mean age of the polysubstance and monosubstance groups: 36.6 (males=9 and females=6) vs 40.8 (males=9 and females=6).,Objective data: the monosubstance group had a significantly lower results in ST (8.5±7.8 vs 11.9±9.6 vs 23.1±9.3 mm, $p<0.001$) and average LLT (44.9±14.1 vs 51±13.6 vs 73.5±19.9 nm, $p<0.001$) than polysubstance group and healthy control. The polysubstance group reflected a poorer NIKBUT (average) result than the monosubstance group and control (7.18±5.2 vs 12.5±8.0 vs 16.8±3.2 s, $p<0.001$).,Subjective data: the polysubstance group had the highest mean scores of OSDI (33.3% had normal ocular surface, 13.3% had mild dry eyes symptoms, 6.7% moderate and 46.7% severe) than monosubstance and control groups (28.3±22.0 vs 25.5±22.1 vs 10.2±7.7, $p=0.141$).,TMH, meiboscore, papillae and follicle did not show significant differences.

Conclusions:

The polysubstance and monosubstance groups showed more dry eye manifestations in NIKBUT (average) test than the control, while polysubstance group was objectively better in ST and LLT but subjectively poorer in OSDI than monosubstance group.

Abstract No.: 200106

Poster No.: -P037 Panel No.: P037

Comparative Analysis of Dry Eye Disease (DED) Manifestations Among Active, Former, and Non-Drug Users.

First Author: Yuk Ki Peony WONG

Purpose:

This study aims to assess DED caused by drug use.

Methods:

45 subjects were categorized into three groups evenly: active drug users (Group 1, n=15), former (>15 month abstinence) (Group 2, n=15), and non-drug users (Group 3, n=15). Each group underwent ocular examination including slit lamp, LipiView, KG5 and Schirmer's test (ST), and OSDI. Kruskal-Wallis Test is used to analyse the significance of the results.

Results:

Median age of subjects is 44(IRQ), with 14 female (31.8%). Subjects were matched by age and gender in each group. Median OSDI score show significant differences across all 3 groups: (40.0 vs 26.79 vs 2.18) ($p<0.050$). Median LLT(mm) and NIKBUT(secs) of Group 1 and group 2 is significantly lower than group 3 ($p<0.050$). Median LLT(mm): 64.0 vs 55.5 vs 87.5. Median NIKBUT(secs): 9.98 vs 9.99 vs 16.54. TBUT; TMH; ST show no significant difference across groups ($p<0.05$). Median TBUT(secs) across groups – 3.35 vs 4.15 vs 5. Median TMH(mm): 0.25 vs 0.27 vs 0.25. Median ST(mm): 9.5 vs 8.0 vs 10.0.

Conclusions:

Active and ex-drug users show more severe dry eye signs and symptoms (especially MGD related) than non-drug users. In terms of objective dry eye parameters, similar results are observed between active and ex-drug users. In terms of subjective dry eye parameters, active drug users show more severe dry eye symptoms compared to ex-drug users. Thus, ex-users show some improvement in subjective dry eye symptoms; while the effect of drug use on objective dry eye signs is long lasting and cannot be recovered easily.

Abstract No.: 200237

Poster No.: -P038 Panel No.: P038

The correlation of quality of life and severity of dry eye disease in Hong Kong

First Author: Zhichao HU

Co-Author(s): Kelvin Kam Lung CHONG, Wing Yan HO, Yingsi LUO, Mark Joseph LAGAO

Purpose:

Dry eye disease is one of the most common eye diseases worldwide, which decreases the quality of life (QoL). This study aims to evaluate the QoL in mild to moderate dry eye disease (DED), and its correlation with DED severity.

Methods:

The 36-Item Short Form Health Survey (SF-36) was applied for accessing the QoL of subjects. The DED-related clinical parameters were investigated by ScoutPro Osmolarity System, Keratograph 5M, and slit lamp biomicroscope. Multiple linear regression (MLR) was applied for the analysis of correlation of SF36 with DED parameters on SPSS version 29. (Clinicaltrials.gov ID: NCT06089317)

Results:

91 subjects (67 females, 73.62%) aged 53.53 ±15.09 were included. Mean of physical component summary (PCS) and mental component summary (MCS) were 301.9 ± 58.08 and 306.90 ± 63.36. The result of the 8 domains of SF36 showed as follows: Physical functioning (PF) 85.39 ± 14.587, role-functioning physical (RP) 78.37 ± 322.44, body pain (BP) 80.08 ± 1.648, general health (GH) 58.65 ± 15.663, vitality (VT) 67.64 ± 18.764, social functioning (SF) 90.17 ± 12.567, role emotional (RE) 80.5 ± 3.10 and mental health (MH) 68.09 ± 17.148.,,In MLR, there is no correlation between the 8 domains of SF-36 and the Ocular Surface Disease Index, Tear breakup time, or non-invasive tear break time (NITBUT) first. RP showed a correlation with lower osmolarity (p= 0.03). RE showed a correlation with a longer NIKBUT average (p=0.005).

Conclusions:

RP and RE were highly related to DED severity. The mechanism and clinical application need to be further investigated.

e-poster Abstract No.: 200050

Diffuse lamellar keratitis as a rare complication of corneal foreign body removal: A case report

First Author: Christine LAM

Co-Author(s): Arnold CHEE, Ka Wai KAM, Stephanie KWOK, Eugenie MOK, Alvin L. YOUNG

Purpose:

Laser in situ keratomileusis (LASIK) is one of the most common corneal refractive surgeries to correct refractive error. Diffuse lamellar keratitis (DLK, “Sand of Sahara”) is an uncommon but potentially sight-threatening complication after LASIK and is elicited by epithelial injury during or after surgery. We present a case with history of LASIK developing DLK after corneal foreign body removal.

Methods:

A case report

Results:

A 36-year old man presented with right eye metallic foreign body injury after cutting metal at work, 9 years post-LASIK surgery. His presenting visual acuity was 20/20. Due to the presence of an underlying rust ring after removal of the metallic foreign body, a burr procedure was performed. The patient was followed up 2 days later where his visual acuity dropped to 20/200. Examination revealed grey subepithelial deposits at the LASIK flap interface. (Figure 1). After intensive topical corticosteroid treatment, the inflammation resolved gradually, and his vision recovered to 20/20.

Conclusions:

Diffuse lamellar keratitis is a rare post-LASIK complication that can be triggered by burr, which causes impairment of the corneal epithelial integrity and subsequent inflammation at the flap interface. Topical corticosteroid is the main medical treatment modality. All patients presenting to emergency department with corneal foreign body or trauma should be asked about past refractive surgery and should seek subspecialty care to prevent a delay in diagnosis and minimize potential complications.

e-poster Abstract No.: 200274

Association between Fluorescein Tear Breakup Time and Meibomian Gland Morphology in Mild to Moderate Meibomian Gland Dysfunction

First Author: Yiu Man Hanson WONG

Co-Author(s): Kelvin Kam Lung CHONG, Zhichao HU, Wai Yan LAM, Chun Fung Ken POON

Purpose:

Patients with meibomian gland dysfunction (MGD) will experience the histopathological changes of meibomian gland (MG). With gland atrophy and insufficient production of lipid, tear film becomes unstable and cannot be preserved on the corneal surface, eventually causing reduced tear breakup time (TBUT) and thus evaporative dry eye. We evaluated the correlation of the MG morphology architecture with fluorescein TBUT in mild to moderate MGD patients.

Methods:

Infrared meibography was performed using the LipiView interferometer (TearScience Inc, Morrisville, NC) during the enrolment of a randomized clinical trial (Clinicaltrial.gov registration: NCT05577910). MG morphologies in both the upper lid (UL) and the lower lid (LL) are graded by meiboscore (4-point scale, 0-3) and meibograde (4-point scale, 0-3 in 3 categories: distortion, shortening, and dropout). The fluorescein TBUT was recorded for 3 times by masked ophthalmologists, and the average value was taken. Data were analyzed by multiple linear regression and Kruskal-Wallis test using SPSS Statistics 29.0 software.

Results:

348 subjects aged 54.53±14.53 (264 females) were recruited. In our regression model, LL MG distortion (P=0.015) was significantly correlated with fluorescein TBUT. There were also significant differences for TBUT across different groups of severity of LL MG distortion (P=0.008). Yet, there were no statistically significant differences between TBUT and other MG meiboscore or meibograde in UL or LL.

Conclusions:

LL meibograde's gland distortion could be a sensitive indicator with diagnostic potential for fluorescein TBUT in mild-to-moderate MGD patients, and further studies on early evaluation of the morphologic analysis in LL MG might be warranted for predicting dry eye severity.

e-poster Abstract No.: 200282

Association between primary cocaine use and/or primary methamphetamine use and the distribution of predominant aqueous-deficient dry eye, predominant evaporative dry eye and combined dry eye - A prospective study

First Author: Wing Lam TAI

Co-Author(s): Kelvin Kam Lung CHONG, Calvin Cp PANG, Clement Cy THAM

Purpose:

This study aims to investigate any association between the type of primary drug use (cocaine, methamphetamine, or mixed type) with the type of dry eye disease.

Methods:

Under a BeatDrugFund project (BDF210067), 6 cocaine primary users, 18 methamphetamine primary users and 11 users consuming both primarily were recruited. Measurements included lipid layer thickness (LLT) and meiboscore by TearScienceTM_ LipiViewTM_II_Interferometer, tear meniscus height (TMH), average non-invasive tear break up time (NIKBUT) by OCULUS_Keratograph_5M, and Schirmer's test. 35 right eyes were categorized into Aqueous-Deficient Dry Eye (ADDE) if Schimer's test result is below 10mm and tear meniscus height of below 0.2mm, Evaporative Dry Eye (EDE) if sum of upper lid and lower lid meiboscore is above 2, LLT below 60nm and NIKBUT of below 10 seconds, or Combined type if the eye demonstrated parameters under both categories.

Results:

Among cocaine group, there are 2 ADDE, 4 EDE. Among methamphetamine group, there are 2 ADDE, 6 EDE and 10 combined. Among polyusers, there are 2 ADDE, 4 EDE and 5 combined.

Conclusions:

There may not be sufficient evidence to prove a significant association between drug use type and dry eye type.

e-poster Abstract No.: 200076

The Applications of 0.1% topical Tacrolimus in Ophthalmology: A Review

First Author: Patricia LAM
Co-Author(s): Julia YY CHAN

Purpose:

To summarize evidence-based indications of topical 0.1% tacrolimus in the treatment of ophthalmological diseases

Methods:

A comprehensive review of literature was conducted using PubMed, Embase and Wanfang database. Case series, prospective and retrospective studies, as well as randomized controlled trials were analyzed to provide insights into the therapeutic potential of topical 0.1% tacrolimus.

Results:

0.1% topical tacrolimus significantly improves the signs and symptoms of a wide spectrum of inflammatory eye conditions of the anterior segment, namely allergic conjunctivitis, ocular cicatricial pemphigoid, nodular episcleritis, graft rejection, graft-versus-host diseases, dry eye disease, autoimmune keratitis, blepharitis and periorbital dermatitis. In addition to monotherapy, 0.1% tacrolimus can be used as an adjunct alongside other medications such as topical steroid and topical cyclosporin. The medication is generally well-tolerated with minimal side effects, with the most common complaint being local stinging which dampens over time. Its reassuring safety profile in ocular application is evidenced by its minimal systemic absorption post administration.

Conclusions:

0.1% topical tacrolimus is effective and safe towards a wide spectrum of eye disease involving the anterior segment and adnexa. Not only does 0.1% topical tacrolimus spare patients from the side effects of chronic topical corticosteroid use, but it also emerges as an option for patients inadequately managed by other immunosuppressants, highlighting the growing significance of 0.1% tacrolimus in ophthalmic practice.

e-poster Abstract No.: 200222

Review of Evaluating the Efficacy of traditional clinical and Modern Color Vision Testing Devices and Treatments facilities for patients with Color Vision Deficiency.

First Author: Mingpu XU

Purpose:

Several new clinical assessment tests for color vision deficiency (CVD) have emerged in recent years. However, there is limited evidence on the effectiveness of electronic or optical color vision devices in improving color perception with current advanced technology. This study aims to compare and analyze different color vision testing devices and facilities available for patients with CVD and evaluate their efficacy in testing CVD and improving color perception.

Methods:

A systematic search of published articles related to CVD, including clinical assessment tests, modern assessment tests, and recent treatments for CVD, was conducted. The search covered the period from January 2004 to January 2024 and encompassed online databases such as PubMed, Google Scholar, and the Web of Science. The search terms used included “color vision deficiency,” “color vision deficits,” “color blindness,” “clinical tests,” “recent tests,” and “treatments.”

Results:

A total of 88 studies were selected from the initial pool of 769 papers. The most used tests were the following: Ishihara test (14.77%, n=13), some tests by VR or AR (11.36%, n=10), Farnsworth-Munsell 100 test (6.82%, n=6), some new invented digital games (3.41%, n=3). The treatments were different wearable facilities to treat CVD patients.

Conclusions:

Based on the available color vision testing options, Ishihara plates remain the primary care clinical practice for CVD assessment, and anomaloscopes is still the clinical standard for diagnosing congenital color deficiency. However, there are also emerging technologies, such as digital games on mobile devices, that could be convenient for testing young children with CVD.

e-poster Abstract No.: 200224

Public Awareness of Low Vision Rehabilitation in China

First Author: Xiaoman LI
Co-Author(s): Cong YE, Cong YE

Purpose:

To demonstrate public awareness of low vision rehabilitation (LVR) in China and identify related influencing factors.

Methods:

Cross-sectional survey using the “Survey of Public Awareness of Low Vision Rehabilitation in China” questionnaire distributed at the 2023 and 2022 Vision China Conference and an online mobile application.

Results:

1482 questionnaires (360 were from visually impaired individuals) were collected, including 952 from the public and 530 from vision professionals. The mean total scores for each accounted for 37.0% and 55.6% of the maximum scores. For the public, individuals with higher education, good visual acuity, working in the medical system, and having yearly or more frequent eye check-ups have a better awareness of LVR. For vision professionals, participants aged over 40, with better visual acuity, and knowing the low vision referral process demonstrated a better awareness of LVR. The main sources of LVR information for the public were doctors’ advice (about 29%) and news media/ online information (about 28%). For vision professionals, the main sources in the low awareness group were medical school education (30.0%), while in the higher awareness group, knowledge pathways were relatively diverse.

Conclusions:

The awareness of LVR in China is insufficient in both the public and vision professionals. Emphasizing regular eye checks, highlighting doctors’ low-vision rehabilitation consultation advice, and strengthening scientific low-vision education is essential to improve the awareness of the public. It is crucial to develop low-vision education in the medical curriculum and expand low-vision continuing education and forums to improve awareness among vision professionals.

e-poster Abstract No.: 200235

How dry eye disease influences work productivity and daily activity: preliminary result from a Hong Kong cohort

First Author: Zhichao HU

Co-Author(s): Kelvin Kam Lung CHONG, Tsz Ching LAM, Nam Sang TSUI, Precious Gennelyn Gean UNTALAN

Purpose:

Unmanaged dry eye disease (DED) negatively impacts work productivity and daily activity. This study aims to evaluate the influence of mild to moderate DED on work productivity and daily activity.

Methods:

The Work Productivity and Activity Impairment Questionnaire: General Health (WPAI: GH) was selected for measuring impairments in work and activities of subjects. The DED-related clinical parameters are investigated by ScoutPro Osmolarity System, Keratograph 5M, and slit lamp biomicroscope. Ordinal logistic regression (OLR) was applied for the analysis of the correlation of work and activities with DED-related parameters via SPSS version 29. (Clinicaltrials.gov ID: NCT06089317)

Results:

91 subjects (67 females, 73.62%) aged 53.53 ±15.09 were included. 45 (49.45%) subjects had paid jobs with working hours up to 40.57 ± 1.95 hours per week. The subjects had 0.77 ± 0.81 hours of leave due to health problems, while only 0.23 hours due to other reasons. The grading of the impact on health problems to work was 2.80 ± 2.38, then 2.67 ± 1.85 for daily activity. In the OLR, lid margin telangiectasia (p=0.012) showed negative correlation with working productivity Impairment. In another OLR, lid margin telangiectasia (p=0.011) showed a negative correlation with daily activity impairment, while meibomian gland capping (p= 0.002) showed a positive correlation.

Conclusions:

Telangiectasia and capping could be a prediction factor for work productivity and activity impairment in mild to moderate DED subjects. Further investigation with a large sample size with a whole spectrum DED cohort in a Hong Kong cohort is needed.

e-poster Abstract No.: 200242

The Lens Opacities Classification System II (LOCS II) as a safety outcome for intense pulsed light therapy on meibomian gland dysfunction

First Author: Zhichao HU

Co-Author(s): Kelvin Kam Lung CHONG, Mark Joseph LAGAO, Chi Yau MA, Tsz Chun Jason WONG

Purpose:

Clinical evidence shows intense pulsed light (IPL) therapy has beneficial effects for meibomian gland dysfunction (MGD). This study aims to investigate the safety of IPL based on standard lens opacities assessment.

Methods:

The study was based on the baseline and month-4 follow-up result after 4-session IPL in a randomized controlled trial on mild-to-moderate MGD. The Lens Opacities Classification System III (LOCS III) was applied for lens grading via slit-lamp biomicroscope. The Wilcoxon signed ranks test was selected for post and pre-treatment comparison on SPSS. (Clinicaltrials.gov ID: NCT05577910)

Results:

106 patients finished lens grading at baseline, while 81 at week-4 visit. At baseline, the grading of nuclear, cortical, and posterior were 0.53 ±0.556, 0.32 ± 0.753, and 0.02 ± 0.196, respectively. At month-4 visit, the grading of nuclear, cortical, and posterior were 0.52 ± 0.654, 0.23 ± 0.576, and 0.05± 0.269 respectively. In the Wilcoxon signed ranks test, the difference between pre- and post-results of nuclear, cortical, and posterior was not statistically significant, p= 0.841, 0.134, and 0.577, respectively.

Conclusions:

Based on the results, 4-session IPL treatment showed no adverse impact on MGD subjects on lens opacities. Long-term follow-up is needed for further study.

e-poster Abstract No.: 200247

Correlation of lid margin abnormalities with meibomian gland dysfunction severity: update of baseline characteristics of a randomized controlled trial

First Author: Zhichao HU

Co-Author(s): Kelvin Kam Lung CHONG, Anakin Chu Kwan LAI, Wai Yan LAM, Stella Weng Chi SIO

Purpose:

Meibomian gland dysfunction (MGD) encompasses abnormality quality or quantity of oil on the tear film, which is the most common risk factor for dry eye disease (DED). This study aims to analyze the correlation between MGD severity and lid margin abnormalities.

Methods:

The study was based on the baseline characteristics of a randomized controlled trial on mild-to-moderate MGD. The fluorescein-tear breakup time (FTBUT) and 8 eyelid margin abnormalities (4-point scheme) were accessed on a slit-lamp biomicroscope. The correlation between lid margin abnormalities and Ocular surface disease index (OSDI) or FTBUT was analyzed by multi-linear regression (MLR) via SPSS version 29. (Clinicaltrials.gov ID: NCT05577910)

Results:

348 (264 female, 75.86%) patients with a mean age of 54.53 ± 14.53 were analyzed. Meibomian gland capping (1.03 ± 0.81), telangiectasia (0.97 ± 0.84), and thickening (0.91 ± 0.88) were the most common abnormalities. While seborrheic lash crusting (0.08 ± 0.30) was the mildest sign. In the first MLR model, no lid margin abnormalities were significantly associated with OSDI scores. In the second MLR model, milder lid margin ticking (p=0.003), worse rounding (p =0.022), worse notching (p=0.006) and worse poliosis (p=0.020) were significantly associated with shorter FTBUT.

Conclusions:

Lid margin ticking, rounding, notching, and poliosis were associated with MGD severity in this Chinese cohort. Milder thickening as an identified risk factor was inconsistent with previous studies, so further study is needed.

Abstract No.: 200120

Poster No.: -P022 Panel No.: P022

Global, Regional, and National Trends of Glaucoma Epidemiology in 1990-2021 and the Association with Socio-economic and Healthcare Factors

First Author: Wai Chak CHOY

Co-Author(s): Guy CHEN, Ka Wai KAM, Calvin Cp PANG, Clement Cy THAM, Emily WONG, Jason C YAM*, Yuzhou ZHANG

Purpose:

Glaucoma is the leading cause of irreversible vision loss. We aim to analyse global, regional, and national trends in glaucoma disease burden and delineate socioeconomic and healthcare determinants of the current landscape.

Methods:

We extracted population level information from the Global Burden of Disease (GBD) 2021 study, covering glaucoma statistics from 1990-2021 for 204 countries. Disease burden for glaucoma was characterised by prevalence and disability adjusted life years (DALY). We further extracted prevalence rate for vision loss from the dataset. Trends were calculated with estimated annual percent changes (EAPCs), and were stratified by age group, sex, locations, and social development index (SDI). Correlation of disease burden trends with socio-economic and healthcare indicators extracted from WHO and world bank database was estimated with multivariable linear regression.

Results:

Global case count increased 1.863 folds. Western Sub-Saharan Africa (EPAC=-1.31, 95%CI=-1.74– -0.88) and South Asia (EPAC=-1.68, 95%CI=-2.11– -1.25) showed greatest reduction in prevalence and DALY rates, respectively. Western Sub-Saharan Africa (EPAC=0.70, CI=0.46-0.95, P<0.0001) showed increased moderate vision loss. All regions demonstrated reduction in prevalence rate for blindness. Most notable reduction was observed in East Asia (EPAC=-2.34, CI=-4.46--0.17, P=0.0384). On multivariable analysis, domestic government healthcare expenditure (beta=-1.86, CI=-2.36--1.35, P<0.0001) and nursing staff density (beta=-0.72, CI=-1.23--0.22, P=0.0065)were the only significant factors associated with lower vision loss rate.

Conclusions:

Persisting disparity in moderate level of vision loss was observed with association to socioeconomic and healthcare factors with impact on all dimensions of health. Global efforts on multi-level interventions would be necessary to improve glaucoma outcomes worldwide.

Abstract No.: 200214

Poster No.: -P023 Panel No.: P023

Short-term outcome of Preserflo MicroShunt in the treatment of open angle glaucoma in a Chinese population – a prospective interventional study

First Author: Anthony Chuk Him LAI

Co-Author(s): Poemen Pui Man CHAN, Yin Yung CHAN, Wai Yin Claire CHOW, Yuen Ying Yolanda KWONG, Chi Ho Thomas LAM, Clement Cy THAM, Wency TANG, Oi Man WONG

Purpose:

To evaluate the safety and efficacy of Preserflo MicroShunt in the management of open angle glaucoma in a Chinese population

Methods:

Patients of Chinese ethnicity with open angle glaucoma were recruited. The MicroShunt was implanted in an ab externo fashion as a standalone procedure or combined with phacoemulsification, augmented with adjunctive mitomycin C (0.2-0.4mg/ml).

Results:

27 eyes of 26 patients were implanted with the MicroShunt, of which 22 cases (81.5%) were done as a standalone procedure and 5 cases (18.5%) were combined with phacoemulsification. The mean pre-operative intraocular pressure was 21.56 ± 6.12 mmHg, whereas the mean number of pre-operative anti-glaucomatous medication was 3.78 ± 1.22. The intraocular pressure and the use of anti-glaucomatous medication were noted to have decreased postoperatively. There were no significant intraoperative complications noted.

Conclusions:

Preserflo MicroShunt is a safe and effective treatment of open angle glaucoma in the Chinese population.

Abstract No.: 200271

Poster No.: -P024 Panel No.: P024

Rate and determinants of compliance in primary glaucoma medication in Hong Kong

First Author: Kee Lok FONG

Co-Author(s): John BUCHAN, Kendrick SHIH

Purpose:

Patient compliance to glaucoma topical medications has been shown to be key in controlling disease progression. The objective of this study is to estimate the overall drug compliance and identify determinants of compliance in local Chinese glaucoma patients.

Methods:

This was a retrospective cross-sectional study. Sixty primary glaucoma patients from the ophthalmic clinic of Grantham Hospital completed a questionnaire on compliance with topical glaucoma medication, attitude towards glaucoma and knowledge of disease. Additionally, their medical data were retrieved from the Electronic Patient Record (EPR) system. Noncompliance was defined as reporting missing more than or equal to 10% of the prescribed topical glaucoma medication during the 2 weeks immediately prior to the consultation. Relationships between noncompliance and demographics, attitude, disease and treatment status were studied.

Results:

Compliance was calculated as 68% among 60 patients (mean age 67 year, female 40%). For education levels, patients with medium & high education were associated with lower noncompliance (OR:0.283, 95%CI: 0.083-0.96, p=0.043). Patients in the compliant group presented with a higher knowledge score out of 10 (7.00 vs 5.60, p=0.039). Furthermore, visual acuity was lower in compliant patients (0.36 vs 0.54, p=0.050). Regarding patient attitude, higher proportion of patients were concerned about medication in noncompliant group (55% vs 45%, p=0.006).

Conclusions:

The compliance of Chinese glaucoma patients in Hong Kong is comparable to other parts in the world. Education, knowledge, visual acuity and medication concerns are possible independent predictors for noncompliance.

Abstract No.: 200036

Poster No.: -P025 Panel No.: P025

Challenges in managing open angle glaucoma secondary to brachiocephalic vein occlusion: A case report

First Author: Ker Dee LIM

Co-Author(s): Logesvaran MURUGAN, Norlina RAMLI, Sujaya SINGH, Mimiwati ZAHARI

Purpose:

To discuss the challenges in surgical management of a patient with glaucoma secondary to brachiocephalic vein occlusion (BCVO).

Methods:

Case report.

Results:

A 52-year-old Chinese man with clinical diagnosis of left BCVO originating from left brachio-basilic fistula, presented with left hemifacial swelling and left eye reduced vision for 3 months. Examination revealed left hemifacial swelling, dilated superficial temporal vessels, upper limb swelling with dilated vessels on the chest wall. Best-corrected visual acuity was 6/6 in the right eye and 6/9 in the left eye. There was left upper eyelid swelling, mild chemosis with left eye intraocular pressure (IOP) of 34mmHg. Gonioscopy showed open angles with no blood in Schlemm canal. Cup disc ratio was 0.5, optic disc was pink. Despite maximum tolerated medical therapy, left IOP remained at 34mmHg. Augmented trabeculectomy reduced IOP to 8-14mmHg. Postoperatively, his vision dropped to hand movement. Fundus examination revealed optic disc swelling with hypotony maculopathy. We postulated that the lowering of IOP was unable to counteract the unopposed high venous pressure in the episcleral venous circulation, resulting in a clinical hypotony at normal IOPs. Trabeculectomy revision was done to reduce filtration and increase IOP. Post operatively, IOP maintained at 15mmHg however vision remained poor at 6/60.

Conclusions:

BCVO is a rare cause of secondary glaucoma with raised IOP from elevated episcleral venous pressure. Trabeculectomy in this case resulted in clinical hypotony despite of non hypotonous IOPs. This case highlights that we should be cautious of the unpredictable outcomes of incisional surgery in these patients.

Abstract No.: 200057

Poster No.: -P026 Panel No.: P026

Acute phacomorphic angle closure - a case series

First Author: Hong Wan Ivan LAU

Co-Author(s): Noel Ching Yan CHAN, Lok Yee Jolly TSUI, Ho Ming Bryan WONG

Purpose:

To study demographic and ocular features and identify prognostic factors in Chinese patients presenting with acute phacomorphic angle closure.

Methods:

A retrospective review of medical records was conducted for consecutive patients presenting to a tertiary ophthalmic centre between May 2023 and May 2024, with acute phacomorphic angle closure, defined as raised intraocular pressure (IOP) of >21mmHg, with symptoms of visual loss or pain, a closed anterior chamber angle and mature cataract. Demographic and ocular features of the affected and fellow eyes were examined. Factors associated with poor outcomes, defined as poor VA less than 20/200 at 3-month follow-up, or with persistent IOP elevation requiring glaucoma medications, were identified.

Results:

Eleven eyes of 11 consecutive patients were identified (mean age: 80.4 years, M:F=7:4). Median duration of symptoms prior to presentation was 3 days (range: 1-105 days). Presenting VA ranged from light perception to count finger, but only 36.4% (n=4) patients complained of blurring, as the cohort maintained a median VA of 20/30 in their better fellow eye, where 72.7% (n=8) were pseudophakic. Presenting IOP was 28-62mmHg (median: 51mmHg). All eyes received initial topical and systemic medical IOP treatment, then cataract extraction in an average of 3.6 days. VA at 3-month ranged from light perception to 20/20. Days elapsed between symptom onset and attaining IOP≤21mmHg significantly correlated with poor vision ($r=0.65$, $p=0.03$), and glaucoma medication requirement ($r=0.81$, $p<0.01$) at 3-month follow-up.

Conclusions:

Delayed presentation of phacomorphic angle closure is associated with worse visual outcomes. Promoting patient awareness and timely intervention are crucial.

Abstract No.: 200228

Poster No.: -P039 Panel No.: P039

OCT-based Analysis of Structural Damage and Prognosis of Visual Acuity in Pediatric Optic Neuritis

First Author: Chunxia PENG

Co-Author(s): Xi LIU, Wei SHI, Jun Yan ZHANG

Purpose:

This study employed OCT to quantitatively evaluate damage to the peripapillary retinal nerve fiber layer (pRNFL) and macular ganglion cells plus inner plexiform (mGCIP) in pediatric optic neuritis(PON) to assess the correlation between this damage and the final best-corrected visual acuity(BCVA).The cut-off values of pRNFL and mGCIP thicknesses predicting of final BCVA damage were obtained by ROC analysis.

Methods:

A total of 63 (106 eyes) children with PON and 58 (107 eyes) healthy controls (HCs) were included in this study. Participants underwent OCT assessments to measure pRNFL thickness and mGCIP volume.

Results:

In the PON group, 78.3% (83/106) of eyes achieved a final BCVA better than 0.8, while 4.7% (5/106) had a final BCVA worse than 0.1. The pRNFL thicknesses and mGCIP volumes in PON-affected eyes were significantly reduced compared to those of HCs. These structural changes demonstrated a strong linear correlation with the final BCVA. The cut-off values indicating optic neuritis were 89.5 μm (AUC=0.973, P=0.000) for pRNFL thickness and 1.89 mm^3 (AUC=0.982, P=0.000) for mGCIP volume. For a final BCVA of 0.5, the cut-off values were 58.5 μm (AUC=0.800, P=0.002) for pRNFL thickness and 1.37 mm^3 (AUC=0.856, P=0.000) for mGCIP volume. For a final BCVA of 0.1, the respective values were 45.5 μm (AUC=0.932, P=0.000) for pRNFL thickness and 1.16 mm^3 (AUC=0.942, P=0.001) for mGCIP volume.

Conclusions:

pRNFL and mGCIP loss are potential biomarkers for predicting the final BCVA in PON. OCT-detected damage to these structures could be highly valuable in diagnosing and prognosticating PON.

Abstract No.: 200236

Poster No.: -P040 Panel No.: P040

Clinical characteristics of optic neuritis following COVID-19 during Omicron outbreak in China

First Author: Mingming SUN

Co-Author(s): Shu Hui WEI, Quangang XU, Huanfen ZHOU

Purpose:

To investigate the clinical characteristics of optic neuritis (ON) following corona virus disease 2019 (COVID-19) and explore the possible pathophysiological mechanisms.

Methods:

This was a retrospective, observational study. All enrolled patients with ON following COVID-19 were followed for at least 6 weeks to observe their clinical characteristics and prognostic factors and to analyze the factors influencing earlier or later occurrence of ON following COVID-19.

Results:

A total of 47 eyes from 47 patients (22 males [46.8%] and 25 females [53.2%]) were enrolled in this study and divided into late-onset and early-onset groups. Compared with the late-onset group, the early-onset group had a higher dual-seronegative antibody status (21.43% vs. 63.16%, P = 0.004) and a higher CD8+/lymphocyte percentage (23.3% [20.1%, 28.3%] vs. 31.0% [29.8%, 34.2%], P = 0.008). Furthermore, Pearson's partial correlation analysis showed that dual-seronegative antibody status (adjusted r = 0.800, adjusted P = 0.001) and CD8+/lymphocyte percentage (adjusted r = 0.747, adjusted P = 0.002) were independently associated with early-onset ON following COVID-19. Further partial correlation analysis also showed that a swollen optic disc (r = -0.347, P = 0.035) was the only factor independently associated with final best-corrected visual acuity (BCVA).

Conclusions:

The earlier onset of ON following COVID-19 indicated a higher CD8+/lymphocyte percentage in the serum and a greater possibility of dual-seronegative antibody status. Whether ON following COVID-19 occurred earlier or later did not affect final BCVA, and the only factor predicting better final BCVA was a swollen optic disc.

Abstract No.: 200253

Poster No.: -P041 Panel No.: P041

Study on the Correlation between the Changes of Retinal Structure and Function and Visuospatial Impairment in Patients with Parkinson's Disease.

First Author: Jia MA

Purpose:

To evaluate the structural and functional changes of the retina in patients with Parkinson's disease (PD) by optical Coherence Tomography (OCT) and visual field tests, to investigate the correlation of its quantitative indexes with the severity of the disease, visuospatial impairment of the Parkinson's patients and their diagnostic value for PD.

Methods:

A cross-sectional study. The cognitive function of PD patients and age-matched normal controls (HC) was evaluated using MMSE and MoCA scales, the severity of PD group was evaluated using UPDRS III and H-Y grading, RNFL, GCL-IPL, MV, and MRT were obtained by OCT, and MD was obtained by visual field. The quantitative indicators and their correlation with the visual spatial impairment score and the diagnostic value of PD were analyzed and studied.

Results:

The PD group had a significantly thinner RNFL, a significantly smaller MV, a significantly thinner GCL-IPL, a significantly thinner MT, and a significantly deeper MD ($P<0.05$) than HC. The structural and functional indices of the mild group were greater than those of the moderate and severe groups ($P<0.05$). The thinning of retinal thickness and the deepening of visual field defects in PD were accompanied by an increase in UPDRS-III score, H-Y grading, and the occurrence of visual spatial disorders ($P<0.05$). GCL-IPL has the highest diagnostic value in ROC, AUC 0.944 (95% CI 0.910-0.978), the cutoff value 82.50um.

Conclusions:

The changes of retinal structure and function may be accompanied by the visuospatial impairment in PD, and the average GCL-IPL has the most diagnostic value.

Abstract No.: 200090

Poster No.: -P042 Panel No.: P042

Clinical relevance of plasma limitrin level in patients with MOG-IgG positive optic neuritis

First Author: Bo Young CHUN

Purpose:

This study evaluated the plasma concentration of limitrin and its clinical relevance in patients with myelin oligodendrocyte glycoprotein (MOG)-immunoglobulin G (IgG) positive optic neuritis.

Methods:

Peripheral blood samples were collected from 33 patients with optic neuritis and 30 healthy controls. Plasma limitrin and MOG-IgG levels were measured using enzyme-linked immunosorbent assay and a cell-based assay, respectively. The correlation between plasma limitrin levels and MOG-IgG titers in patients with optic neuritis was analyzed.

Results:

Patients with MOG-IgG–positive optic neuritis had significantly higher mean plasma limitrin levels (2.76 ng/mL) than controls (0.74 ng/mL) and patients with MOG-IgG–negative optic neuritis (1.43 ng/mL) ($p < 0.001$). Plasma limitrin and MOG-IgG levels were significantly correlated in patients with optic neuritis ($r = 0.55$, $p = 0.001$). A plasma limitrin level of 1.22 ng/mL predicted the positivity of MOG-IgG with a 100% sensitivity and 52.4% specificity. (AUC = 0.806, $p < 0.001$)

Conclusions:

Plasma limitrin levels may aid in the differentiation of MOG-IgG–positive optic neuritis from MOG-IgG–negative optic neuritis.

Abstract No.: 200154

Poster No.: -P043 Panel No.: P043

Machine learning-based relapse prediction model of neuromyelitis optica spectrum disorders: a single-centre study

First Author: Rong YAN

Co-Author(s): Jiawei WANG

Purpose:

This study used machine learning to establish a clinical prediction model for neuromyelitis optica spectrum disorders (NMOSD) relapse and evaluate its prediction ability.

Methods:

NMOSD patients from December 1, 2017 to December 1, 2019 at the department of neurology in our hospital were recruited. Clinical data from enrollment to the first relapse were collected. Clinical indicators with statistical differences between the relapse and the non-relapse group were screened as candidate's predictors. The initial cohort with completely follow-up were used as the model training set and validation set cohort. NMOSD patients between December 2, 2019 and December 25, 2020 in our department were enrolled as a test set cohort. Random survival forest was used to developed and validated the relapse prediction model.

Results:

Totally 145 patients were completely followed up, with a median follow-up time of 718 days (501.5, 991). MOG-IgG, baseline EDSS score, sensory score, ANA antibody positive, optic neuritis at enrollment, non-optic nerve-spinal type at enrollment, irregular preventive immunotherapy, and rituximab as preventive immunotherapy were found to be possible predictors. Randomly split the initial cohort 1:1 into training set and validation set. Totally 36 patients were enrolled in the test set cohort. Model results: training AUC (95%CI) was 0.880 (0.806-0.954), validation AUC (95%CI) was 0.833 (0.737-0.930), testing AUC (95%CI) was 0.706(0.525-0.887).

Conclusions:

The relapse prediction model of NMOSD based on random survival forest exhibited good discrimination and calibration ability. Baseline EDSS score, irregular preventive immunotherapy, and sensory score were the most three significant risk factors in this model.

Abstract No.: 200171

Poster No.: -P044 Panel No.: P044

Factors Associated with Diabetic Retinal Neurodegeneration: a Large Longitudinal Cohort Study

First Author: Li HUANGDONG

Co-Author(s): Wei WANG, Shaopeng YANG, Ziyu ZHU

Purpose:

To evaluate factors associated with key indicators of diabetic retinal neurodegeneration (DRN) in a large longitudinal cohort.

Methods:

The Guangzhou Diabetic Eye Study (GDES) is a prospective cohort study. Data from the right eyes of participants who completed 4-year follow-up were analyzed. The peripapillary retinal nerve fiber layer (pRNFL) thinning rate, measured using SS-OCT, was the outcome variable. Baseline parameters included demographic, laboratory, and ophthalmic data. Univariable and multivariable linear regression models were used to assess associations between candidate factors and pRNFL thinning rate.

Results:

A total of 747 type 2 diabetes mellitus (T2DM) patients were included, with a baseline mean age of 63.79 ± 7.48 years. In multivariable analysis, higher systolic blood pressure (β = -0.052, 95% CI: -0.091 to -0.013, P = 0.010), longer diabetes duration (β = -0.012, 95% CI: -0.022 to -0.002, P = 0.022), history of hypertension (β = -0.198, 95% CI: -0.336 to -0.060, P = 0.005), severe insulin-deficient diabetes (SIDD) (β = -0.588, 95% CI: -0.802 to -0.374, P < 0.001), and greater baseline pRNFL thickness (β = -0.213, 95% CI: -0.270 to -0.156, P < 0.001) were independently associated with pRNFL thinning rate (P < 0.05). Age, gender, renal function, lipid profile, and axial length were not significantly associated with pRNFL thinning rate (P > 0.05).

Conclusions:

DRN progression is influenced by pRNFL thickness, hypertension, diabetes duration, and severe insulin-deficient diabetes subtype. These factors should be considered in diabetes management.

Abstract No.: 200207

Poster No.: -P045 Panel No.: P045

Seropositive Neuromyelitis optica spectrum disorder (NMOSD)-related optic neuritis in Hong Kong: Clinical characteristics and prognostic factors for visual recovery

First Author: Clarice SU

Co-Author(s): Kar Mun Carmen CHAN, Jasmine CHUANG, Chun Wah LAM, Cheuk Ling YIM, Cherie WONGCo-Author(s): Jiawei WANG

Purpose:

In East-Asian patients, NMOSD is a more common cause of optic neuritis (ON) than multiple sclerosis. Here, we aim to review the demographics and clinical outcomes of NMOSD-ON in Asian patients.

Methods:

In this retrospective case notes review study, patients who presented to Hong Kong Eye Hospital between 2001 and 2023 with their first episode of acute ON and positive serology for NMO antibodies were identified from the hospital's electronic database. Demographic and clinical data were collected. Analyses were performed using multilevel linear regression modeling with adjustment for correlation between fellow eyes.

Results:

22 Asian patients (34 eyes) were identified. The average age of presentation was 46.9 ± 14.1 years (range 27.4 – 92.3). Twelve patients (54.6%) had bilateral involvement and 14 patients (63.6%) developed a second episode of ON, either in the same eye or the fellow eye. The ON episodes of 31/34 eyes (91.2%) were treated with intravenous methylprednisolone (IVMP), and the best-corrected visual acuity (BCVA) after three days of IVMP was significantly correlated with better BCVA on the latest follow-up ($P<0.001$). 20 patients (90.9%) were subsequently placed on second-line immunosuppressants, and a shorter time to immunosuppressant initiation was associated with better BCVA on the latest follow-up ($P<0.001$).

Conclusions:

In this case series of seropositive NMO-ON patients, earlier initiation of 2nd line immunosuppressants was associated with better final BCVA. Larger scaled/ multi-centre studies are needed to examine other factors associated with better visual prognosis in Asian/ Chinese patients.

Abstract No.: 200121

Poster No.: -P046 Panel No.: P046

Protective Effect of Oral Vitamin D3 on Retinal Ganglion Cell Density through Excitotoxic Pathway in Ethambutol Toxic Optic Neuropathy Wistar Rat Model

First Author: Riski PRIHATNINGTIAS

Co-Author(s): Suharyo HADISAPUTRO, Trilaksana NUGROHO, Dwi PUDJONARKO

Purpose:

To prove the effect of vitamin D3 in ethambutol toxic optic neuropathy (ETON) wistar rat model through its effect on the excitotoxicity pathway as an initial step in preventing toxicity in tuberculosis patients receiving ethambutol therapy.

Methods:

This was a true experimental study with post-test only randomized controlled group design. Fourteen wistar rats were divided into two groups by randomization. All wistar rats were given ethambutol 32mg/200gramBW/day for 30 days. The treatment group was given oral vitamin D3 at a dose of 72 IU/200 grams/day. Examination of N-methyl D-aspartate (NMDA) receptor expression using immunohistochemical (IHC) staining and retinal ganglion cell (RGC) density using Hematoxylin Eosin (HE) staining. Differences in NMDA receptor expression between the two groups were carried out using the Mann Whitney test, while RGC density was used using the Independent T-Test and continued with the Spearman's correlation test.

Results:

The expression of NMDA receptors in the treatment group given vitamin D3 was lower than the control (62.00 ± 16.43 and 70.00 ± 7.07, respectively) but was not statistically significant (p=0.502). Retinal ganglion cell density in the treatment group was higher and statistically significant when compared with the control group (11.36 ± 0.51 and 9.60 ± 1.14, p=0.014). The results of the Spearman's correlation test between NMDA receptor expression and RGC density were found to be p=0.380.

Conclusions:

Oral administration of vitamin D3 seems to have a protective effect on RGC in ETON wistar rat model. However, the effect of vitamin D3 on the excitotoxic pathway needs to be studied further.

Abstract No.: 200180

Poster No.: -P047 Panel No.: P047

Choroidal and anterior segment structure changes affected by hypothalamus-pituitary-growth hormone axis

First Author: Xia ZHANG

Purpose:

Objective: To evaluate choroidal and anterior segment changes in acromegaly, a disease model of excessive growth hormone (GH) and insulin-like growth factor-1 (IGF-1)
Background: Acromegaly, caused by GH-secreting pituitary adenomas, leads to systemic effects, including ocular changes. We established a treatment-naïve acromegaly cohort in 2018 to study these alterations.

Methods:

We compared choroidal thickness (ChT), luminal area (LA), stromal area (SA), total choroidal area (TCA), and anterior segment parameters in acromegaly patients and healthy controls. The impact of comorbid diabetes was also evaluated.

Results:

Acromegaly patients had significantly increased subfoveal ChT ($p < 0.001$), Haller's layer thickness ($p < 0.001$), LA ($p < 0.001$), SA ($p < 0.001$), and TCA ($p < 0.001$) compared to controls. ChT correlated with disease duration ($p = 0.01$), serum IGF-1 ($p = 0.03$), and IGF-1 burden ($p = 0.009$). Acromegaly patients with diabetes had greater ChT than those with type 2 diabetes mellitus (DM). The increases in LA, SA, and TCA were absent in acromegaly patients with diabetes, but ChT and choroidal vascular index (CVI) were unaffected by diabetic status. Elevated blood glucose reduced the correlation between GH and ChT, disappearing at levels >7.35 mM/L. IGF-1 levels were inversely related to LA, SA, and TCA. Anterior Segment Findings: Serum IGF-1 independently increased pupil diameter ($P = 0.031$), nasal ($P = 0.049$) and temporal ($P = 0.045$) iris thickness, and decreased temporal iris curvature ($P = 0.037$).

Conclusions:

Acromegaly leads to significant ocular changes, influenced by IGF-1 and glucose metabolism.

Abstract No.: 200208

Poster No.: -P048 Panel No.: P048

Increased prelaminar tissue thickness is an independent risk factor for non-arteritic ischemic optic neuropathy

First Author: Zhiqing LI

Purpose:

To identify the risk factors related to the optic disc anatomy of non-arteritic ischemic optic neuropathy (NAION) so as to find high-risk population of NAION.

Methods:

This cross-sectional study included chronic affected and unaffected eyes from NAION patients and normal eyes from age-matched individuals. Measurements of optic disc and macula from swept source optical coherence tomography angiography (SS-OCTA) were recorded. Besides conventional OCTA parameters, we manually measured circumpapillary retinal nerve fiber layer thickness (cRNFL), lamina cribrosa depth (LCD) and prelamina tissue thickness (PLTT).

Results:

This study finally included 53 NAION-fellow eyes, 26 chronic NAION eyes and 50 normal eyes. NAION-fellow eyes and NAION eyes showed significantly thicker PLTT compared to normal eyes ($p<0.001$). NAION fellow eyes showed similar peripapillary retinal nerve fiber layer thickness (pRNFL) but significantly thicker cRNFL ($p<0.001$) compared to normal eyes. And NAION eyes showed significantly thinner pRNFL ($p<0.001$) but similar cRNFL compared to normal eyes. Logistic analyses showed PLTT was an independent risk factor for NAION ($p<0.001$).

Conclusions:

Prelaminar tissue thickness is an independent risk fact of NAION. Both affected and unaffected eyes of NAION patients had more prelaminar tissue, but this tissue is not nerve fiber and it is uncertain. We speculated that it may be glial tissue or degenerated tissues of primary vitreous.

Abstract No.: 200116

Poster No.: -P049 Panel No.: P049

The anti-cytotoxic effects of synthesized aquaporin-4 (AQP4) mimotope peptides in ex vivo optic nerves

First Author: Shiqi YAO

Co-Author(s): Ellen Shaoying TAN, Xiayin YANG

Purpose:

To investigate the pathogenic mechanisms of neuromyelitis optica spectrum disorder (NMOSD)-optic neuritis (ON) and new therapeutic developments, we propose to test the effect of synthesized aquaporin-4 (AQP4) mimotope peptides in reducing AQP4-immunoglobulin G (IgG) cytotoxicity to ex vivo optic nerves.

Methods:

We have successfully synthesized AQP4 mimotope peptides for the three extracellular loops: mLoops A, mLoops C and mLoops E. Separate experiments will be conducted on the optic nerve tissue of Sprague-Dawley rats and C57BL/6J mice. The optic nerve sections with a thickness of 10 μm were immunostained with AQP4-IgG, total IgG, and AQP4-IgG with different synthesized AQP4 mimotope peptides (mLoops A, C, E, A+C, A+E, C+E and A+C+E), followed by the appropriate fluorescent antibody. Tissue sections were examined with a Zeiss upright confocal microscope.

Results:

The co-localization of GFAP and IgG demonstrated that AQP4-IgG bound specifically to astrocytes. When the epitope peptides were added to IgG, the Loop A, C and E epitope peptide significantly reduced the human IgG-labeled area at the optic nerve ($p<0.001$). The Loop A+C epitope peptide also eliminated the human IgG-labeled area significantly ($p<0.01$). The Loop A+E, C+E and A+C+E peptide only reduced the human IgG-labeled area slightly.

Conclusions:

Our results demonstrated that AQP4 extracellular mimotope peptides could reduce the cytotoxin by inhibit the binding of AQP4-IgG to astrocytes in ex vivo optic nerves.

Abstract No.: 200149

Poster No.: -P050 Panel No.: P050

Evaluation of visual morphology and functional indicators in patients with acute non-arteritis anterior ischemic optic neuropathy

First Author: Hai-yan WANG

Purpose:

To analyze the changes of morphology and function of macula and optic nerve in the eyes of acute NAION, and to explore the correlation between morphological and functional indicators, visual acuity changes and morphological function changes.

Methods:

A retrospective analysis was performed for 28 patients with unilateral NAION in our clinic. The disease time from onset is 3~30 days (average 15.11±7.73 days). All patients underwent exams of OCTA, P-VEP, and multifocal electroretinography (mfERG). And all patients were given classical treatment with follow-up for more than 3 months.

Results:

The retinal nerve fibre layer (RNFL) layer in the NAION group was thickened , thinning of ganglion cell complex (GCC) in the macular region (75.08± 15.93 μm vs 85.4 ±9.44 μm), superficial capillary density (VD) in the center of the optic disc increased, P100 peak value of PVEP extended , P100 amplitude decrease and mfERG center reaction density decreased (46.41±23.10 nv/degree^2 vs 67.48±22.30 nv/degree^2). In addition, GCC thickness was positively correlated with P100 amplitude and mfERG center reaction density. RNFL thickness negatively correlated with the duration of disease, and positively correlated with the peak value of VEP P100($P<0.05$). The change in visual acuity negatively correlated with the magnitude of P100.

Conclusions:

Patients with NAION have visual morphological impairment in the acute stage, and the change of GCC thickness related to the impaired macular and optic conduction function. As the course of the disease decreases, the thickness of the RNFL decreases, and the improvement of visual acuity is related to the degree of initial visual impairment.

Abstract No.: 200152

Poster No.: -P051 Panel No.: P051

Exploring the characteristics of retro-grade trans-synapse degeneration from RGCs loss in acquired brain injuries patients with homonomous hemianopia

First Author: Chunxia PENG

Co-Author(s): Fei WANG, Shu Hui WEI, Hongtao ZHANG

Purpose:

Purpose: To detect the retinal structural changes in homonymous hemianopia (HH) patients due to acquired cerebral lesions using optical coherence tomography (OCT) and evaluated their relationship to visual field (VF) loss and their occurrence time after cerebral lesions onset.

Methods:

40 HH patients (80 eyes) and 45 age-gender matched healthy controls (HCs) (45 eyes) were enrolled this study. All the patients underwent OCT examination to evaluate the peripapillary retinal nerve fiber layer (pRFNL) and macular retinal ganglion cells layer (mRGCL) injuries. VF examinations were also done for all patients.

Results:

pRNFL thicknesses and mRGCL thicknesses in HH patients reduced markedly compared to that in HC. Temporal mRGCL thicknesses in ipsilateral eyes reduced 4.77±7.98μm (p=0.002) in contrast to that of contralateral eyes. Nasal mRGCL thickness in contralateral eyes reduced 5.75±10.44μm (p=0.004), compared to that of the ipsilateral eyes. The VFs had good linear correlations to mRGCL thicknesses in temporal hemisphere of ipsilateral eye and nasal hemisphere in contralateral eye. The mRGCL and pRNFL loss occurred as early as 2 -3 months after cerebral lesions onset and progressed over time.

Conclusions:

mRGCL injuries due to acquired cerebral lesions by retrograde trans synaptic degeneration (RTD) was objectively detected by OCT and its characteristics were consistent to anatomic features of visual pathway. The mRGCL loss correlated to VFs loss and became more serious with time. These results confirmed the transneuronal injury existing in structural level again and OCT could be potential technique to study RTD.

Abstract No.: 200193

Poster No.: -P052 Panel No.: P052

The Differences in Visual Function, Retinal Vascular Network, and Thickness in Patients with AQP4-ON and MOG-ON

First Author: Min WANG

Co-Author(s): Jian YU

Purpose:

To investigate the differences in visual function, retinal vascular network, and retinal thickness among patients diagnosed with AQP4-ON and MOG-ON.

Methods:

Patients with confirmed AQP4-ON, MOG-ON, and healthy volunteers were enrolled. All optic neuritis (ON) cases were stable for six months. Patients were divided into subgroups based on ON episodes (0, 1, 2, or 3+). Assessments included best-corrected visual acuity (BCVA), visual field testing, and optical coherence tomography angiography (OCTA).

Results:

In the AQP4-ON group without prior ON episodes, a notable reduction in vessel densities within peripapillary and parafoveal regions was observed ($p < 0.05$). Conversely, MOG-ON patients without ON episodes exhibited no significant changes in BCVA, visual field, retinal thickness, and vessel densities ($p > 0.05$). After the first AQP4-ON episode, there was a significant decrease in BCVA, visual field, retinal thickness, and vessel densities, whereas MOG-ON patients experienced significant reductions in retinal thickness and vessel densities post-first episode ($p < 0.05$), with BCVA and visual field remaining unchanged ($p > 0.05$). The BCVA and visual field of MOG-ON deteriorated markedly only after three or more episodes of ON. After adjusting for age and episode frequency, there were no significant differences in the MD, retinal thickness, or vessel densities between the AQP4-ON and MOG-ON eyes (all $p > 0.05$). However, the BCVA was significantly worse in AQP4-ON eyes than in MOG-ON eyes ($p < 0.05$).

Conclusions:

Despite comparable retinal structural and vascular density changes, visual function impairment is more pronounced in AQP4-ON patients.

Abstract No.: 200277

Poster No.: -P053 Panel No.: P053

MOG antibody prevalence in adult optic neuritis and clinical predictive factors for diagnosis: A Chinese cohort study

First Author: Honglu SONG

Co-Author(s): Shu Hui WEI

Purpose:

To use clinical factors to predict the subtypes of adult optic neuritis.

Methods:

This was a single-center retrospective cohort study.

Results:

The final analysis included 249 adult patients presenting with the first ON attack. These included 109 AQP4-ON cases, 49 MOG-ON cases, and 91 Seronegative-ON cases. The proportion of ODS and bilateral involvement in MOG-ON group was significantly higher than in the other two subgroups (P=0.029, 0.001). The MOG-ON group had the best follow-up BCVA (P=0.003). To predict adult AQP4-ON, unilateral involvement (sensitivity 0.88,) was the most sensitivity predictors, while neurological history (specificity 0.96) and concomitant other autoimmune antibodies (specificity 0.76) were the most specific predictors. Using the parallel test 'unilateral or other autoimmune antibodies' increased sensitivity to 0.95, with an optimal NPV of 0.88. To predict adult MOG-ON, the most sensitive clinical characteristics were ODS (sensitivity 0.79), and follow-up VA ≤0.1logMAR (sensitivity 0.78), whereas the most specific values were prior neurological history or bilateral involvement, with specificities of 0.92 and 0.82, respectively. The sensitivity increased to 0.94, 0.97, and 0.97 when using the parallel clinical factors of 'bilateral or ODS or relapse', 'bilateral or ODS or follow-up VA ≤0.1logMAR', and 'ODS or follow-up VA ≤0.1logMAR', and the corresponding NPV (0.94, 0.97 vs 0.98).

Conclusions:

The proportion of MOG-ON (19.7%) was less than that of AQP4-ON and Seronegative-ON. Moreover, MOG-ON had a better prognosis and was more likely to be associated with ODS or bilateral involvement. The use of parallel clinical parameters improved the sensitivity for the diagnosis of adult MOG-ON and AQP4-ON.

Abstract No.: 200111

Poster No.: -P054 Panel No.: P054

Quantitative Analysis of Retrograde Trans-synaptic Retinal Degeneration: Longitudinal Cohort Study

First Author: Yeji MOON

Co-Author(s): Byung Joo LEE, Eun-jae LEE

Purpose:

To quantitatively assess the progression of retrograde trans-synaptic retinal degeneration (RTSD) and identify factors influencing its course.

Methods:

This retrospective longitudinal cohort study included patients with RTSD due to stroke or surgically resected tumors: 12 with intracranial hemorrhage, 18 with infarction, and 23 with tumors. Optical coherence tomography was used to measure peripapillary retinal nerve fiber layer (pRNFL) and macular ganglion cell-inner plexiform layer (mGCIPL) thickness. Longitudinal changes were analyzed using a mixed-effects model.

Results:

The estimated rate of pRNFL thinning was 7.95 μm/log year, with higher rates in eyes ipsilateral to CNS lesions (11.50 μm/log year) compared to contralateral eyes (4.70 μm/log year). The mGCIPL thinning rate was 5.27 μm/log year, with 4.41 μm/log year in ipsilesional eyes and 6.11 μm/log year in contralesional eyes. RTSD progression was most pronounced in the first 4 years, slowing to 0.30 μm/year for pRNFL and 0.29 μm/year for mGCIPL thereafter. The hemorrhage group showed more rapid pRNFL thinning. Age and VF defect severity were also correlated with RTSD progression.

Conclusions:

RTSD progression is most rapid during the first few years post-CNS injury, stabilizing to levels consistent with normal aging after 4 years. Intracranial hemorrhage, older age, and greater VF defect severity are associated with faster RTSD progression. These findings are crucial for patient monitoring and understanding RTSD mechanisms.

Abstract No.: 200267

Poster No.: -P055 Panel No.: P055

Efficacy of low-dose rituximab versus immunosuppressants in refractory orbital inflammatory pseudotumor with extension to intracranial

First Author: Yuhang WANG

Co-Author(s): Yuyu LI, Shu Hui WEI, Huanfen ZHOU

Purpose:

The aim of this study was to compare the efficacy of low-dose rituximab (RTX) and immunosuppressants in treating orbital inflammatory pseudotumor (OIP) with intracranial extension, a refractory and high relapse disease.

Methods:

Patients who had been diagnosed with refractory OIP with intracranial extension and who were refractory to systemic corticosteroids were recruited at the Neuro-Ophthalmology Department at the Chinese People's Liberation Army between December 2018 and January 2023. After methylprednisolone pulse therapy, we added 2 mg tacrolimus per day, 1500 mg mycophenolate mofetil per day, or 200 mg rituximab at days 1 and 15, then monitoring CD19+ B cells of under 1% as adjuvant therapy.

Results:

Twelve patients (seven males and five females) were included, with a mean age of 46.42±12.29 years (age range: 21–64 years). Eight patients (66.7%) had different levels of decreased vision at onset and four patients (33.3%) had severely impaired vision (three with no light perception, one with some light perception). Five patients (41.7%) showed clinical course worsening or lack of remittance when treated with corticosteroids. Seven patients (58.3%) had a typical relapsing course, and the annual recurrence rate was higher than 7.36±3.73 times. Of these seven, four (57.1%, 4/7) could undergo successful management with immunosuppressants. Three (42.9%, 3/7) failed with immunosuppressants but succeeded in controlling relapse with RTX.

Conclusions:

For patients with OIP with intracranial extension who still experience recurrence or slow reduction of lesions after applying corticosteroids combined with immunosuppressants therapy, low-dose RTX may be a better choice.

Abstract No.: 200033

Poster No.: -P056 Panel No.: P056

Recurrence-independent Progressive Inner Retinal Thinning after Acute Optic Neuritis: A Longitudinal Study

First Author: Jae Ho JUNG

Purpose:

To investigate the longitudinal changes of the inner retina after the acute demyelinating optic neuritis (ON).

Methods:

Retrospective observational study, 77 patients with ON, including 23 patients with neuromyelitis optica spectrum disorder with AQP4-IgG (NMOSD), 23 with MOG-antibody associated disease (MOGAD), 18 with multiple sclerosis (MS), and 13 with idiopathic optic neuritis (iON). The thickness of the peripapillary retinal nerve fiber layer (pRNFL) and the macular ganglion cell layer-inner plexiform layer (mGCIPL) using optical coherence tomography were evaluated at baseline ON attack and follow-up in the absence of ON recurrence.

Results:

There was no significant decrease of pRNFL thickness in the iON group in contrast to the other groups. Among the AQP4, MOG and MS groups, there was no significant difference in the rate of pRNFL thinning. The rate of mGCIPL thinning in the AQP4 and MOG groups was similar. Meanwhile, the rate of mGCIPL change in MS and iON groups was lower than AQP4 and MOG groups, and there was no significant difference between MS and iON. Age older than 40 years was associated with the significant progression of mGCIPL thinning.

Conclusions:

Progressive inner retinal thinning in attack-free period in AQP4-ON, MOG-ON, and MS-ON. Since subclinical neuroaxonal damages continue after the acute attack of ON subsides despite the suppression of new attacks of ON.

Abstract No.: 200104

Poster No.: -P057 Panel No.: P057

Methanol-Induced Optic Neuropathy: Treatment and Outcomes Of Case Series From The Singapore National Eye Centre

First Author: Reuben FOO

Co-Author(s): Eric JIN, Jing Liang LOO, Shweta SINGHAL, Umapathi N. THIRUGNANAM, Sharon TOW, Christine YAU

Purpose:

To evaluate the presentation and treatment outcomes of patients diagnosed with methanol-induced optic neuropathy (Me-ION) at a tertiary ophthalmic centre.

Methods:

We performed a retrospective, cross-sectional review of 6 patients diagnosed with bilateral Me-ION at the Singapore National Eye Centre from 2006 to 2024. Parameters analyzed included baseline demographics, clinical presentation, visual function, ophthalmologic investigation results, treatment regimes, and final visual outcomes.

Results:

6 male patients with a mean (SD) age of 38.0(17.6) years were reviewed. 2/6 patients had visual acuity (VA) of counting fingers (CF) or worse in the better eye, with a mean (SD) vision of 1.49(0.75) logMAR units (range:6/9 to hand motion(HM)). The mean(SD) symptom-to-treatment duration was 8.0(9.0) days. All patients received high-dose intravenous methylprednisolone for a mean (SD) of 4.2(1.0) days, followed by tapering doses of oral prednisolone for a mean (SD) of 31.0(30.9) days. After treatment, 4/6 patients experienced vision improvement, while 2 deteriorated (Case 2: 6/21 to HM; Case 6:HM to PL). Mean (SD) improvement in vision was 0.16(1.06) logMAR units - ranging from most improved (case 4: CF to 6/7.5) to least improved (case 5: 6/9 to 6/7.5). The average(SD) optical coherence tomography (OCT) retinal nerve fiber layer (RNFL) thickness decreased from 106.8(29.7) μm at onset to 71.4(19.2) μm after treatment. The average(SD) macular ganglion cell layer-inner plexiform layer(mGCL-IPL) thickness decreased from 69.8 μm(10.2 μm) at onset to 56.3 μm(8.0μm) after treatment.

Conclusions:

Clinicians should maintain a high index of suspicion for Me-ION, even in developed countries. Early treatment with high-dose corticosteroids appears to aid in visual recovery, though further studies are needed to confirm efficacy.

Abstract No.: 200215

Poster No.: -P058 Panel No.: P058

Characterization of Retinal Structure in Neuronal Intranuclear Inclusion Disease

First Author: Xiaofang LIANG

Co-Author(s): Panpan YUAN

Purpose:

To study the clinical features and variations of retinal structure in Chinese patients with Neuronal Intranuclear Inclusion Disease (NIID).

Methods:

Fourteen NIID patients were included in this study. Detailed ocular examinations were performed, including best corrected visual acuity (BCVA), slit lamp, fundus, perimetry, optical coherent topography (OCT), skin biopsy and genetic testing. Peripapillary retinal nerve fiber layer (pRNFL) and macular ganglion cell complex (mGCC) thickness were measured.

Results:

Varying degrees of vision loss were observed in most patients. The BCVA of the affected subjects ranged from 0.3–1.0. Noticeable structural changes including disruption or loss of the macular ellipsoid zone of the photoreceptors were observed with OCT. Hyperreffective dots were also present between the retinal ganglion cell layer and outer nuclear layer. NIID patients exhibited significant reductions in pRNFL and mGCC thickness across all quadrants. All subjects were detected expansion of the CGG repeats (length approximately from 33–375 bp) in the NOTCH2NLC gene.

Conclusions:

Retinal ganglion cells, along with their axons and dendrites, photoreceptors are extensively affected in NIID, suggesting it may serve as a reliable biomarker for assessing disease severity in NIID.

Abstract No.: 200109

Poster No.: -P059 Panel No.: P059

Clinical Characteristics of Idiopathic Intracranial Hypertension (IIH) in Chinese Patients

First Author: Christopher Ming Kei PANG

Co-Author(s): Carmen CHAN, Noel CHAN, Charlene Yc CHAU, Chun Wah LAM, Sophia LI, Chun Yue Andrew MAK, Cherie WONG, Charlene YIM

Purpose:

Idiopathic intracranial hypertension (IIH) is a relatively common neuro-ophthalmic disease in Caucasians, with a potential to cause severe visual loss. However it is less common in East Asians and there is limited published data of IIH in Chinese. This retrospective review aims to evaluate the clinical characteristics of Chinese patients with IIH.

Methods:

Chinese patients with IIH who attended two tertiary referral ophthalmic centers in Hong Kong (which covered a population of ~ 2 million) between January 2003 and December 2022 were identified from clinic databases. Demographic data and clinical features were analyzed.

Results:

Twenty patients were identified (70% female). The mean follow-up duration was 9.0±7.4 years. At presentation, the mean age was 34.6±9.9 years. 80% of the eyes had normal/near normal visual acuity [VA] (Snellen VA ≥ 6/9), with a mean Snellen VA of 0.86. 10% were asymptomatic. The mean body mass index was 27.7±4.3 kg/m2. 65% were managed with oral acetazolamide and weight reduction alone. 35% required one or more additional treatment (15%: cerebrospinal fluid shunting; 10%: repeated lumbar puncture; 15%: additional medical treatment). At final follow-up, 81.3% had retained normal/near normal VA with a mean Snellen VA of 0.85. Only one eye developed optic atrophy with average peripapillary retinal nerve fiber layer thickness <80 μm. 24.2% had visual field loss, with average mean deviation of -1.3±0.9 dB.

Conclusions:

IIH is uncommon in Chinese, with mild visual loss at presentation and generally favourable visual outcome. Most patients can be managed successfully with weight reduction or medical treatment alone.

Abstract No.: 200151

Poster No.: -P060 Panel No.: P060

Clinical Characteristics and Treatment Outcomes in a Series of Five Patients with SSBP1-Related Optic Neuropathy

First Author: Xiaofang LIANG

Co-Author(s): Panpan YUAN

Purpose:

To elucidate the clinical features, diagnostic challenges, and treatment outcomes in patients with SSBP1-related optic neuropathy, a rare genetic condition affecting the optic nerve.

Methods:

A retrospective case series was conducted involving five patients diagnosed with SSBP1-related optic neuropathy. Clinical data, including visual acuity, fundus examination, and imaging findings, were analyzed. Genetic testing and response to various therapeutic interventions were also assessed.

Results:

The cohort comprised five patients with a median age of 28 years (range: 20-35). All patients presented with visual disturbances and characteristic optic nerve abnormalities on imaging. Genetic analysis confirmed SSBP1 mutations in all cases. Treatment approaches varied, including corticosteroids, immunosuppressants, and novel targeted therapies. Visual improvement was observed in three patients, while two exhibited stable but unchanged visual acuity.

Conclusions:

SSBP1-related optic neuropathy presents with distinct clinical features and challenges in management. Early genetic diagnosis and tailored treatment strategies are crucial for optimizing patient outcomes. Further studies are needed to refine treatment protocols and understand long-term prognosis.

Abstract No.: 200216

Poster No.: -P061 Panel No.: P061

Infiltrative optic neuropathy mimicking demyelinating optic neuritis

First Author: Chuan-bin SUN

Purpose:

To evaluate the clinical and MRI characteristics of Infiltrative optic neuropathy (ION) caused by systemic malignancy, which contribute its differential diagnosis from demyelinating optic neuritis (DON).

Methods:

In this retrospective case-series study, 10 ION cases caused by diffuse large B cell lymphoma (4 cases), Leukemia (2 cases), T cell lymphoma (1 case), lung cancer (1 case), breast cancer (1 case), and gastric cancer (1 case) were included. All their clinical and MRI data were collected and analyzed.

Results:

At presentation, all 10 ION cases manifested as arcuate or circular scotoma which progressively proceeded to central visual loss, and swollen optic disc under ophthalmoscopy, as well as enlargement and contrast-enhancement of optic nerve sheath in MRI. Central or branch retinal artery occlusion was found in 6 ION cases presenting as sudden visual loss. All 10 ION cases showed transient or no response to steroid therapy, and manifested as progressive deterioration of visual loss, swelling of optic disc, and optic nerve enlargement in MRI, if they were not treated properly.

Conclusions:

ION showed similar clinical and MRI characteristics to DON, but lack of or no response to steroid therapy. Progressive deterioration of visual loss, swelling of optic disc, and optic nerve enlargement in MRI, even though steroid therapy was still ongoing, contribute to differ ION from DON.

Abstract No.: 200053

Poster No.: -P062 Panel No.: P062

Clinical Features and Treatment Outcome of Biopsy-Proven Giant Cell Arteritis in Chinese Patients

First Author: Stella Weng Chi SIO

Co-Author(s): Carmen CHAN, Noel Ching-yan CHAN, Sophia LI, Chun-yue andrew MAK, Cheuk Ling YIM, Matthew LAM, Cherie WONG

Purpose:

To report the clinical features and outcomes in giant cell arteritis(GCA) with ophthalmic involvement in Hong Kong(HK) Chinese patients

Methods:

A retrospective case review study on Chinese patients with biopsy-proven GCA managed at 2 tertiary ophthalmology centres in HK over a 20-year period(2005-2024).

Results:

Fourteen patients (20 eyes) were identified with mean age at presentation of 80±8 years. Twelve patients were diagnosed with arteritic anterior ischemic optic neuropathy (AAION), 1 with bilateral anterior uveitis (AU), 1 with unilateral impending central retinal artery occlusion. 43% (6/14) of patients had bilateral involvement and 45% (9/20) of the affected eyes had presenting visual acuity (VA) of finger counting or worse. Two AAION patients presented with visual field defects alone, with relative preservation of central VA. All patients received high dose corticosteroid as initial treatment and 86% required subsequent steroid-sparing agent. After steroid treatment, all patients presenting with visual decline had persistent visual loss of which 1 experienced further visual deterioration while those without visual decline at presentation did not suffer any visual drop. For patients with unilateral presentation, none had fellow eye involvement. Upon follow up, 1 patient had systemic involvement of GCA (Acute coronary syndrome) and 2 patients died 2 months after diagnosis of GCA.

Conclusions:

GCA is an uncommon disease in Chinese and our study highlights the heterogenous features in its ophthalmic manifestations. A high index of clinical suspicion is required to make timely diagnosis and to ensure early treatment initiation. Multidisciplinary management is crucial given its potential systemic involvement and treatment side effects.

Abstract No.: 200153

Poster No.: -P063 Panel No.: P063

Methylprednisolone pulse treatment response in pediatric optic neuritis patients with hereditary outer-layer retinopathy

First Author: Chunxia PENG

Co-Author(s): Wei SHI, Hongtao ZHANG, Liping ZHANG, Panpan ZHENG

Purpose:

Pediatric optic neuritis (PON) children with hereditary outer-layer retinopathy (HOLR) were rare. This study aimed to longitudinal observe their methylprednisolone treatment response, clinical presentations, vision recovery with and hope to provide some potential cues to their diagnosis and treatment.

Methods:

Five cases were diagnosed as PON with HOLR were included study. Their acute clinical manifestation, and visual function-structural longitudinal changes with time after methyl-prednisolone pulse treatment. The follow-up term ranged from 3 to 12 months.

Results:

The PON onset-age of five cases ranged from 3 to 7 year-old. All the cases suffered acute visual loss to NLP to FC/BE with night blindness, eye movement pain in 1 case. Ellipsoid band blurred and atrophy detected by OCT in all cases. ERG examinations showed the a and b waves extinguished and genetic assays discovered HOLR associated gene in all cases. Serum AQP4 antibody was positive in one case. Visual acuity began to recover slightly until 1 month after methylprednisolone treatment in 2 cases and remained nadir visual acuity in 2 cases. After 2 months, average visual acuity was 0.3 with 0.4 after 3 months, and the optimal visual acuity were 0.6. With visual acuity recovery, the night blindness still existed and outer layer of retina atrophy worsened with time.

Conclusions:

The methylprednisolone pulse treatment was effective but with poor response and final visual acuity. These clinical features could be potential cues to diagnose of PON for HOLR children and two diseases could worsen each other by interacting.

Abstract No.: 200156

Poster No.: -P064 Panel No.: P064

Venous sinus stenting for treatment of refractory pseudotumor cerebri syndrome: a retrospective study in Chinese

First Author: Chaoyi FENG

Co-Author(s): Qian CHEN, Weimin CHEN, Ping SUN, Xinghuai SUN, Jianjun TANG, Guohong TIAN*

Purpose:

Venous sinus stenting (VSS), as well as optic nerve sheath fenestration and cerebrospinal fluid diversion, is one of three main surgical treatments for medical refractory pseudotumor cerebri syndrome (PTCS). Comprehensive multimodal examinations were used to evaluate outcomes of VSS in Chinese patients with PTCS.

Methods:

We conducted a retrospective cohort study of patients with medically refractory PTCS who underwent VSS from March 2019 to June 2022 at our neuro-ophthalmology division. Demographic and clinical characteristics, visual outcomes, scale of papilledema, and optical coherence tomography (OCT) outcomes were evaluated.

Results:

Twelve patients (24 eyes) were assessed (4 men, 8 women, mean age: 48.08±13.13 [range: 27–73] years, mean body mass index: 24.41±2.43 [range: 21.5–29.4] kg/m2). Eleven patients presented with transient visual obscuration and tinnitus, whereas three experienced headaches. After surgery, papilledema and visual functions improved dramatically in eight patients and stabilized in three patients with advanced optic atrophy before surgery. The peripapillary retinal nerve fiber layer decreased after surgery, whereas the macular ganglion cell inner plexiform layer (GCIPL) stabilized. There were no severe complications after VSS.

Conclusions:

PTCS with atypical features and venous sinus stenosis were common in Asian patients. VSS was effective and safe for medically refractory patients, especially during early stages of the disease. OCT measurement of the GCIPL was useful for predicting the prognosis after surgery.

Abstract No.: 200225

Poster No.: -P065 Panel No.: P065

Endovascular treatment for cavernous sinus dural arteriovenous fistulas

First Author: Wang WEI

Purpose:

To explore the safety and effectiveness of interventional embolism of cavernous sinus dural arteriovenous fistulas

Methods:

A retrospective study of patients with cavernous sinus dural arteriovenous fistula from March 2021 to March 2024 was recorded for clinical symptoms, including proptosis, conjunctival congestion and edema, eye movements .After embolization treatment, the patient had no cerebrovascular related complications, improvement of conjunctiva congestion, aggravation of cranial nerve palsy . Follow-up for 3 months, primary follow-up of patient recovery of cranial nerve palsy.

Results:

A total of 65 patients with dural arteriovenous fistula in the cavernous sinus area were enrolled, including 10 males and 55 females. Complete embolization was achieved in all patients, with 59 patients reaching the fistula via transvenous approach and 6 by transarterial route. Postoperative patients with conjunctival congestion symptoms disappeared after 3 days, including 16 cases of postoperative abducens nerve paralysis aggravation, after a month of hyperbaric oxygen and eye exercise treatment symptoms completely recovered.1 case of patients with arterial embolism Onyx glue by dangerous anastomosis into the middle cerebral artery, need secondary interventional surgery to remove Onyx glue, the rest of the patients have no cerebrovascular complications.

Conclusions:

Endovascular treatment for cavernous sinus dural arteriovenous fistulas has good treatment effect. Transvenous embolization is safe, and arterial embolism should pay attention to the existence of dangerous anastomosis

Abstract No.: 200279

Poster No.: -P066 Panel No.: P066

Clinical characteristics of children with myelin oligodendrocyte glycoprotein antibody positive optic neuritis under 16 years old

First Author: Honglu SONG

Co-Author(s): Shu Hui WEI

Purpose:

To study the clinical characteristics and prognosis of MOG-ON in children under 16 years old.

Methods:

Clinical data about 33 children (57 eyes) with MOG-ON. The age of onset was 3~15 years old, and 16 cases were male. The clinical characteristics of the children and the recovery of visual acuity after treatment were collected.

Results:

14 children (42.4%) had binocular optic neuritis as the first manifestation, 18 children (54.5%) had recurrence, and 24 children (72.7%) had bilateral onset at the last follow-up. At the first onset, 24 children (72.7%) had eye pain, and 23 eyes (48.9%) had optic disc edema. After 3 months of follow-up, OCT showed that the average thickness of pRNFL was (70.66±11.11) μ m, and the average thickness of mGCIPL in macular region was (60.71±7.14) μ m, showing varying degrees of atrophic thinning. Orbital MRI showed the long T2 signal of the optic nerve was changed in 32 cases (97.0%), some of which were accompanied by optic nerve enhancement or perioptic nerve enhancement, and the optic chiasm was involved in 4 cases (12.1%). Within two weeks of the first onset, 37 eyes (78.7%) had BCVA ≤ 0.1. After intravenous methylprednisolone treatment, visual function improved to varying degrees, and 46 eyes (97.9%) had BCVA ≥ 0.5. The mean follow-up time was (34.06±17.60) months. At last follow-up, 54 eyes (94.7%) had BCVA≥0.5.

Conclusions:

The clinical manifestations of MOG-ON in children under 16 years old are diverse. They are sensitive to corticosteroids pulse therapy, and most of them have a good prognosis.

Abstract No.: 200183

Poster No.: -P067 Panel No.: P067

Predictive Factors for Visual Prognosis in Neurosyphilis Presenting with Optic Atrophy: A Chinese Case Series Study

First Author: Yan YAN

Purpose:

We aimed to explore the clinical features and predictive factors for visual prognosis of neurosyphilis-associated optic atrophy (NSAOA).

Methods:

This retrospective observational study included 17 patients (33 eyes) with NSAOA who received standard anti-ocular syphilis treatment. LogMAR (logarithm of the minimum angle of resolution) best-corrected visual acuity (BCVA), visual field, and optical coherence tomography, were recorded at baseline, short-term (within one month after treatment), and long-term (> 6 months) follow-up. Patients with at least one eye with LogMAR BCVA of ≥1.3 at the last follow-up visit were categorized as the blind group. A change ≥ 0.2 on the LogMAR BCVA indicated improvement or deterioration.

Results:

The mean age was 58.5 years, and 15 patients were males. The mean time between the onset and treatment was 10.1 months. Thirteen patients had Argyll-Robertson pupils. The unblinded group had younger age, better baseline visual acuity, higher baseline cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL) titer and CSF total protein (TP) counts than the blind group. BCVA of most eyes improved after treatment but experienced deterioration during the follow-up. The deteriorated group of eyes had lower baseline visual field parameters, thinner inferior peripapillary retinal nerve fiber layer (RNFL) thickness. The long-term LogMAR BCVA moderately negatively correlated with CSF VDRL titers before and after treatment.

Conclusions:

The diagnosis is often delayed in NSAOA, and the overall visual prognosis is poor. Older age, longer symptom duration, worse baseline vision, thinner inferior RNFL thickness, and lower CSF VDRL titer and TP counts are associated with worse long-term visual prognosis.

Abstract No.: 200223

Poster No.: -P068 Panel No.: P068

The pathogenesis of Th17/Treg cell imbalance in inflammatory demyelinating optic neuritis

First Author: Hao KANG

Co-Author(s): Yong TAO, Shu Hui WEI

Purpose:

Previous studies have confirmed that antigen-specific T cells contribute to the production of NMO-igg in peripheral immune responses and the development of NMO lesions in the CNS. However, the role of the crucial immunomodulators Th17/Treg has not been investigated in NMOSD.

Methods:

Frequencies of T cell subsets in the peripheral blood of anti-AQP4 Abpostive NMOSD patients and healthy controls (HCs) were assessed by flow cytometry. A murine model of NMOSD was established by intrathecal injection of purified immunoglobulin G from anti-AQP4 Ab positive patients with NMOSD and human complement. Astrocyte injury, demyelinating lesion, and inflammatory response were used to evaluate the injury of NMOSD animal models. Th17 and Tregs in NMOSD mouse lesions were analyzed by flow cytometry, histological sections, and real-time quantitative Polymerase Chain Reaction. We examined the effects of both depletion and adoptive transfer of Th17 and Treg cells.

Results:

Compared with HC, the percentage of Tregs in peripheral blood T cells in patients with acute NMOSD was significantly reduced, while the percentage of Th17 was significantly increased. In animal models, depletion of Tregs greatly enhanced astrocyte loss and demyelination in NMOSD mice, while adoptive transfer of Tregs mitigated spinal damage. The depletion of Th17 cells can alleviate demyelinating lesions, while the adoptive transfer of Th17 cells can aggravate astrocyte loss.

Conclusions:

The current study provides evidence that Th17/Treg balance is involved in the formation of NMOSD demyelinating damage. Therefore, we believe that the NMOSD treatment strategy targeting Th17 and Tregs is promising and deserves further investigation.

Abstract No.: 200037

Poster No.: -P069 Panel No.: P069

Silicone oil migration to central nervous system: risk factor analysis of visual pathway migration versus cerebral ventricular migration

First Author: Wing WONG

Co-Author(s): Chi Lik AU

Purpose:

Silicone oil (SiO) migration to the central nervous system (CNS) is a rare complication of SiO tamponade after vitreo-retinal surgeries. Limited cases were reported, our study aims to analyse the risk factors for cerebral ventricular migration (CVM) on top of visual pathway migration (VPM).

Methods:

Literature searches on PubMed, MEDLINE, EMBASE were performed on June 1, 2024. Non-English articles, and studies without neuro-imaging of the CNS were excluded. Patient demographics, SiO filled eyes' ocular characteristics and vitrectomy surgical details were extracted. VPM and CVM were assigned as Group 1 and 2 respectively. Visual acuities (VA) were converted to LogMAR for analysis. Applying Fisher's exact and Mann-Whitney U tests with SPSS v29, two-tailed p value of <0.05 was considered statistically significant.

Results:

Total 68 articles were obtained after searches, 54 publications were included for analysis. 56 SiO filled eyes were analysed. Longer SiO tamponade time (p=0.002) and higher post-vitrectomy intraocular pressure (p=0.047) were found to be risk factors for CVM. Diabetic patients (p=0.05) were at borderline risk for CVM. Otherwise, age (p=0.43), gender, LogMAR VA, presence of congenital optic disc anomalies, optic nerve atrophy, cupping, presence of glaucoma drainage device, centistokes of SiO <5,000 (all with p=1.00), trauma (p=0.36), usage of buckle during vitrectomy (p=0.50) were not associated with CVM.

Conclusions:

SiO migration to CNS is rare with limited case reports. Our analysis of the existing literature demonstrated longer SiO tamponade time and higher post-vitrectomy intraocular pressure were associated with CVM, but not optic nerve atrophy, disc cupping, nor congenital optic disc anomalies.

Abstract No.: 200043

Poster No.: -P070 Panel No.: P070

Investigating the Effect of Quiet Eye Training on Quiet Eye Duration in Sports: A Systematic Review

First Author: Ming Chi CHOY

Co-Author(s): Kenneth LAI, Chun Fung Ken POON, Calvin CP PANG, Clement CY THAM, Yiu Man Hanson WONG, Kelvin KL CHONG

Purpose:

Quiet Eye Duration (QED) is a key factor in sports performance, accuracy, and decision-making through gaze fixation, target fixing instruction, and Virtual reality (VR) technology. However, it is unknown whether QE training correlates with longer QED.

Methods:

The information sources include PubMed, MEDLINE, The Cochrane Library – CENTRAL, Web of Science and EMBASE. The eligible criteria are studies on the QED training in sports performance. The study designs would be randomized control trials and reports of published or unpublished literature, limited to English, after 1994.

Results:

9 articles have been identified. Majority of the article defines Quiet Eye (QE) as gaze fixation within 1° (n=5) or 3° (n=4) for a duration of 100ms (n=6) or 120ms (n=2) before the execution of the target movement. 9 (n=201) out of 10 (n=237) eligible articles have shown significantly ($p<0.05$) longer QED after training compared to control group. Most QE training are QE-related instructions (n=8), terminologies including gaze fixation/ stable (n=5), or target focus (n=5). Article (n=2) also supplement with video of the participant's gaze behavior, comparing to that from elite players. The post-test retention of QED is usually measured after at least a week (n=6) or months (n=2). All articles that show strong evidence ($p<0.001$) (n=2) are performed on novice players. All articles which QE training are performed on expert or elite athletes (n=4) show moderate evidence (0.01) Conclusions: The effect of QED training on sport performance, and its effect on different levels of players, is a crucial area for further investigation.

Abstract No.: 200046

Poster No.: -P071 Panel No.: P071

Memantine for Optic Neuritis: A Systematic Review and Meta-analysis

First Author: Muhammad ALFATIH

Co-Author(s): Ida MUTHMAINNAH, Diski SAISA

Purpose:

To review the effects of memantine on optic neuritis.

Methods:

All aspects of the systematic review and meta-analysis adhered to the Cochrane Handbook. Eligibility criteria include RCT that compare between memantine and placebo for optic neuritis patients. Three databases (PubMed, Scopus, and CENTRAL) were systematically searched by a trained author using query: (memantine OR namenda OR memantine hydrochloride) AND (optic neuritis OR (optic nerve AND inflammation)). Titles, abstract screening, risk of bias assessment (using Cochrane RoB 2.0), and data collections were performed by two independent authors and if there were any conflicting decisions, the third author would decide the final decision. Data synthesis was done using Revman 5.4. Meta analysis was done using RevMan 5.4.

Results:

Search process yielded a total of 962 results. After rigorous selection, 2 studies were ultimately included in this review. Both studies were conducted in Iran, so the fixed-effect models were used for all outcomes. The result at 3-months post-intervention showed that retinal nerve fiber layer (RNFL) thickness reduction in memantine group was significantly lower in nasal (2.52 [0.70, 4.34]), superior (MD=1.97, 95%CI[0.45, 3.49]), inferior (MD=6.39, 95%CI[2.74, 10.03]) and overall (MD=2.53, 95%CI[0.69, 4.36]) quadrant. Meanwhile, in the temporal quadrant, it was not significant (MD=0.75, 95%CI[-1.60, 3.10]). Other outcomes such as visual evoked potential (VEP) (MD=0.93, 95%CI[-1.45, 3.31]) and visual acuity (VA) (MD=0.00, 95%CI[-0.03, 0.04]) were also not significantly different compared to placebo.

Conclusions:

Memantine has efficaciously reduced the RNFL thinning in most of the quadrants of optic neuritis patients, but failed to demonstrate significant results on visual function.

Abstract No.: 200074

Poster No.: -P072 Panel No.: P072

Interleukin-6 inhibitor in the treatment of bilateral autoimmune related compressive optic neuropathy

First Author: Arnold CHEE

Co-Author(s): Noel Ching-yan CHAN, Chun-yue Andrew MAK

Purpose:

To report a case of a patient with sight threatening, bilateral compressive optic neuropathy secondary to relapsing polychondritis related hypertrophic pachymeningitis, and the treatment outcome using Interleukin-6 (IL-6) inhibitor (Tocilizumab)

Methods:

A case report

Results:

A 55-year-old Chinese lady with relapsing polychondritis diagnosed in June 2020, presented with consecutive left then right painful blurring of vision one year after. Her presenting visual acuity (VA) was 20/35 for the right eye (RE) and 1/200 for the left eye (LE), with signs of left optic neuropathy (positive LE relative afferent pupillary defect [RAPD], failed color vision and constricted visual field). Magnetic resonance imaging (MRI) brain and orbit with contrast revealed left more than right compressive optic neuropathy secondary to hypertrophic pachymeningitis. Despite radiological and clinical improvement after pulsed intravenous (IV) methylprednisolone and cyclophosphamide, she developed both eyes (BE) relapses (5 times for LE, 2 times for RE) within 9 months with NADIR down to no light perception for BE. She eventually underwent weekly doses of subcutaneous Tocilizumab (TCZ). The compressive optic neuropathies were eventually under control with gradual but slow visual recovery. Her latest vision was 20/30 for the RE and 20/16 for the LE.

Conclusions:

IL-6 inhibitor therapy with Tocilizumab was effective in ameliorating sight threatening, steroid dependent relapsing polychondritis associated compressive optic neuropathy.

Abstract No.: 200221

Poster No.: -P073 Panel No.: P073

Headache and optic disc edema suggest autoimmune glial fibrillary acid protein (GFAP) astrocytopathy: a case report

First Author: Yang ZHAO

Co-Author(s): Lunhao LI, Quangang XU

Purpose:

GFAP astrocytopathy, which presented with headache, bilateral optic disc swelling and increased intracranial pressure.

Methods:

A 38y male memory loss occurred, feet felt like “stepping on cotton”. 2 months later he had decreased vision in both eyes, dark eyes, bilateral head swelling and pain with a pulsating sensation, neck pain, low-grade fever, and Lhermitte’s disease (+). Serum AQP4, MOG, GFAP were negative, homocysteine was 28.24 μmol/L, and various infection indicators were (-). CSF pressure: 190mmH2O; WBC147/μL; protein was 1.15g/L. CSF GFAP antibodies (+). Brain MRI: bilateral optic nerve thickening and abnormal signals, bilateral optic nerves, and multiple enhancements in the paraventricular, brainstem, and upper cervical spinal cord. Linear radial perivascular enhancement perpendicular to the ventricles can be seen.

Results:

The patient had a subacute onset, with symptoms of encephalopathy as the first manifestation, and then visual function impairment. MRI had characteristic imaging findings, and the cerebrospinal fluid was positive for GFAP antibodies, which is characteristic of typical GFAP-related diseases. After timely treatment, the patient’s vision improved, the scope of visual field defect was reduced, the symptoms of encephalopathy disappeared, and the enhanced lesions on MRI disappeared.

Conclusions:

This case points out that understanding the characteristic brain MRI findings of GAFP astrocytopathy is of great significance for the diagnosis of GFAP-A. Because cases are rare, the disease is easily missed or misdiagnosed. Therefore, early diagnosis of this treatable, self-limiting disease is a challenge and is crucial to prevent neurological deterioration as the disease progresses.

Abstract No.: 200035

Poster No.: -P074 Panel No.: P074

A rare cause of bilateral papilledema, POEMS syndrome - a case report

First Author: Jui Yen LIN

Purpose:

To report a case of bilateral papilledema, later diagnosed as Polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin changes (POEMS).

Methods:

This is a case report about a case of POEMS presenting with bilateral optic nerve swelling.

Results:

A 57-year-old Asian female presented to our emergency department due to abdominal fullness and dyspnea. Abdominal computer tomography (CT) showed massive ascites with enlarged lymph node at both sides of neck, axillary, and celiac region. Lymph node biopsy later revealed Castleman disease, plasma cell variant. Bilateral blurred vision was complained and ophthalmologist was consulted. Corrected visual acuity was 0.6 OD and 0.5 OS, respectively. Anterior segment examination was non-remarkable except mild cataract in both eyes. Fundus examination showed grade 1 disc edema in right eye and grade 2 disc edema in left eye. Papilledema was impressed. Brain MRI and spinal tapping were performed and revealed negative finding. Two months after papilledema was noted, progressive muscle weakness developed. Bone biopsy at right clavicle later revealed osteosclerotic plasmacytoma. POEMS syndrome was diagnosed. Systemic steroid was given, however, muscle weakness still progressed and later respiratory failure with CO2 retention developed. Patient was then intubated. Bone marrow biopsy later showed plasma cell myeloma (λ). Despite treatment with plasma exchange, intravenous immunoglobulin, and Bortezomib, patient passed away due to multiple organ failure and septic shock.

Conclusions:

POEMS syndrome should be considered among the differential diagnoses of all patients with a bilateral papilledema in which no other cause can be readily elucidated.

Abstract No.: 200058

Poster No.: -P075 Panel No.: P075

Glioblastoma multiforme presenting with optic neuritis, orbital inflammation and central retinal vein occlusionprotein (GFAP) astrocytopathy: a case report

First Author: Yang ZHAO

Co-Author(s): Lunhao LI, Quangang XU

Purpose:

To present a case of glioblastoma multiforme (GBM) which presented initially with only ophthalmic manifestations

Methods:

Retrospective chart review

Results:

A 61 year old man presented with blurred vision in his right eye for 3 months. He was found to have optic neuropathy, oculomotor and abducens nerve palsies and central retinal vein occlusion in the right eye. Magnetic resonance imaging (MRI) showed abnormal enhancement and swelling of the right optic nerve, extending from the chiasm to the orbit, suggestive of right eye optic neuritis with adjacent inflammatory changes are seen in the intraconal fat; there was no discrete mass. He was treated with intravenous steroids with oral taper for optic neuritis and orbital inflammation. Initial work up was negative. 2 months later, his left eye developed a temporal visual field defect. Repeat MRI showed new mass-like enhancement of the right optic nerve with intracranial extension and involvement of the optic chiasm and right hypothalamus, suggestive of neoplasm such as a primary optic pathway glioma. He underwent right supraorbital craniotomy and biopsy of optic nerve and hypothalamic glioma. Histopathology from the biopsies showed astrocytic neoplasm with high grade features and diagnosis of GBM was made. It was not responsive to temozolomide and radiotherapy and the patient passed away 5 months later.

Conclusions:

Optic nerve GBM is a rare neoplasm with challenging diagnosis and poor prognosis. It should be considered in patients presenting with optic neuritis and orbital inflammation which is not responding to treatment.

Abstract No.: 200062

Poster No.: -P076 Panel No.: P076

A case of Parinaud dorsal midbrain syndrome due to pineal germinoma with normal initial imaging

First Author: Anson Chun Long WU

Co-Author(s): Noel Ching-yan CHAN, Andrew MAK

Purpose:

To report a case of Parinaud syndrome but normal initial magnetic resonance imaging (MRI) and subsequent diagnosis of pineal germinoma complicated by pan-hypopituitarism with good response to neoadjuvant chemotherapy and radiotherapy.

Methods:

Case report with literature review.

Results:

A 20-year-old man presented with 3 months of diplopia and depressed mood. Examination revealed supranuclear upgaze palsy, convergence-retraction nystagmus and light-near dissociation. However, initial MRI did not identify any dorsal midbrain lesion. He presented again two years later with worsening diplopia and full blown signs of Parinaud syndrome. Blood tests showed pan-hypopituitarism, while repeated MRI revealed a pineal gland tumour spreading to the midbrain, hypothalamus and obex. Stereotactic biopsy confirmed pineal germinoma. He was put on pituitary hormone replacement therapy, and received four cycles of neoadjuvant etoposide/carboplatin followed by whole-ventricular radiotherapy with focal boost. Clinical response was evident with no diplopia at primary gaze and improved control of intermittent exotropia. Follow-up MRI showed tumour size reduction with mild residual disease, with no evidence of recurrence after three years. Retrospective review of the first set of MRI by experienced neuro-radiologists and case discussion in combined neuro-radiology meeting confirmed absence of tumour in the initial MRI.

Conclusions:

Parinaud syndrome can be the initial presentation of pineal germinoma before detectable pineal gland lesion on neuro-imaging. Close monitoring is required and repeated imaging is warranted especially when there is persistence or deterioration of visual symptom or hypopituitarism features. Multidisciplinary management is fundamental, while early recognition and treatment are crucial to save life, reduce morbidity and improve quality of life.

Abstract No.: 200070

Poster No.: -P077 Panel No.: P077

A Case Report Describing an Unusual Case of Idiopathic Intracranial Hypertension Unmasked by Repair of a Skull Base Defect

First Author: Marco VAN-BOSWELL

Co-Author(s): Noel Ching Yan CHAN, Chun Yue Andrew MAK

Purpose:

To report a case of idiopathic intracranial hypertension unmasked by repair of a skull base defect.

Methods:

A retrospective case report.

Results:

This is a case report describing a 14-year-old girl who developed idiopathic intracranial hypertension (IIH) after repair of a skull base defect. The patient sustained a skull base fracture at 2 years of age resulting in a CSF-draining defect, which we postulate enabled control of intracranial pressure (ICP). At 12 years of age, the patient suffered from hearing loss and underwent middle ear surgery for suspected cholesteatoma. Intraoperatively, cerebrospinal fluid (CSF) leakage was identified and she subsequently received repair and reconstruction of the skull base defect. Postoperatively, the patient developed signs and symptoms compatible with IIH and compressive optic neuropathy. This case report describes the patient's clinical presentation, investigations and management, and highlights the associated differential diagnoses.

Conclusions:

This is a rare presentation of paediatric IIH unmasked by repair of a traumatic skull base defect. This case demonstrates how in the presence of CSF leaks, signs and symptoms and hence the diagnosis of IIH may be obviated. Paradoxically, IIH can become clinically apparent through repair of a CSF leak. IIH is a diagnosis of exclusion requiring neuroimaging, opening pressure and CSF studies. The goals of treatment are to preserve vision and alleviate the symptoms of raised ICP.

Abstract No.: 200084

Poster No.: -P078 Panel No.: P078

Immune Checkpoint Inhibitor related Optic Perineuritis: A case report and review of the literature

First Author: Victor CHAN

Co-Author(s): Noel Ching-yan CHAN, Chun-yue Andrew MAK

Purpose:

To report a case of immune checkpoint inhibitor related optic perineuritis

Methods:

A retrospective case report

Results:

A 62-year-old lady with metastatic lung carcinoma was started on atezolizumab (an immune checkpoint inhibitor [ICI]) as part of the IMpower150 regimen since April 2021. After 3 weeks, she experienced bilateral painless visual decline and dyschromatopsia. On presentation, her visual acuities were 20/80 bilaterally. Neuro-ophthalmic examination showed left relative afferent pupillary defect, bilateral sluggish pupillary response, bilateral temporal disc pallor and reduced color vision. Humphrey visual field 30-2 testing showed a new right homonymous inferior quadrantanopia in addition to the previously known left homonymous hemianopia due to occipital lobe metastasis. There was no thinning of the retinal nerve fibre layer on optical coherence tomography, suggesting the optic neuropathy was of recent onset. Magnetic resonance imaging showed bilateral optic nerve sheath enhancement, with no leptomeningeal metastasis, nodular enhancement or optic nerve sheath thickening. The clinical findings were compatible with ICI-related optic perineuritis, with paraneoplastic optic perineuritis being a differential diagnosis. Atezolizumab was discontinued, and she was treated with intravenous methylprednisolone followed by oral prednisolone. She responded with vision improvement to 20/70 OD and 20/40 OS.

Conclusions:

ICI is increasingly used in the management of carcinoma with improved survival. Optic perineuritis is one of the potential consequences of ICI-associated inflammation and should be recognized among ophthalmologists and oncologists.

Abstract No.: 200085

Poster No.: -P079 Panel No.: P079

Mimicker of optic neuritis - Compression of the optic nerve by internal carotid artery aneurysm: A case report and literature review

First Author: Shin Shin LEE

Co-Author(s): Noel Ching Yan CHAN, Chun-yue Andrew MAK

Purpose:

To report an atypical case of compressive optic neuropathy with acute presentation mimicking optic neuritis (ON)

Methods:

Case report and literature review

Results:

A 56-year-old woman presented with sudden-onset, painless monocular vision loss in her left eye. Ocular exam revealed a central scotoma, decreased visual acuity (VA) to hand movement, dyschromatopsia, and an unremarkable fundus with pink disc and clear margins. Plain computed tomography scan of the brain yielded no abnormal findings. The initial presentation seemed most consistent with retrobulbar ON. Prior to consideration of steroid treatment, magnetic resonance imaging was ordered and revealed a 6*6 mm aneurysm of the supraclinoid ICA compressing the cisternal portion of the left optic nerve. The patient underwent endovascular coil embolization with flow diverter placement 26 days after presentation. Significant improvement in left eye VA from 3/200 to 20/16 was noted at 3 days post-operatively. Aneurysms encompass 13% of all compressive optic neuropathies and 38% of supraclinoid aneurysms present with visual symptoms. More common etiologies include pituitary adenomas, sphenoidal ridge or optic nerve sheath meningiomas. While most cases of nerve compression present with slow progressive visual loss, this case presented acutely, rendering diagnoses more difficult. Past literature has shown that a high rate of visual improvement can be achieved after clipping (58%), coiling (49%), and especially, flow diverter placement (71%).

Conclusions:

A supraclinoid ICA aneurysm can mimic acute optic neuropathy. Our case highlights the importance of neuroimaging prior to diagnosis or treatment of presumed optic neuritis. Substantial visual improvement is achievable via early surgical or endovascular intervention.

Abstract No.: 200108

Poster No.: -P080 Panel No.: P080

Steroid induced Myasthenia Gravis in a case of Optic Neuritis

First Author: Elaine WONG

Co-Author(s): Noel Ching-yan CHAN, Chun Yue Andrew MAK

Purpose:

To report on a case of steroid-induced Myasthenia Gravis

Methods:

Retrospective case report

Results:

A 57-year-old lady presented with 10-day history of right visual decline (visual acuity of 20/200) and pain on extraocular movement. Key clinical features include positive right relative afferent pupillary defect (RAPD), diffused disc swelling with peripapillary haemorrhage and macula star. Toxoplasma, bartonella and treponemal antibodies were negative. Magnetic Resonance Imaging (MRI) orbits showed enhancement and fat stranding near the anterior optic nerve. Clinical and radiological picture supported the diagnosis of right atypical neuritis with peri-neural involvement. Intravenous methylprednisolone was given, followed by oral prednisolone according to Optic Neuritis Treatment Trial (ONTT) recommendations. Despite improvement in pain upon steroid initiation, her extraocular movement worsened, with right exotropia and hypertropia. Initial differential diagnosis included inflammatory orbital apex syndrome. Later, she developed partial ptosis, dysarthria and dysphagia with diurnal variability. Ice pack test and Tensilon test were strongly positive. She was diagnosed of seronegative myasthenia gravis (MG). Mestinon and Azathioprine were started while on low dose steroid, and her diplopia and ptosis improved.

Conclusions:

MG may be induced or exacerbated by steroid. Should patients on steroids present with symptoms of MG, prompt investigations should be initiated.

Abstract No.: 200114

Poster No.: -P081 Panel No.: P081

Linezolid-induced optic neuropathy: A Case Report

First Author: Hui Kei SIT

Co-Author(s): Noel Ching-yan CHAN, Chun-yue Andrew MAK

Purpose:

To report a case of linezolid-induced optic neuropathy

Methods:

A retrospective case report

Results:

A 65-year-old lady was started on oral Linezolid since 7/2022 for mycobacterium pleural abscess with positive culture. She experienced bilateral blurring of vision since 6/2023 with a nadir visual acuity (VA) of right eye 5/80 and left eye 2/80. Examination revealed bilateral impaired color vision, sluggish pupillary responses and optic discs swelling. Reduction in bilateral lower limb sensation was also noted. All serological and radiological workup for neurological infections were negative. Opening pressure was 10cmH2O and cerebrospinal fluid study yielded normal biochemistry. The preliminary diagnosis was toxicity to Linezolid with bilateral disc swelling and visual decline. Upon cessation of Linezolid in 8/2023, gradual improvement of vision was observed. Optical coherence tomography (OCT) of retinal nerve fiber layer (RNFL) performed in 8/2023 showed residual right optic disc swelling with average RNFL measurements of 105um (Right eye) and 99um (Left eye) which subsequently resolved in 11/2023 measuring 90um (right eye) and 82um (left eye). Her visual fields also improved from initial failed perimetry in 8/2023 to nearly full in 2/2024. There was also improvement in her color vision and VA to 20/40 (Right eye) and 20/60 (Left eye) in 7/2024. However, bilateral lower limb sensation reduction persisted.

Conclusions:

Majority of visual loss from Linezolid-induced optic neuropathy could be treated by early recognition and drug cessation. Regular ophthalmic monitoring would be beneficial for earlier intervention to avoid progression and further loss of vision.

Abstract No.: 200172

Poster No.: -P082 Panel No.: P082

A ten-year late diagnosis - a case of binocular optic atrophy

First Author: Da TENG

Co-Author(s): Tao FU

Purpose:

Hereditary spastic paraplegia is a group of neurodegenerative disorders that affect the corticospinal tracts and have various ocular manifestations in specific subtypes, including cataracts, optic atrophy, and retinal pigment degeneration. In this report, we present a unique case where an uncommon site mutation resulted in initial presentation of optic atrophy and subsequent diagnosis of HSP type 79A in a patient.

Methods:

The patient experienced bilateral visual impairment ten years ago, with best-corrected visual acuity of 0.4 in both eyes and pale temporal discs observed during fundoscopy. Optical coherence tomography (OCT) revealed bilateral thinning of the retinal nerve fiber layer (RNFL), while MRI showed no abnormalities. mtDNA testing identified mutations 5178C>A and 8414C>T, suggesting potential involvement of Leber hereditary optic neuropathy. Recently, the patient also developed syncope episodes, cerebellar ataxia, gait disturbances, and seizure-like symptoms.

Results:

Whole-exome gene sequencing performed on top of pre-existing optic atrophy confirmed a heterozygous UCHL1 gene mutation c.366_367del (p.Lys123AsnfsTer4), further supporting the diagnosis of autosomal dominant HSP type 79A. It should be noted that neither parent was found to carry these mutations.

Conclusions:

Optic atrophy can be associated with numerous eye-related and systemic disorders; however clinical diagnosis remains challenging and susceptible to misdiagnosis or missed diagnoses.

Abstract No.: 200200

Poster No.: -P083 Panel No.: P083

Anterior ischaemic optic neuropathy following cosmetic facial self-injection of hyaluronic acid, botulinum toxin and local anaesthetic- a case report

First Author: Sze Wai Venice LI

Co-Author(s): Kar Mun Carmen CHAN, Charmaine FU, Cheuk Ling YIM

Purpose:

Increasing popularity of filler and botulinum toxin (botox) injections for cosmetic purposes has led to a rise in cases with visual complications, most commonly central retinal artery occlusion. We report a case of AION immediately after cosmetic facial injections.

Methods:

A healthy 41-year-old woman with no formal medical training, presented with sudden left monocular visual loss after self-injecting hyaluronic acid, botox, lignocaine and adrenaline to her forehead and bilateral temple region. She experienced immediate left eye blurring of vision, pain, nausea and vomiting after injection. Upon presentation to emergency department one day later, left eye visual acuity was counting fingers. There was mild left lid bruising and subconjunctival hemorrhage. Extraocular movement was normal, with no proptosis, but left relative afferent pupillary was detected. Her left eye also had a superior visual field defect. Fundal examination revealed left disc swelling without signs of retinal artery occlusion or retinal ischemia. MRI brain and orbit with contrast was subsequently performed to rule out other causes of optic neuropathy.

Results:

This patient was diagnosed with left anterior ischaemic optic neuropathy (AION) probably due to retrograde flow of the injected agents through the ophthalmic artery leading to optic nerve insult.

Conclusions:

AION is a rare complication of cosmetic filler/ botox injection and a cause of irreversible visual loss. The public should be alerted to the potential blinding complications of cosmetic injections, and these procedures should not be performed by individuals without appropriate medical training and knowledge of facial anatomy.

Abstract No.: 200093

Poster No.: -P084 Panel No.: P084

Systemic Lupus Erythematosus Optic Neuritis in a Young Male with Tuberculosis

First Author: Fabiola SUPIT

Co-Author(s): Fransiska GRACELLA, Anak Agung Mas Putrawati TRININGRAT, Made Paramita WIJAYATI

Purpose:

Optic neuritis is a rare ocular manifestation in both systemic lupus erythematosus (SLE) and tuberculosis (TB). Both may cause each other and have similar presentation including in the eyes. We present a case of bilateral optic neuritis in a confirmed TB and SLE patient.

Methods:

An 18 years old male complained of painless blurry vision in both eyes, headache and general systemic worsening started 3 weeks after anti-tubercular treatment (ATT) initiation. Subsequently he was also diagnosed with severe SLE. Both eyes visual acuity (VA) was 6/30 with total color blindness. Fundus examination showed optic nerve head (ONH) swelling as well as scattered flame shaped hemorrhage, exudation and cotton wool spot. Perimetry showed central defect on both eyes. He was diagnosed with Optic neuritis due to SLE with Retinal Vasculitis. One month after optic neuritis treatment trial (ONTT), patient's VA was 6/9 on both eyes, improved color vision and reduced ONH swelling.

Results:

Mycobacterial infection could induce SLE flare due to molecular mimicry, while ATT (especially isoniazid) has been linked to drug induced SLE. SLE patients are more likely to develop TB because of multiple immune abnormalities and immunosuppressive treatment. Younger age at SLE diagnosis also increases the risk developing TB. Considering associated retinal findings, and better respond to ONTT than ATT, we believe this case to be more of a SLE optic neuritis.

Conclusions:

Understanding and thorough investigation of ophthalmic and systemic findings may lead to proper diagnosis and treatment to save vision.

Abstract No.: 200040

Poster No.: -P086 Panel No.: P086

Optical Coherence Tomography of the Macular Ganglion Cell Complex Demonstrating Transsynaptic Retrograde Degeneration from a Temporal Lobe Tumor

First Author: Franz Marie CRUZ

Co-Author(s): Jian Carlo NARAG

Purpose:

To report an adult male who had homonymous sectoral thinning of the macular ganglion cell complexes in both eyes following craniotomy with total excision of a large left temporal lobe mass demonstrating transsynaptic retrograde degeneration

Methods:

This is a case report.

Results:

We report a male in his 30s who had generalized tonic-clonic seizure with loss of awareness. Investigations led to a diagnosis of a left temporal lobe tumor. He underwent resection of the mass and was found to have a complete right homonymous hemianopia in the immediate postoperative period. Macular ganglion cell analysis on optical coherence tomography (OCT) showed homonymous thinning affecting the inferonasal sector in the right eye and inferotemporal sector in the left eye.

Conclusions:

This case demonstrates transsynaptic retrograde degeneration through the interruption of the inferior optic radiation, and its corresponding effect on the structure and function of the affected retinal field.

Abstract No.: 200044

Poster No.: -P087 Panel No.: P087

Isolated sixth nerve palsy secondary to intracranial tuberculoma: A rare case report

First Author: I Ketut

Purpose:

This case report describes a case of isolated sixth nerve palsy due to intracranial tuberculoma in patient with on-treatment tuberculosis.

Methods:

Case Report

Results:

A 21-year-old female patient came with horizontal diplopia and a squint inward of the right eye for a week before examination. She also complains of headaches before double vision. Other systemic symptoms and neurological deficits was denied. Patient with treatment for tuberculosis for the last 5 months. Visual acuity is 6/6 on both eyes; eye position is 15 degrees of esotropia and there is a restriction of abduction movement on the right eye. The rest of the examination is within normal limits. From the CT-Scan examination, there is a multiple small enhancing cluster lesion suggesting tuberculoma. The patient was diagnosed with isolated sixth nerve palsy due to intracranial tuberculoma and was given 1 mg/kg BW methyl prednisolone orally and a tapering dose every week while continuing the anti-tuberculosis treatment. After 2 weeks, diplopia and right eye restriction become resolved and eye position become ortotropia.

Conclusions:

Intracranial tuberculoma is a rare manifestation, and one of the intracranial masses caused by tuberculosis infection. Isolated sixth nerve palsy is one of the cranial nerve palsies can be affected. Early detection can prevent further deterioration. Neuroimaging plays an important role in diagnosis. Anti-tuberculosis and corticosteroid therapies are effective in treatment of intracranial tuberculoma.

Abstract No.: 200092

Poster No.: -P088 Panel No.: P088

Isolated Visual Field Defect following Cosmetic Facial Fat-filler Injection: A Rare Occurrence

First Author: Fransiska GRACELLA

Co-Author(s): Fabiola SUPIT, Anak Agung Mas Putrawati TRININGRAT, Made Paramita WIJAYATI

Purpose:

The dermal filler injection for facial rejuvenation is a minimally invasive procedure, however it carries the risk of serious eye complications and even life-threatening complications. Of the various types of filler available, autologous fat is the one that most often causes the side effect of permanent visual defect.

Methods:

A female patient, 31 years old, came with blurriness in the lower area of the right eye sight. She had a history of fat filler injection on the right forehead 2 weeks earlier and the skin around the injection site changed colors and became flaky. Visual acuity (VA) was 6/6 on both eyes. Ishihara test, Pelli-Robson contrast sensitivity, and head Magnetic Resonance Imaging (MRI) with contrast showed no abnormalities. Confrontation test revealed decreased visual field on the inferior nasal of the right eye (RE). The Humphrey test of the RE also showed defect on the inferior visual field, within 10o to the temporal side from the fixation point. Ischemia process was suspected, patient was diagnosed with RE suspect Ischaemic Optic Neuropathy.

Results:

Embolic event likely occurred within the supraorbital artery, potentially propelled into the ophthalmic artery if the injected material overcomes intra-arterial pressure and retrograde flow may occur. This was supported by the presence of necrosis at the injection site which indicates an infarction of the surrounding tissue.

Conclusions:

Fat-filler injection can result in visual field defects as a sole complication. This adverse event may not be as severe as in other cases, but it may still cause significant discomfort for those affected.

Abstract No.: 200184

Poster No.: -P089 Panel No.: P089

Sporadic CPEO Plus caused by a RRM2B and a SLC25A4 mutation: digenic inheritance

First Author: Chaoyi FENG

Co-Author(s): Qian CHEN, Ping SUN, Xinghuai SUN, Guohong TIAN*

Purpose:

We report a case of CPEO plus with a digenic inheritance in RRM2B and SLC25A4, with involvement of the eyelids, extraocular muscles, outer retina, auditory system, and cerebral white matter.

Methods:

Female, 35 years old, loss of vision in both eyes for six months with color vision impairment, night blindness and photophobia. Diplopia for 15 years, ptosis for 3 years, and tinnitus with hearing loss for 4 years. She underwent Neuro-ophthalmological examinations.

Results:

Best-corrected visual acuity was 20/200 in the right eye and 20/125 in the left eye. The movement of both eyeballs were limited. Fundus autofluorescence showed that regions of hyper-autofluoresence and hypo-autofluorescence in the macula were distributed in concentric circles. OCT showed thinning of the retina and absence of the outer layer of the macula. The visual field showed central scotoma in both eyes. ERG showed the absence of cone cell reaction and the presence of rod cell reaction. MRI showed thinning of the extraocular muscles and extensive cerebral white matter lesions. Muscle biopsy showed a small number of RBF and COX-negative fibers, suggesting mild myogenic damage. Results of Whole Exome Sequencing: c.455+3A>T in RRM2B gene and c.598+3G>A mutation in SLC25A4 gene.

Conclusions:

The present case is the first CPEO plus case with double mutations in RRM2B and SLC25A4, confirming that the clinical phenotype of this type of disease may be due to abnormalities in two different genes affecting mitochondrial DNA simultaneously.

Abstract No.: 200240

Poster No.: -P090 Panel No.: P090

A case of central retinal artery occlusion caused by cervical internal carotid artery vasospasm.

First Author: Pei LIU

Co-Author(s): Xuemei LIN, Qingli LU, Songdi WU

Purpose:

A case of central retinal artery occlusion caused by cervical internal carotid artery vasospasm.

Methods:

A case report.

Results:

The patient was a 70-year-old male. The chief complaint was transient visual loss of right eye for 1 day. The vision reached the nadir of no light perception. The patient came to the hospital because of persistent vision loss of right eye. Optical coherence tomography angiography (OCTA) showed edematous inner retinal layer and reduced blood vessel density in the macular area. The initial diagnosis was considered as central retinal arterial occlusion (CRAO), and the emergency digital subtraction angiography (DSA) and ophthalmic artery thrombolysis were given. Intraoperative angiography at the aortic arch showed screw thread spasm of C1 segment of bilateral internal carotid artery (ICA) and spasm of right ophthalmic artery. The comprehensive therapies including papaverine, tirofiban hydrochloride, anisodine, and eye acupuncture were given. After 2 weeks of treatment, the visual acuity and OCTA results were significantly improved.

Conclusions:

Cervical ICA vasospasm is a rare neurological vascular disease, which can cause ocular ischemia, cerebral infarction, acute coronary ischemia, severe headache. This article reports a rare case of ICA vasospasm with transient monocular amaurosis and eventual CRAO, so as to improve the understanding of this rare disease and emphasize the importance of DSA in broadening the etiological spectrum of CRAO.

Abstract No.: 200260

Poster No.: -P091 Panel No.: P091

Satralizumab therapy for bilateral refractory optic neuritis following the first dose of bivalent human papilloma virus vaccine

First Author: Zhe LIU

Co-Author(s): Chuan-bin SUN

Purpose:

To report the clinical and MRI characteristics of a case of bilateral refractory demyelinating optic neuritis (DON) which occurred three days after the first dose of bivalent human papilloma virus (HPV) vaccine.

Methods:

case report

Results:

The patient experienced bilateral severe visual loss three days after HPV vaccination, and her vision was quickly deteriorated to no light perception one day after the onset of DON. Ophthalmic examination revealed d sluggish pupillary light reflex and swollen optic disc in both eyes, and an emergent orbital MRI examination revealed bilateral hyperintensity and enlargement of the intraorbital optic nerve with contrast enhancement. Serological tests for aquaporin-4 IgG antibody, myelin oligodendrocyte glycoprotein IgG antibody, and other common autoantibodies were all negative. The patient showed poor response to 10 days' methylprednisolone pulse therapy, and three-dosed subcutaneous satralizumab is then used in the acute stage of DON as an add-on therapy. Her vision gradually progressed after satralizumab therapy, and improved to 20/20 and 20/40 in the right and left eye at the 6-week follow-up. To our knowledge, this is the first case report of satralizumab therapy in the AQP-4 Ab/MOG-Ab double negative isolated DON.

Conclusions:

Our study indicates that satralizumab is a safe and efficient add-on therapy which can be used in the early stage of the refractory DON poorly responding to steroid pulse therapy.

Abstract No.: 200265

Poster No.: -P092 Panel No.: P092

Optic disc edema with decreased visual function after high-altitude exposure

First Author: Yuyu LI

Purpose:

A high incidence of clinical optic disc edema in high altitudes has been shown; however, almost all patients completely regress on return to lowlands and do not complain of visual symptoms such as vision loss or visual field defect. Here, we report six patients with optic disc edema and remarkably decreased visual function after high-altitude exposure, which we diagnosis as nonarteritic anterior ischaemic optic neuropathy (NAION).

Methods:

Clinical characteristics, intracranial pressure, and testing for risk factors associated with NAION were collected retrospectively.

Results:

Eleven eyes of six patients (five male and one female) were included, with a mean age of 47.3 ± 11.76 (range 28-63) years. Simultaneous bilateral eye involvement was present in 83.3% of (5/6) patients. All cases presented diffuse disc edema at the time of onset. There was a definite time lag, which ranged from 7 days to 1 month, between arrival at high altitude and onset of symptoms. All patients had normal intracranial pressure. Mean vision acuity was worst (20/50) at 2 weeks, and the best mean vision acuity was 20/30 at 6 months. Visual field defects were seen in all patients at the early stage of the disease and had eventual remnants. All patients had small cup-to-disc ratios. One patient had hypertension and severe sleep apnoea; one had hypercholesterolemia and hypertension; and one had hypercholesterolemia.

Conclusions:

Optic disc edema with decreased visual function and visual field defects after high-altitude exposure can occur. The possibility of NAION should be considered in this situation.

Abstract No.: 200098

Poster No.: -P093 Panel No.: P093

THE GREAT IMITATOR'S ENIGMA : A CASE OF MILLIARY TUBERCULOSIS MANIFESTING AS CHOROIDAL TUBERCULOMA , PSEUDO FOSTER KENNEDY SYNDROME FOLLOWING CEREBRAL TUBERCULOMA

First Author: Lukisiari AGUSTINI

Co-Author(s): Muh. FIRMANSJAH, Wimbo SASONO

Purpose:

Miliary tuberculosis is a disseminated form of tuberculosis (TB), a condition arising from Mycobacterium tuberculosis infection. Milary TB occurs when the bacteria spread through the bloodstream and affect multiple organs. We report a rare case of cerebral tuberculoma with pseudo foster kennedy syndrome and choroidal tuberculoma as ocular manifestation of miliary tuberculosis.

Methods:

A 18-year-old girl was consulted from the paediatric emergency room to our clinic with chief complaint of blurred vision in right eye, headache, fever, and vomiting for three days with negative meningeal sign. Right eye visual acuity was 1/60 and left eye was 6/6. Anterior segment of the eyes were within normal limits. We found optic atrophy and multiple choroidal tuberculoma in the right eye and papilledema in the left eye. Patient is planned for chest imaging, brain imaging, laboratory test for tuberculosis, and lumbal puncture.

Results:

Laboratory findings suggested positive tuberculosis result. Chest imaging showed miliary pattern on both lungs with left pleural effusion. MRI showed multiple tuberculoma at sylvii fissure, temporal horn of right and left ventricle, pre pontine cystern and right forth ventricle. Patient is treated with intravenous ceftriaxone and dexamethasone alongside initiation of antitubercular therapy. Papilledema was resolved and right eye visual acuity improved to 2/60 within two months. The patient is on long-term antitubercular treatment plan.

Conclusions:

Multidisciplinary collaboration in managing miliary tuberculosis by formulating treatment plans, monitoring, and addressing treatment's side effects is essential for the patient clinical improvement. Those steps is necessary in preventing infectious spread within the community.

Abstract No.: 200102

Poster No.: -P094 Panel No.: P094

Filler Fallout: Diplopia Unveiled

First Author: Salmarezka DEWIPUTRI

Co-Author(s): Sita AYUNINGTYAS, Sidik MOHAMAD, Syntia NUSANTI

Purpose:

To describe a patient who presented acute painful diplopia after a facial filler procedure that resolved after 1 month.

Methods:

A previously healthy 40-year-old woman came with acute painful binocular double vision for 4 days after undergoing an unknown filler injection in her forehead, nose, and jawline. There was swelling in her right eye, headache, nausea, vomiting, and shivering. The pain and swelling became worsening involving the nose and cheeks. The clinic gave her hyaluronidase injection, mefenamic acid, aspirin, and dexamethasone. Examination revealed mottling and necrosis tissue at the nose, 15-degree exotropia, and right hypertrophy with adduction and infraduction deficit of the right eye. The right eye (RE) showed oedema and ptosis, subconjunctival bleeding. Pupil of both eyes was isochoric with no relative afferent pupillary defect. Fundus of both eyes was normal. Orbital MRI showed a subcutaneous lesion in the proximal nasal region extending to the medial side of the right nasal region, involving the right medial rectus muscles, and right inferior rectus muscle with slight hypertrophy and edema of both muscles. She was diagnosed with binocular diplopia due to filler infiltration and skin and soft tissue infection (SSTI) due to iatrogenic. She underwent skin debridement and was given ampicillin sulbactam, dexamethasone, and ketorolac intravenous.

Results:

Over the following month, the patient's diplopia resolved, but she developed skin scarring.

Conclusions:

Proper knowledge of facial and periocular anatomy is imperative for practitioners to perform filler injections and manage potential complications safely. Patients should be guided about the possible risks of this procedure.

Abstract No.: 200127

Poster No.: -P095 Panel No.: P095

Nine Syndrome, A Case Report

First Author: Youko SAKURAI

Co-Author(s): Maria Karina MONTESINES

Purpose:

To report a case of a 45 year old female diagnosed with Nine syndrome.

Methods:

This is a case report of Nine syndrome with Hypertensive emergency who presented with left horizontal gaze palsy, adduction deficit of the left eye, abducting nystagmus on the right eye. left-sided facial weakness and contralateral lower limb weakness. Pharmacologic treatment was instituted for neuroprotection and hypertension control.

Results:

Ocular examination revealed visual acuity of 20/20, OU. Color vision of 16/16, OU without visual field cuts. Pupils were 2-3mm equally reactive to light. Motility tests showed horizontal conjugate gaze palsy to the left, adduction deficit of the left eye, and abducting nystagmus on the right eye. Neurologic examination exhibited left-sided facial weakness. unsteady gait. with Motor strength of 4/5 in the right lower limb. Cranial MRI findings were small focus acute to subacute infarct involving the mid posterior region of the pons. Significant improvement were noted on patient's ocular complaints and muscle weakness after completion of therapy.

Conclusions:

This is a case of a 45-year-old female who initially presented with dizziness, diplopia and elevated BP. Nine Syndrome is a rare and complex neuro-ophthalmologic disorder characterized by a combination of clinical signs from three classic syndromes: One and a Half Syndrome, ipsilateral facial palsy, and contralateral hemiparesis/hemianesthesia. Cerebrovascular accidents may present with a myriad of sensory and motor disorders. Timely recognition, appropriate management of hypertensive emergencies, and close follow-up are essential for optimizing patient care and outcome.

Abstract No.: 200137

Poster No.: -P096 Panel No.: P096

An Unexpected Link Between Bilateral Vision Loss and Hypophosphatemia

First Author: Xiaolai ZHOU

Purpose:

To understand the disease mechanism of a rare case with bilateral vision loss caused by optic disc edema.

Methods:

Ocular and systemic examinations, whole exome sequencing and functional studies were conducted to understand the disease mechanism of the case.

Results:

Ophthalmoscopic examination revealed optic disc edema, while the rest of the ophthalmologic examination was unremarkable. MRI showed bilateral widening of the optic nerve subarachnoid space and an empty sella, both suggestive of elevated intracranial pressure. A subsequent lumbar puncture confirmed elevated CSF pressure at 220 mmH2O, with routine, biochemical, immunological, and cytological analyses of the CSF showing no significant abnormalities. MRV indicated bilateral transverse sinus cranial venous sinus thrombosis (CVST). Blood tests revealed normal thrombosis-related parameters but severe hypophosphatemia and elevated parathyroid hormone (PTH) levels. Ultrasound and X-ray examinations showed parathyroid hyperplasia, osteoporosis, and kidney stones. Whole exome sequencing identified a mutation in SLC34A1 (c.1753T>C, p.Ser585Pro). Further laboratory studies confirmed that this mutation impairs the renal phosphorus reabsorption function of the encoded protein, the sodium-phosphate cotransporter, located in the proximal renal tubule.

Conclusions:

We uncovered the disease mechanism in a rare case of bilateral vision loss: a mutation in SLC34A1 impairs renal phosphorus reabsorption, leading to hypophosphatemia. The resulting decrease in serum phosphate stimulates the secretion of PTH, which increases the dissolution of calcium phosphate in the bone to elevate serum phosphate levels. Simultaneously, this process raises serum calcium levels. Elevated serum calcium predisposes the patient to hypercoagulability, resulting in CVST, which subsequently causes optic disc edema and leads to bilateral vision loss.

Abstract No.: 200164

Poster No.: -P097 Panel No.: P097

Bilateral Optic Neuropathy following Sintilimab treatment for poorly differentiated gastric adenocarcinoma

First Author: Lunhao LI

Co-Author(s): Shihui WEI, Caiwen XIAO, Yang ZHAO

Purpose:

Anti-PD-1 immunotherapy reactivates T-cell activity to boost the antitumor effect and may trigger autoimmune toxicity in various organ systems including ocular structures. To date, immune related optic neuropathy in gastric adenocarcinoma patients has not been reported in English literature. Thus, the authors report a case of bilateral optic neuropathy following Sintilimab treatment in a gastric adenocarcinoma patient.

Methods:

A 53-year-old male was diagnosed with stage IVB cT3NxM1gastric adenocarcinoma and received neoadjuvant chemotherapy and immunotherapy (Sintilimab +Oxaliplatin+Tegio+Apatinib). Three weeks after his seventh chemotherapy cycle, he presented with painless blurred vision and decreased color vision in both eyes. The BCVA was 4/200 in right eye and hand move in left eye. The intraocular pressure was 10 mmHg in both eyes. Slit-lamp examination revealed normal cornea and clear anterior chamber in both eyes. The left eye has a positive RAPD sign. The optic disc of both eyes is highly swollen with unclear pale edges. OCT indicates left eye subretinal fluid in maculopapillary bundle area. Serum AQP4, MOG, MBP antibodies are negative. A diagnosis of bilateral immune-related neuroretinitis was made. Sintilimab was discontinued and intravenous methylprednisolone followed with oral prednisone was administratered.

Results:

After 6 months, the BCVA was 8/200 and 4/200 in right and left eye respectively. Fundus examination revealed a pale optic disc in both eyes. Gastric adenocarcinoma showed no recurrence.

Conclusions:

This case report suggested that patients with gastric adenocarcinoma undergoing anti-PD-1 therapy should be closely monitored for ophthalmic assessment and alert to the occurrence of Sintilimab-induced optic neuropathy.

Abstract No.: 200170

Poster No.: -P098 Panel No.: P098

Reversible optic cortex syndrome of snake venom

First Author: Xiaoyong HUANG

Co-Author(s): Wei CHEN

Purpose:

A 40-year-old man with snake bite presented to the emergency department with a 3-day history of blindness in his both eyes.

Methods:

Visual acuity were NLP in both eyes. There was poor light reflex in both eyes. Ophthalmoscopy revealed flocculent exudation can be seen beside the optic disc in the right eye. Flash visual evoked potential failed to induce significant P2 waveform. Fluorescein angiography disclosed weak fluorescent blob occlusion around the optic disc in the right eye and under the optic disc in both eyes, local bleeding occlusion with capillary dilation near the optic disc, and late leakage fluorescence. CT head perfusion imaging showed that blood perfusion in the above lesion area was significantly lower than that on the right side, and there was basically no blood perfusion in the pressure lesion of the corpus callosum, suggesting infarction. Head 7.0T MRI: Left temporo-occipital lobe and corpus callosum showed cerebral infarction.

Results:

A diagnosis of binocular cortical blindness, cerebral infarction of left temporo-occipital lobe and corpus callosum, Rhabdomyolysis, and snake bite was made. Treatment with Snake tablet oral, cerebral infarction secondary prevention, improve microcirculation, nutritional nerve agents and a 2-week course of subcutaneous injection besides superficial temporal artery with compound anisodine was initiated.

Conclusions:

At a 1-month follow-up visit, the patient's vision had improved, BCVA were 20/20 in the right eye and 20/32 in the left eye. The application of 7-T HR-MRI helped confirm the underlying cause of cryptogenic TIA and facilitated treatment decisions for the patient.

Abstract No.: 200211

Poster No.: -P099 Panel No.: P099

Optic Nerve Sheath Meningioma, An Atypical Presentation in A Filipino Male Patient: A Case Report

First Author: Xylene FIGUEROA

Purpose:

This paper discusses a case of a 23 years old male who had been experiencing intermittent monocular blurring of vision which eventually progressed to sudden non-resolving blurring of vision on the same eye. The patient initially presented with optic nerve swelling who then developed Central Retinal Artery Occlusion (CRAO). Imaging then showed an optic nerve mass with a possibility of it being an Optic Nerve Sheath Meningioma (ONSM), Optic Nerve Glioma (ONG) and Optic Nerve Lymphoma (ONL).

Methods:

An incision biopsy via medial and lateral orbitotomy approach was then done due to the inconclusive imaging finding.

Results:

Biopsy findings then revealed Optic Nerve Sheath Meningothelial Meningioma, WHO grade I. Vision then improved from hand movement with light projection to 20/100.

Conclusions:

Optic Nerve Sheath Meningioma (ONSM) is a rare type of optic nerve tumor that commonly presents with a triad of progressive deterioration of vision, primary optic nerve atrophy, and formation of optociliary shunt vessels. Despite the vast literature demonstrating the usual presentations of optic nerve sheath meningioma, some patients may still present with atypical features. Despite radiographic imaging being the gold standard in diagnosing ONSM, for this case, a definitive diagnosis had to be made via incision biopsy. Patient was then referred for radiotherapy which is the mainstay of treatment for ONSM.

Abstract No.: 200220

Poster No.: -P100 Panel No.: P100

Nonarteritic Anterior Ischemic Optic Neuropathy Following Acute Angle-Closure Glaucoma in Both eye

First Author: Yang ZHAO

Co-Author(s): Xuanchu DUAN, Wei SUN

Purpose:

NAION is believed to result from inadequate blood supply to the posterior ciliary arteries. To date, NAION in a patient with AACG has been reported in only 15 studies in the English literature. The author report a case of NAION following AACG in a Chinese patient.

Methods:

A 55-year-old male presented with a 7day and 4day history of acute ocular pain and decreased vision in her OD and OS; BCVA was logMAR 1 and the IOP was 19 and 40mmHg in the OD and OS. Slit-lamp examination revealed diffuse corneal edema, shallow anterior chamber, mid-dilated pupil with loss reflection of light in both eye. Gonioscopy revealed a grade 0 angle, and a relative afferent pupillary defect was not noted. Visual evoked potential of both eye at the initial visit showed a decreased amplitude of P100. A diagnosis of NAION following AACG was made.

Results:

The patient was diagnosed with NAION secondary to AACG in both eye, a rare clinical entity which can result in markedly decreased visual acuity. Phacoemulsification and intraocular lens implantation with goniosynechialysis was successfully performed to both eye. Two months later, IOP is 15 and 12mmHg and BCVA is logMAR 0.3 and 0.5 in right and left eye respectively. Fundus examination revealed a pale optic disc in both eyes.

Conclusions:

NAION following AACG may be attributed to an acute IOP rise with resultant perfusion pressure decrease in the vessels which supply the optic nerve. NAION secondary to AACG is a rare clinical entity that can result in severe vision loss.

Abstract No.: 200295

Poster No.: -P101 Panel No.: P101

Case of pituitary tuberculosis

First Author: Anselmo David E. ULTRA
Co-Author(s): Rexelle F. PIAD, Karen B. REYES

Title of the case:

Case of persistent inferior visual field cut post operatively

History & Examination summary prior to diagnosis:

A 47 year old male patient presented with sudden onset inferior visual field cut on the left eye's two years prior, accompanied by daily temporal headaches a pain score of 9/10and recurrent generalized weakness. Initial consultation with neurology services prompted referral to neurosurgery. Cranial MRI revealed a sellar area mass, necessitating surgical intervention. The patient underwent surgery, which was well-tolerated, but inferior visual field defects persisted on the left eye postoperatively. Throughout the interim period, there were no changes in the visual field defects, and the patient did not report any other ocular symptoms. Persistent visual field defects prompted a consultation in the outpatient department. Upon examination, the patient's visual acuity was measured at 20/20 in the right eye and 20/200-1 in the left eye without correction. Autorefraction showed a minor refractive error in the right eye (-0.25 spherical) and a slight astigmatism in the left eye (+0.00 spherical, -0.25 cylindrical axis 4). Ishihara color vision testing indicated full color perception in the right eye (16/16), but significant color vision impairment in the left eye (5/16). Amsler grid testing revealed no metamorphopsia or scotoma in the right eye, while the left eye showed no metamorphopsia but demonstrated an inferior nasal and temporal scotoma. The patient's pupils were measured at 2-3 mm and briskly reactive to light in the right eye, while the left eye sluggishly constricted to 5mm to light, and exhibited a positive relative afferent pupillary defect (RAPD). Intraocular pressure was measured at 14 mmHg in both eyes by tonometry, with clear corneas and deep anterior chambers observed during slit lamp examination.

Final diagnosis:

Pituitary Tuberculosis

Case summary & Discussion:

The patient sought ophthalmology consult due to persistent visual field cut on the left eye after undergoing uncinectomy, maxillary sinus antrostomy, ethmoidectomy and sphenoidotomy with middle turbinectomy, right sphenoidotomy, left and RF turbinoplasty 2 years prior. Review of the case revealed that the patient presented with sudden onset of inferior visual field cut with associated recurrent headaches. Pituitary masses, commonly an adenoma are usually slow growing. Presenting symptoms are usually progressive from months to years.Cranial MRI revealed Sellar/suprasellar mass as described with mass effect on the optic chasm and possible bilateral parasellar invasion (Knosp Grade 2). No evident area of abnormal signal intensity, restricted diffusion nor susceptibility detected to denote acute infarct or hemorrhage in the brain parenchyma. Ethmoidal and right frontal sinus disease. At the time the patient was assessed as a case of sellar mass, to consider pituitary macroadenoma. Histopathology of the mass revealed Chronic granulomatous inflammation with Langhans-type giant cells of likely of

tuberculous etiology. Patient was given anti-koch's therapy.

Case dilemma:

The patient was initially thought to be a case of pituitary macroadenoma, but excision and histopathology revealed a rare case of pituitary tuberculosis. The patient was treated with antikoch's but present findings show persistent optic neuropathy.

Teaching points:

1. Understanding the diagnosis of sellar and suprasellar masses presents significant challenges, as illustrated by this case. Initially, imaging and clinical signs pointed towards a pituitary macroadenoma, but the post-surgery histopathological analysis revealed chronic granulomatous inflammation indicative of pituitary tuberculosis. This case underscores the importance of considering less common causes in differential diagnoses, especially in regions where tuberculosis is prevalent.

2.Surgical removal remains essential in managing pituitary masses to alleviate pressure effects and obtain tissue for precise diagnosis. Despite undergoing surgery in this instance, the patient continued to suffer from persistent optic neuropathy, highlighting the necessity for thorough pre-operative assessments and ongoing post-operative monitoring to address potential complications and assess treatment effectiveness.

3.Managing sellar and suprasellar masses requires a collaborative effort involving neurology, neurosurgery, ophthalmology, and pathology. Each specialty brings unique expertise to the table, contributing to the accurate diagnosis, surgical planning, and comprehensive post-operative care. This multidisciplinary approach ensures a holistic management strategy that optimizes patient outcomes and addresses the complexities inherent in such cases.

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Abstract No.: 200296

Poster No.: -P102 Panel No.: P102

Orbital Apex Syndrome Secondary to Langerhans Cell Histiocytosis

First Author: Catherina Josephine GOENADI
Co-Author(s): Clement TAN, Bingcheng WU

Title of the case:

The Pink Surprise at the Apex

History & Examination summary prior to diagnosis:

A 33 year-old Malay male presented with 2 days history of oblique binocular diplopia associated with left retro-orbital discomfort and left-sided headache. He had history of intermittent left-sided throbbing headache for many years, which was not formally assessed by a physician before, typically brought about by poor sleep and alleviated with rest. He had no nausea or vomiting or other neurological symptoms. He was otherwise healthy with no known medical problems. He was a teetotaler who smoked occasionally. Of note, his father was diagnosed with brain cancer, although he was unsure of the histology. On examination, he was noted to have significant left abduction and mild left infra-duction deficits. Orthoptic examination showed esotropia of 12Δ and L hypertropia of 6Δ. There was no anisocoria or relative afferent pupillary defect. Optic nerve function of both eyes was normal with no disc swelling seen. The rest of ocular and neurological examinations were unremarkable. He was admitted for further work up with neuro-imaging and lumbar puncture and on third day of admission, he started developing left relative afferent pupillary defect and visual field defects of static perimetry although subjectively patient did not notice any worsening of his vision.

Final diagnosis:

Langerhans Cells Histiocytosis involving left anterior cavernous sinus, superior orbital fissure and orbital apex.

Case summary & Discussion:

In summary, our patient was a young gentleman with no known past medical history who presented with binocular oblique diplopia and soon after developed signs of optic neuropathy. The constellation of signs localised to the left orbital apex region with involvement of left cranial nerve II, III and VI.

Patient underwent MRI of the brain and orbits which showed bulky enhancement of the left anterior cavernous sinus, superior orbital fissure and orbital apex. There was also suggestion of adjacent bony involvement, with mild dural thickening and a small polypoidal tissue protruding into the right sphenoid sinus lumen. The sinuses were otherwise clear.

Patient was referred to the ENT department for trans-nasal endoscopic biopsy of left anterior cavernous sinus lesion. Intraoperatively, reddish grey tumour was seen invading through posterior wall of right sphenoid sinus.

While waiting for the histology result to come out, patient had worsening left retro-orbital pain and deterioration in his left eye vision and visual field defect. Decision was made to start patient on oral dexamethasone 4mg twice a day. Resolution of pain and improving vision were observed quickly the next day.

Histology of the lesion eventually came back as Langerhans Cell Histiocytosis. Lumbar puncture was also performed for the patient and CSF analysis and cytology were otherwise unremarkable. CT thorax, abdomen and pelvis was also performed, and no suspicious lesions were seen.

Patient was subsequently referred to the Haemato-Oncology department. Option of radiotherapy to the cavernous sinus region was offered as disease was localised with no evidence of other organ involvement. However, by this point, patient no longer had pain or diplopia and he declined radiotherapy. Decision was then made to continue the oral dexamethasone with slow taper over the next 2 months. PET-CT was performed 2 weeks post-cessation of steroid, and it showed mild FDG-avid focus seen in the left orbital apex with no FDG uptake seen within the cavernous sinus region.

Patient was well until for 3 months post cessation of steroid when he started experiencing recurrence of similar left retro-orbital pain. Repeat MRI of the orbits showed reduced bulk of previously biopsied left orbital apex lesion and no obvious residual lesion seen in the left cavernous sinus.

Patient eventually agreed to undergo radiotherapy treatment in view of the residual lesion seen on neuroimaging. He subsequently completed Intensity-Modulated Radiation Therapy (IMRT) 30Gy in 15 fractions to the left cavernous sinus/orbital apex region. Patient did well post RT with no recurrence of pain or diplopia. His visual function was also stable with no RAPD and full colour vision.

Case dilemma:

Management dilemma :Langerhans Cell Histiocytosis involving the central nervous system is uncommon with no standard guidelines for treatments. The initial biopsy of the lesion probably helped to reduce bulk of lesion. Coupled with oral steroid given post biopsy, patient felt that he had improved significantly and refused radiotherapy. However, symptoms recurred 3 months after stopping steroid and eventually he underwent radiotherapy. Should we have proceeded with radiotherapy from the beginning?

Teaching points:

1.High-resolution MRI is the preferred modality for evaluating most lesions involving the orbital apex and cavernous sinus.

2.Although laboratory studies may be useful adjuncts in the diagnostic evaluation of lesions involving the orbital apex, surgical biopsy is often required for definitive diagnosis.

3.Treatment of LCH with neurologic involvement depends on the extent and severity of the disease. Solitary lesions of the calvarium or dura can be treated with surgical resection or low-dose radiotherapy and these interventions can frequently be curative. Multifocal disease or LCH involving the brain parenchyma is treated systemically with a variety of conventional (chemotherapeutic and/or immunosuppressive) agents.

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Abstract No.: 200298

Poster No.: -P103 Panel No.: P103

Type 3 Nasopharyngeal Carcinoma Presenting as an Orbital Apex Syndrome in a 40 Year-old Male

First Author: Jose Martin L. VELASCO IV

Co-Author(s): Karen B. REYES. Angeli D. MEDINA, Alan T. KORA

Title of the case:

Eye'm Feeling Nosy

History & Examination summary prior to diagnosis:

The patient presented with a 2 year history of progressive blurring of vision of the right eye, with eventual protrusion of the right eye, and tearing which prompted consult to an ophthalmologist. Patient was advised to undergo an orbital MRI with contrast wherein there was note of a homogenously enhancing mass along the orbital apex that measures 3.1 x 1.9 x4.4 cm arising from the cranial meninges. The primary impression was suggestive of an orbital meningioma. Patient then underwent biopsy wherein the primary consideration was a poorly differentiated malignant neoplasm specifically a neuroblastoma or a mucoepidermoid carcinoma. Soon after, the patient sought second opinion at another institution. At this time the patient had a best corrected visual acuity of 20/150 on the right eye and 20/20 on the left eye with 1/15 by Ishihara color plate testing on the right and 15/15 on the left. There was associated proptosis of the right eye along with slight restriction in extraocular motility. On fundus examination, there was noted of optic disc edema on the right with an unremarkable optic nerve of the left. Patient then underwent an incision biopsy with frozen section, with immunohistochemistry, as well as a review of slides from the initial biopsy was done which revealed a positive cytokeratin, P40, and negative synaptophysin, CD45, S-100, and CD68 were found which were not consistent with neuroblastoma and lymphoma. The case was diagnosed as a poorly differentiated malignancy favoring a non-keratinizing carcinoma (NPCA). The patient was subsequently referred to ENT, radiation oncology and oncology service for further management.

Final diagnosis:

Nasopharyngeal Carcinoma (poorly differentiated non-keratinizing squamous cell carcinoma)

Case summary & Discussion:

This is a case of a 40-year-old male presenting with unilateral proptosis, and unilateral blurring of vision with a best corrected visual acuity (BCVA) of 20/150 with poor color vision at 1/15 by Ishihara color plate testing. On initial MRI, they noted a lobulated homogenously enhancing mass along the orbital apex that measures 3.1 x 1.9 x4.4 cm arising from the cranial meninges. Due to the inconclusive nature of the initial biopsy, the patient then underwent a re-biopsy with frozen section as well as a review of initial slides. On immunohistochemistry staining, a positive cytokeratin, P40, and negative synaptophysin, CD45, S-100, and CD68 were found which were not consistent with neuroblastoma and lymphoma. The case was diagnosed as a poorly differentiated malignancy favoring a non-keratinizing carcinoma (NPCA). The most common primary malignancy affecting the orbit is orbital lymphoma at 20.8% while 20% of malignancies of the orbit is due to distant metastases originate from the breast, prostate or

lungs (Lim and Tham, 2023). Specifically, orbital apex squamous cell carcinomas (SCC) tend to arise from direct invasion from neighboring structures such as the paranasal sinuses, nasopharynx, and facial region (Lim and Tham, 2023). Magnetic resonance imaging (MRI) is a valuable tool for detecting NPCA with noted enhancement on fat-saturated T1 weighted imaging (Khoroushi, et al., 2024). NPCA presenting as orbital apex syndrome is rare and classified as T4a disease with an incidence of 2.6% and denotes recurrence in 44% of cases (Sandhya et al., 2015, and (Lim and Tham, 2023). Furthermore, primary orbital apex SCC is a rare condition with less than 5 cases reported in literature (Lim and Tham, 2023).In conclusion, in patients with NPCA, ophthalmologic symptoms may be the primary presentation and a high index of suspicion along with proper diagnostics is key for timely diagnosis and management.

Case dilemma:

Nasopharyngeal carcinoma (NPCA) presenting as orbital apex syndrome is rare and classified as T4 disease with an incidence of 2.6% and denotes recurrence in 44% of cases (Sandhya et al., 2015). Despite orbital lymphoma being the most common primary malignancy of the orbit, NPCA should still be considered if with associated symptoms such as loss of smell, unilateral proptosis, etc. This presentation is classified as T4 disease, hence early recognition is key for timely management.

Teaching points:

1.Nasopharyngeal carcinoma (NPCA) presenting as orbital apex syndrome is classified as T4a and is seen in 2.6% of cases. Type 2 and 3 (nonkeratinizing carcinoma and undifferentiated carcinoma respectively) are radiosensitive with good prognosis, and type 3 is the most common type at 65%

2.NPCA may have unusual manifestations such as ophthalmologic symptoms being the presenting symptom hence a high index of suspicion of this diagnosis is key.

3.Recognition is key as the 5 year survival rate is at 35% and the mainstay of treatment is radiotherapy + chemotherapy

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Abstract No.: 200299

Poster No.: -P104 Panel No.: P104

Sinonasal Undifferentiated Carcinoma with Orbital Invasion: A Clinicopathologic Case Report

First Author: Justine May R. TORREGOSA

Co-Author(s): Alex S. SUA, Jo Anne HERNANDEZ-TAN

Title of the case:

Origin Unknown

History & Examination summary prior to diagnosis:

A 69 year old female presented with an 8 month history of progressive proptosis of the left eye. Her symptoms eventually include blurring of vision of the left eye, left-sided anosmia, nasal congestion, epistaxis, and pain on the left maxillary area. She had no significant past medical history. On eye examination, there were firm, irregularly shaped, non-mobile mass on the nasal and inferior orbital area that had caused lateral, upward, and outward protrusion of the left eyeball with restriction in range of eye movement. At that time, vision on the left eye was already counting-fingers at 2 feet and 20/25 on the right eye. Left eye also had poor color perception and positive grade 4 relative afferent pupillary defect. On fundus examination, there was noted of optic disc pallor on the left with an unremarkable optic nerve of the right. Examination of the nasal cavity revealed an irregular pinkish mass with overlying mucoid discharge. There were supraclavicular and cervical lymphadenopathies present. Patient underwent cranio-facial CT scan with contrast wherein there was note of a homogenously enhancing mass that occupied the entire maxillary sinus and has extended superiorly into the inferior and medial parts of the orbital space and ethmoid sinus. The inferior orbital floor and the orbital plate of the ethmoid sinus have been eroded. Mass has encased the medial rectus muscle has encroached the intraconal and orbital apex area, and caused proptosis of the left eyeball.

Patient then underwent incision biopsy with frozen section via anterior orbitotomy approach. A subciliary incision with modified lateral canthotomy was done to access the palpable orbital mass. Gross and microscopic examination had revealed lobules of s There were adjacent areas of tumor necrosis. Immunohistochemistry revealed nests of tumor cells with strong staining for pancytokeratin and were negative for CD34, S-100, and HMB45. A final diagnosis of sinonasal undifferentiated carcinoma (SNUC) was made.

Final diagnosis:

Sinonasal Undifferentiated Carcinoma (SNUC) with Orbital Invasion

Case summary & Discussion:

This is a case of a 69-year-old female who presented with orbital apex syndrome secondary to a progressively enlarging orbital mass. On cranio-orbital CT scan, it was revealed that mass has also involved the entire maxillary sinus and ethmoid sinus. Surgical plan for the incision biopsy was discussed during a multi-disciplinary tumor (MDT) board meeting consisting of the otolaryngology, radiology, and oncology department. The mass was approached via anterior orbitotomy using a subciliary incision with modified lateral canthotomy. Intra-operative frozen section was also done to determine presence of malignant cells for adequacy of specimen for routine histopathology and further work-up. [1]

Routine histopathologic examination revealed malignant epithelial cells lacking evidence of differentiation. This gave us a wide range of differential diagnosis that include poorly differentiated carcinomas, sarcoma, melanoma and lymphoma.[2] Immunohistochemistry staining is essential for the diagnosis. The positive pancytokeratin result confirms it is from an epithelial origin. Negative staining for CD34, S-100 and HMB45 rule-out hematopoietic, neuroendocrine, and melanocytic tumors respectively. [2] [3]

SNUC is a very rare and aggressive malignancy with an incidence of 0.2 per 100,000 and mortality rate of 80% in 5 years. [5] It is more common in males than in females and median age of presentation is 53 years old. It says to have originated from the schneiderian epithelium from the sinonasal tract. The most common locations were nasal cavity and ethmoid sinus. SNUC is extremely locally destructive causing bony erosions early in the course. However, it is usually diagnosed in the advance stage as the large potential space of the sinuses offers an opportunity for unimpeded initial growth.[6]

Treatment for SNUC is multi-modal and includes chemotherapy, radiotherapy and surgical resection. However, the median survival was only 10 months despite treatment.[5]

Case dilemma:

The first diagnostic dilemma was determining the approach for a sinonasal tumor to ensure good diagnostic yield. Endonasal approach was considered as it had the advantage of improved visualization of medial and posterior orbit, decreased manipulation of orbital content and ideal for concurrent management of sinonasal tumor. [2] However in this case, an anterior orbitotomy proved to be efficient with the use of intra-operative frozen section for adequacy.[1]

The second diagnostic dilemma came with determining the final histopathologic diagnosis for a poorly differentiated carcinoma with an inconclusive clinical presentation. However, immunohistochemistry staining helped guide our diagnosis.[2]

Teaching points:

1.SNUC is often diagnosed in its advanced stage with the tumor already involving several structures. It can initially present with orbital apex symptoms. High index of suspicion, adequate biopsy and additional ancillary testing such as immunohistochemistry are essential in the diagnosis.

2.In the past, SNUC has been a wastebasket diagnosis. However recently, it represents a distinctive clinicopathologic entity, morphologically, phenotypically, and genetically. [6] [7]

3.The tumor characterized by medium to large round or polygonal cells, arranged in nests, lobules, trabecular, and sheets, without any squamous or glandular differentiation. It stains positively with cytokeratin. However, other disease entities such as high grade sinonasal adenocarcinoma, high-grade squamous cell carcinoma, melanoma, among others may show SNUC-like areas. Sufficient sampling is important to avoid such errors. [7]

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Abstract No.: 200300

Poster No.: -P105 Panel No.: P105

Imaging-guided navigation in lateral orbitotomy for a posterior orbital neoplasm

First Author: Ma. Patricia R. RIEGO DE DIOS

Co-Author(s): Jamie Lynne C. NARCISO, Ma. Donna D. SANTIAGO, Hezekiah Mikhail Vicente Q. MALUBAY, Barbara Lauren C. NGO

Title of the case:

Imaging-guided navigation in lateral orbitotomy for a posterior orbital neoplasm

History & Examination summary prior to diagnosis:

This is the case of a 37-year old female presenting with right eye proptosis. She had a 2-year history of painless bulging of the right eye for which she consulted with another ophthalmologist. Magnetic resonance imaging done showed a right intraconal mass. She was then lost to follow-up, until 10 months prior when redness and pain was also noted. At this time, she was advised surgery, but was unable to comply. She followed up again 1 month prior due to further progression of symptoms. Except for a history of cholecystectomy 10 years ago, ancillary history is unremarkable. Physical examination revealed best corrected visual acuity of 20/70 on the right, and 20/20 on the left. Hertel exophthalmometry measurements are 23 on the right and 15 on the left with a base of 110. Intraocular pressures are 15 mmHg on the affected eye and 13 mmHg on the other eye. Fundus examination revealed disc edema on the right.

Final diagnosis:

Orbital cavernous venous malformation, right

Case summary & Discussion:

This is a case of a 37-year old female presenting with a 2-year history of right eye proptosis. Physical examination of the affected eye revealed best corrected visual acuity of 20/30. Hertel exophthalmometry measurements were 23 on the right and 15 on the left with a base of 110. Optic nerve examination showed edema on the right. Initial imaging revealed a right intraconal mass, for which the primary consideration was an orbital cavernous venous malformation. However, there are previously reported cases that although imaging was consistent with an orbital cavernous venous malformation, final biopsy findings revealed a different pathology. One such case was reported by Savignac and Lecler (2017), wherein a mass that was consistent with an orbital cavernous venous malformation on imaging was confirmed to be an optic nerve sheath meningioma on biopsy. Magnetic resonance angiography was also ordered, revealing a right intraconal mass, with the main ophthalmic artery coursing adjacent to the mass and its minor arterial branch drapes around the mass. The complexity of the orbital neoplasm's location, increased the risk of blindness from optic nerve injury or ischemic damage to the optic nerve secondary to bleeding. Image-guided systems were utilized for preoperative planning and intraoperative

identification of surgical landmarks to facilitate excision biopsy without complications. The retro-orbital mass was successfully removed without compromising the described adjacent structures. There was resolution of proptosis with improved best corrected visual acuity of 20/20. Biopsy of the mass revealed an orbital cavernous venous malformation.

Case dilemma:

The dilemma in this case was the delicate nature of the planned procedure to remove the mass. Due to the patient's presentation with compressive optic neuropathy, surgery was warranted, but imaging revealed draping of vascular supply on the mass would make the surgery complex. The solution to this was imaging guidance.

Teaching points:

-This case illustrates the importance of imaging in pre-operative planning, as this will reveal adjacent structures to be avoided during surgery.

-However, although imaging is important, pre-operative diagnosis based on magnetic resonance imaging may not translate to histopathologic diagnosis. Fortunately, for this case, pre-operative and post-operative diagnoses were the same.

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Abstract No.: 200301

Poster No.: -P106 Panel No.: P106

From eye to the end – An 8 months chronology

First Author: Shafit ADRI

Co-Author(s): Shahidatul-Adha MOHAMAD, Wan Hazabbah Wan HITAM, Fatihatul Munirah AMIRUDDIN, Ahmad FATIHAH, Ismail SHATRIAH

Title of the case:

From eye to the end – An 8 months chronology

History & Examination summary prior to diagnosis:

An 18-year old lady with no known medical illness presented with 3 weeks history of progressive right eye swelling. Associated with similar onset of right eye gradual blurring vision, eye redness and right frontal headache. Further history revealed intermittent epistaxis, anosmia and unintentional weight loss.

On general examination: Patient was comfortable, not septic looking, moderate built.

Ocular examination: The right eye had non-axial proptosis with right sided facial fullness around nasal & cheek region. RAPD present over right eye. Right eye examination revealed visual acuity was perception to light. Extraocular movement was restricted -4 on all 4 gazes. Conjunctiva was injected with chemosis. Cornea was thin with infiltrate. Anterior chamber was deep with cells 4+. Intraocular pressure was 27. Fundus revelead hyperaemic optic disc with blurred nasal margin and multiple tourtous and dilated retinal veins. Left eye examination was unremarkable.

On systemic examination:

- Neurological examination revealed Bilateral cranial nerve I and right Cranial nerve II,III,IV,V1 and V2 involvement. Other neurological findings were normal
- Other systemic examination was unremarkable

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Abstract No.: 200302

Poster No.: -P107 Panel No.: P107

"I can't read and count!" – Decoding the Enigma

First Author: Sita AYUNINGTYAS

Co-Author(s): M. SIDIK, Syntia NUSANTI, Salmarezka DEWIPUTRI

Title of the case:

"I can't read and count!" – Decoding the Enigma

History & Examination summary prior to diagnosis:

A 66-year-old man presented with difficulties in reading for a month. He needed others to assist him in reading articles and emails. He could write, but he couldn't type on a computer or smart phone. He couldn't count mathematical multiplications. He had no blurred vision. No significant headaches were reported. There is no history of trauma or other systemic diseases. The visual acuity of both eyes was 6/6, and both eyes had a constricted visual fields. The anterior and posterior segments were unremarkable. Brain MRI with contrast showed multiple solid nodules with heterogenous enhancement and vasogenic edema in the right cerebellum, left occipital, right temporal, bilateral parietal, and left frontal due to intracranial metastasis with a differential diagnosis of toxoplasmosis and intracranial tuberculosis. Laboratory examinations showed negative Toxoplasma IgG and IgM. IGRA was positive. CEA was high (12.0 ng/ml), PSA was normal (4.38 ng/ml), and Cyfra 21-1 was high (3.2 ng/ml). Thoracoabdominal CT with contrast showed a spiculated solid lesion in segment 3 of the left lung, suggesting malignancy. Abdominal organs were unremarkable. PET/CT revealed hypermetabolic nodules with spiculated edges in segment 3 of the left lung, multiple hypermetabolic lymph nodes, and multiple intracranial hypermetabolic nodules. He received anti-tuberculosis drugs for several weeks then stopped. He underwent a craniotomy. Histopathological examination demonstrated thoracic shaped tumour cells with pleomorphic nuclei, hyperchromatic, and mitosis. The tumour stalk consisted of fibrovascular connective tissue. Necrosis and haemorrhage were found. After a one-week follow-up, he had a severe headache and left hemiparesis. Dexamethasone was then used to treat the brain edema. Cycles of radiation, chemotherapy, and immunotherapy were performed. He responded well to the radiation and was able to return to work.

Final diagnosis:

Higher cortical function disorder due to brain metastases of lung adenocarcinoma

Case summary & Discussion:

A 66-year-old man with reading difficulties needed assistance and could not type on a computer or smartphone. He couldn't count mathematical multiplications. The visual acuity was 6/6, and he had no significant headaches. A brain MRI showed multiple solid nodules due to intracranial metastasis,

with a differential diagnosis of toxoplasmosis and intracranial tuberculosis. Laboratory examinations revealed negative Toxoplasma IgG and IgM, positive IGRA, high CEA, normal PSA, and high Cyfra 21-1. Thoracoabdominal CT showed a spiculated solid lesion in the left lung suggesting malignancy. He received anti-tuberculosis drugs and underwent a craniotomy. Histopathological examination revealed adenocarcinoma. After a one-week follow-up, he had a severe headache and left hemiparesis. Dexamethasone was used to treat the brain edema. He responded well to radiation and is still receiving chemotherapy and immunotherapy. Brain metastases are the most prevalent intracranial tumor in adults, and their prevalence is on the rise, primarily due to lung cancer. In approximately 20% of patients at the time of diagnosis, lung cancer, the most prevalent cancer to develop brain metastases, exhibits intracranial involvement. Anatomical localization of surface dyslexia ranges from the left temporal gyri, the left temporo-parietal, and parieto-occipital areas, to the left anterior temporal region.

Case dilemma:

A patient with undiagnosed primary lung cancer presents with an unusual presentation of brain metastases as a higher cortical function disorder.

Teaching points:

-In the present era of significantly improved systemic therapy for many common cancers, the overall prognosis of cancer patients is largely dependent on the presence or absence of brain metastasis. Consequently, a timely and accurate diagnosis is crucial for improving long-term outcomes.

-Metastases to the brain are most frequently observed in primary cancers of the lung, breast, and melanoma. This should be examined in patients who have brain metastases with primary tumors that are unknown.

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Abstract No.: 200303

Poster No.: -P108 Panel No.: P108

Listening to Silence, Seeing Darkness

First Author: Shahidatul-Adha MOHAMAD

Co-Author(s): Wan-Hazabbah Wan HITAM, Izaini Ghani ABDUL-RAHMAN, Nur Asma SAPIAI, Noorul-Balqis Che IBRAHIM

Title of the case:

Listening to Silence, Seeing Darkness

History & Examination summary prior to diagnosis:

A 52-year-old lady presented with a two-year history of painless bilateral vision blurring, progressing to complete right eye blindness over one year and recent worsening vision in the left eye over two weeks. Initial symptoms included gradual painless protrusion of the right eye four years ago, without associated visual disturbances. A large tumor was incidentally found on a CT-scan scan, but follow-up was interrupted by the pandemic, during which she remained asymptomatic. She later developed right-sided earache and progressive hearing loss over three years, accompanied by anosmia and intermittent frontal headaches. There were no emotional, behavioral, cognitive, or motor deficits suggestive of frontal lobe syndrome. Clinical examination revealed non-axial proptosis, positive RAPD, and ophthalmoplegia in the right eye. Visual acuity was nil to light perception in the right eye and 6/18 in the left eye. Fundus examination showed optic disc pallor in the right eye. Examination of the left eye was unremarkable. Pure tone audiometry revealed a significant conductive hearing loss in the right ear. Imaging revealed multifocal lesions with dural tail signs, CSF cleft signs, and cortical buckling across bifrontal, biparietal, and bitemporal lobes. The largest lesion side at left frontal lobe (5.1 x 4.1 x 4.3cm) is causing midline shift and compression to the adjacent lateral ventricle. There were multiple lesions seen at the olfactory groove, suprasellar and sellar region, and right sphenoid wing extending to right orbital apex with left subfalcine and left uncal herniation. Abnormal signal seen at parietal and left frontal bone adjacent to the lesion likely involvement. Patient underwent bicoronal incision and bifrontal craniotomy and excision of tumour (simpson 2) with fascioduraplasty and frontal sinus cranialization. Patient condition is stable post-operatively.

Final diagnosis:

Right Compressive Optic Neuropathy secondary to Atypical Meningiomatosis

Case summary & Discussion:

This case involves a middle-aged woman presenting with painless unilateral protrusion and total blindness of the right eye, along with intermittent headaches, anosmia, and right-sided hearing loss. Clinical examination revealed non-axial proptosis, positive relative afferent pupillary defect (RAPD), restricted extraocular movements, and optic atrophy in the affected eye. Imaging studies demonstrated multifocal lesions involving the bifrontal, biparietal, and bitemporal lobes with dural tail signs, consistent with meningioma. Comparison with a previous CT scan from 2020 showed significant progression of the largest lesion in the left frontal lobe, causing substantial mass effect and midline shift. Surgical management included bicoronal incision, bifrontal craniotomy, and Simpson grade II tumor resection. Patient is well postoperatively.This case underscores the importance of comprehensive neurological

assessment and imaging in diagnosing and managing multifocal brain tumors, which can present with diverse clinical features necessitating multidisciplinary surgical intervention for optimal outcomes. Meningiomas, more common in women1 presents with extra-axial mass with dural tail and uniformly contrast enhancing1. Although majority are slow-growing and benign, atypical and anaplastic meningiomas behave aggressively with a tendency for recurrence2. Extensive peritumoral edema is frequently associated with brain invasion1,2 while bony involvement may result in local mass effect and proptosis2. Presence of severe adjacent edema is considered more compatible with aggressive atypical meningiomas3. The term “atypical meningioma” have been retained as histological subtypes with grade 23. The Simpson grading system for meningioma resection, correlates the extent of surgical resection with symptomatic recurrence rates4. Grade II involves complete removal and coagulation of the dural attachment, with a reported 19% symptomatic recurrence at 10 years4. However, recent studies have found no significant difference in recurrence rates between Simpson grades I to III, indicating variability even within grade IV resections4.

Case dilemma:

The pandemic has hindered patient follow-up, complicating timely treatment. Despite a large frontal tumor causing midline shift, the patient’s condition remains stable, leading to defaulting on follow-up and resulting in permanent blindness. The absence of typical frontal lobe symptoms and Foster-Kennedy syndrome contribute to late presentation and oversight. The right-sided hearing loss could be due to indirect effects of the tumor or middle ear effusion, potentially unrelated to the meningiomas.

Teaching points:

- Atypical Presentations of Brain Tumors: Large frontal tumors can manifest without typical frontal lobe symptoms or Foster-Kennedy syndrome, potentially leading to delayed diagnosis and treatment.

-Impact of Tumor Location on Sensory Functions: Understanding how tumors can indirectly affect sensory functions, such as causing conductive hearing loss via middle ear effusion, underscores the importance of comprehensive evaluation in neuro-oncology.

-Lesson Learned from Pandemic Challenges in Neurological Care: Adaptable healthcare strategies are crucial to ensuring timely management of neurological conditions despite disruptions to follow-up care during the pandemic.

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e-poster Abstract No.: 200029

Clinical profile and perioperative risk factors for post cataract surgery non-arteritic anterior ischemic optic neuropathy (psNAION) in an Indian population : an emulated target trial

First Author: Madhumita GOPAL

Co-Author(s): Rohan ARORA, Nirmala DEVY

Purpose:

To describe the clinical profile of Indian patients with psNAION and to assess the predictive value of perioperative biometric and biochemical risk factors to evaluate if modifiable risk factor control could potentially be beneficial.

Methods:

Retrospective evaluation of patients who developed psNAION within 6 months and clinical characteristics noted. An emulated target trial to evaluate the role of axial length, perioperative blood pressure and blood sugar, and postoperative intraocular pressure was conducted with controls matched for age, sex, systemic and ocular comorbidities with known risk of NAION, grade of cataract, type of surgery, type of anesthesia and intraoperative complications.

Results:

19 patients aged 66.6 ± 7.7 years developed psNAION 80.8 ± 50.6 days after cataract surgery. 5 (21.1%) patients had no known systemic risk factors for NAION. 3 patients presented <7 days and 16 presented >6 weeks from surgery. None of the evaluated variables correlated significantly with increased risk of psNAION.

Conclusions:

Axial length of eyeball, preoperative blood pressure, preoperative random blood sugar levels and postoperative intraocular pressure are not predictive for increased risk of psNAION. The incidence of psNAION is low, regardless of the technique of cataract surgery, thus mention of the same in routine consent forms is probably not warranted. Future prospective, randomized studies are needed for more robust evaluation of risk factors, pathophysiology and management strategies.

e-poster Abstract No.: 200038

One-year outcome of optic neuritis in young and middle=aged adults at a tertiary center in northeast Malaysia

First Author: Muhammad Adri MOHAMED SHAFIT
Co-Author(s): Shatriah ISMAIL, Shahidatul Adha MOHAMAD, Wan Hazabbah WAN HITAM

Purpose:

To report the clinical profile and one-year outcome of optic neuritis (ON) in patients aged 18 to 45 at a tertiary center in Northeast Malaysia.

Methods:

This retrospective cohort study included patients diagnosed with ON between 2015 and 2023. The clinical, laboratory and imaging data, and visual outcome after one year of treatment were analyzed. Patients with atypical ON were excluded.

Results:

A total of 22 patients (15 females, 7 males) with a mean age of 30.7 ± 6.72 years were included. Seventeen cases were unilateral, and five were bilateral, resulting in a total of 27 affected eyes. Of these, 55.6% had retrobulbar ON and 31.8% had papillitis ON. MRI abnormalities were more common in retrobulbar ON (53.3%). Most cases (81.5%) were idiopathic, while 18.5% were associated with Neuromyelitis Optica Spectrum Disorder (NMOSD). Retroorbital pain was reported in 59.1% of cases. All patients experienced visual field (VF) disturbances and reduced vision. Presenting visual acuity (VA) ranged from 6/9 to no light perception (NPL), with 55.5% having a VA of 6/60 or worse, and 48.1% exhibiting central scotoma. At follow-up (average 1.3 years), 81.5% achieved VA of 6/12 or better, with 63.6% regaining VA of 6/6. Normal VF recovery was observed in 77.8%. Recurrence occurred in 22.2%, predominantly in patients with NMOSD (80.0%).

Conclusions:

ON in young and middle-aged adults at our center is often idiopathic with generally good visual outcomes, but recurrence is frequent in NMOSD cases, highlighting the need for vigilant follow-up and tailored management.

e-poster Abstract No.: 200042

Neuro-Ophthalmologic Findings of Suprasellar Lesions in a Tertiary Philippine Hospital

First Author: Franz Marie CRUZ
Co-Author(s): Kevin John SY

Purpose:

To describe the presenting neuro-ophthalmologic signs and symptoms of suprasellar lesions among patients consulting at a single institution in the Philippines.

Methods:

This was a retrospective, cohort study. Medical records of patients with suprasellar lesions seen in the Neuro-ophthalmology clinic of the of a tertiary Philippine hospital from January 2014 to December 2019 were reviewed. Clinical profile, neuro-ophthalmologic presentation, diagnosis, management, and visual outcomes were summarized by descriptive statistics.

Results:

One-hundred thirty-three (133) patient records satisfied the study criteria. Most common presenting symptoms were blurring of vision. headache, and loss of vision. Visual acuity at initial visit ranged from 20/20 to no light perception. A relative afferent pupillary defect was present in half of the study population. Almost half presented with normal-looking discs or disc pallor. Bitemporal hemianopia is the most common visual field defect pattern seen in both confrontation and automated visual field testing. Histopathology was significantly associated with visual outcome.

Conclusions:

Suprasellar lesion should be suspected in patients who complain of unilateral blurring of vision, and those who present with normal or pale optic discs. Pituitary adenoma is the most common radiologic and histopathologic diagnosis. Visual outcome after intervention has improved or remained stable in two-thirds of patients; visual recovery is multi-factorial, which is influenced by duration, surgery, and histopathology.

e-poster Abstract No.: 200257

Visual prognosis of aquaporin-4 antibody positive optic neuritis: single-center case series study from a tertiary Eye Center in East-China

First Author: Chuan-bin SUN

Purpose:

To report the visual outcomes of aquaporin-4 antibody (AQP-4 Ab) positive optic neuritis (ON) followed up for at least 6 months

Methods:

In this retrospective case series study, 93 cases (130 eyes) with AQP-4 Ab positive ON were included, best corrected visual acuity (BCVA) at baseline and final follow-up was collected and analyzed. All 93 cases were treated with 6 to 9 days of intravenous injection of methylprednisolone, followed by oral steroid tapering slowly, then maintained by low-dosed oral steroid only, or by azathioprine, or mycophenolate mofetil. All cases were followed up for at least 6 months.

Results:

Of 93 cases with AQP-4 Ab positive ON, 76 cases (81.7%) were female. Mean age was 51.8±15.5 (ranged from 7 to 81). The median of BCVA at baseline and final follow-up was counting fingers (ranged from no light perception to 20/25), and 20/167 (ranged from no light perception to 20/20). At the final follow-up, BCVA ≤counting fingers was found in 33.3% eyes, < 20/200 in 47.4% eyes, < 20/200 in 47.4% eyes, < 20/200 in 65.9% eyes.

Conclusions:

Visual prognosis of is poor in cases with AQP-4 Ab positive ON.

e-poster Abstract No.: 200268

A hospital-based nationwide study on epidemiologic and clinical characteristics of optic neuritis in China

First Author: Mengying LAI

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Purpose:

Different glial-autoantibodies-related optic neuritis (ON) are associated with different clinical characteristics and prognosis that require different treatments. This's to study the epidemiologic and clinical characteristics of different glial-autoantibodies-related ON in China.

Methods:

791 ON cases from 33 centers in mainland China were divided into four subgroups: aquaporin-4 antibody-seropositive ON (AQP4-ON), myelin oligodendrocyte glycoprotein antibody-seropositive ON (MOG-ON), double-seronegative ON and antibody-uncertain ON. Demographic parameters, clinical presentations and MRI demonstrations were assessed and compared among different subgroups.

Results:

During the follow-up time around 49 months, about 60% patients experienced reoccurrence, 40.5% patients had severe visual impairment in at least one eye, and 11.4% patients had severe visual impairment in both eyes. AQP4-ON subgroup had the highest female to male ratio (7.7:1) and MOG- ON subgroup was 1.7:1. In the MOG-ON subgroup, first-attack age was younger than the other subgroups. There were 40.7% patients experienced bilateral involvement during the first attack. MOG-ON patients had a relative high relapse rate which was 66.9% during the follow-up time, while they had a better visual acuity outcome. AQP4-ON patients had the oldest first-attack age. About 68.7% AQP4-ON patients experienced disease relapse during the follow-up time. Most AQP4-ON patients experienced severe visual loss.

Conclusions:

According to the findings of this cohort study, using multiple parameters increases the sensitivity and specificity of diagnosing different types of ON. These can assist clinicians in diagnosing and treating ON when glial autoantibody status is not available.

e-poster Abstract No.: 200269

Neuromyelitis Optica IgG Causes Primary Retinal Damage via Interactions between Müller Cells and Microglia

First Author: Biyue CHEN
Co-Author(s): Tingjun CHEN, Shu Hui WEI, Huanfen ZHOU

Purpose:

To explore the mechanism of Neuromyelitis Optic (NMO) IgG inducing primary retinal lesions through the interaction between Müller cells and microglia.

Methods:

Patient serum-purified NMO-IgG was delivered to C57/BL6 mice by intravitreous injection. The structural and functional abnormalities of the retina were detected by optical coherence tomography (OCT), electroretinography (ERG), real-time fluorescence quantitative PCR (RT-qPCR), and immunofluorescence. The remission of retinopathy was assessed following microglial depletion using PLX3397. Transwell co-culture of MIO-M1 and BV2 was constructed to reveal the interaction between Müller cells and microglia.

Results:

In vivo, the deposition of NMO-IgG in the retina and reduction of AQP4 expression in Müller cells were observed after purified NMO-IgG intravitreous injection. Evans Blue staining showed different degrees of vascular leakage. Loss of retinal ganglion cells (RGCs) with thinning of the retinal nerve fiber layer indicated the dysfunction of the retina, which is consistent with ERG results. The expression of C3 in Müller cells and C1q in microglia was upregulated on day 7, meanwhile the number of iNOS(+)IBA-1(+) cells increased and microglial morphology changed induced by NMO-IgG indicating the significant activation of microglia. RBPMS(+) labeled RGCs were restored after ablation of microglia by using PLX3397 in chow. In vitro, the secretion of C3 in NMO-IgG-treated MIO-M1 cells increased which processed the activation and migration of BV2 compared to control.

Conclusions:

NMO-IgG can induce primary dysfunction of the retina in NMO by stimulating Müller cells and leading to excess C3 secretion, which then activates microglia. Müller cell-microglia crosstalk in NMO-IgG-induced retinopathy could be a promising therapy target.

e-poster Abstract No.: 200199

Clinical analysis of 8 cases anti-aquaporin 4 antibody-positive optical neuritis

First Author: Li XU
Co-Author(s): Xinyue ZHANG

Purpose:

To analyze the clinical features and prognosis of patients diagnosed with anti-aquaporin 4 (AQP4) antibody-positive optic neuritis(OP).

Methods:

The clinical records of 8 cases (12 eyes) who diagnosed with AQP4 antibody-positive OP were retrospectively collected and analyzed from department of ophthalmology, Shenyang the Forth People's hospital from Jan,2019 to March,2020.

Results:

The results showed among them, 2 patients had a history of optic neuritis.4 patients had binocular onset successively, with the longest interval of 30 days and the shortest interval of 5 days.7 patients presented with pain of eye movement accompanied by headaches. All(12 eyes) had vertical or horizontal hemianopsia. seven eyes of 8 patients presented with relative afferent pupillary defect;5 eyes presented with edema of optic disc. Serological examination of 7 cases were positive for autoimmune antibodies, and the other case was weakly positive for tuberculosis antibodies. Brain MRI in 3 cases showed multiple lacunar infarction; the best corrected visual acuity(BCVA) of 7 eyes were lower than 0.1 before treatment.4 cases were treated with methylprednisolone(1 g),and the other 4 patients were treated with intravenous injection of gamma globulin combined with retroocular injection of triamcinolone acetonide in view of their older age. After an average follow-up of 6 months, 1 patient developed central nervous symptoms after 1 month of treatment, and optical neuromyelitis was confirmed by spinal imaging examination. After hormone shock therapy, the BCVA of only 1 eye of a patient increased.

Conclusions:

Patients with AQP4 antibody positive OP have severe visual impairment, and early diagnosis and active treatment may preserve some useful visual function.

e-poster Abstract No.: 200078

Effectiveness of Prism Treatment in Activities of Daily Living Restoration in Stroke Survivors with Hemianopia: A Systematic Review

First Author: Ming Chi CHOY

Co-Author(s): Hoi Shan Suzanne LO, Calvin Cp PANG, Clement Cy THAM, Kelvin Kl CHONG

Purpose:

VF (Visual Field) loss is reported to occur in up to 67 % of stroke patients. The most common type of visual field loss is that of HHA (Homonymous Hemianopia). VF defect could severely impair basic ADL (Activities of Daily Living), including mobility and personal self-care tasks and further hinder the performance of (IADL) Instrumental Activities of Daily Living. Prism therapy is a substitution treatment commonly used in Hong Kong provided by an orthoptist by referral by an ophthalmologist. Prisms shift the image received into an area that can be perceived.

Methods:

The information sources include PubMed, MEDLINE, The Cochrane Library – CENTRAL, Web of Science and EMBASE. The eligible criteria are studies investigating the effectiveness of prism treatment on stroke survivors, with HHA with a prism as compared to conventional therapies. The study designs would be reports of published or unpublished literature, limited to English, after 1994.

Results:

7 eligible articles were identified. 4 (n=77) out of 7 (n=264) eligible articles have shown significant improvement in ADL after the Prism treatment. All articles that show very good or strong evidence ($p<0.05$) measure ADL by the primary outcome of obstacle avoidance (n=2). Article report IADL, as measured by the outcome of regaining the ability to drive, showed significant outcomes as reported by the patient. Articles that measured Barthel index score (n=2) showed insignificant ADL improvement.

Conclusions:

While the effectiveness of Prism Treatment in ADL for Stroke Survivors is controversial, the limited articles that support its efficacy highlight the need for further research.

e-poster Abstract No.: 200078

Title:Peripapillary hyper-reflective ovoid mass-like structures: pathogenesis, multirater validation and longitudinal follow-up

First Author: Tingting LIU

Purpose:

Peripapillary hyperreflective ovoid mass-like structures (PHOMS) were originally misidentified as “buried ODD”. Until recent years, with the development of enhanced depth imaging-optical coherence tomography (EDI-OCT), PHOMS have been recognized as a common optic disc OCT biomarker that distinguishes it from ODD.

Methods:

Axonal plasmic stasis may be one underlying pathophysiological mechanism of PHOMS. The utility of PHOMS has already been investigated in a variety of neurological disorders, including nonarteritic-anterior ischemic optic neuropathy (NA-AION), multiple sclerosis (MS) and idiopathic intracranial hypertension (IIH), but the important concomitant signs are still unclear.

Results:

PHOMS have been observed in other several ophthalmic diseases, including Leber’s Hereditary Optic Neuropathy (LHON) and retinal vascular occlusions (RVO). The prevalence of PHOMS, in the existing studies, is as high as 98.4% in IIH and 93% in ODD.

Conclusions:

We investigate the epidemiological characteristics of PHOMS, as well as their associations with a variety of conditions. In addition, we highlight several unresolved challenges, such as whether there is a correlation between PHOMS and the reduction of peripapillary capillary vessels density (VD) in these diseases, the unclear anatomy of PHOMS, and whether its longitudinal observation causes vision loss, which are also the direction we propose for future exploration.

e-poster Abstract No.: 200056

Ethmoid Mucocele Mimicking Retrobulbar Optic Neuritis: A Case Report

First Author: Yuen Sum Kylie WONG

Co-Author(s): Noel Ching Yan CHAN, Chun Yue Andrew MAK

Purpose:

To report a case of compressive optic neuropathy secondary to ethmoid mucocele.

Methods:

A retrospective case report.

Results:

A 35-year-old woman with good past health presented with a 3-week history of right eye (RE) progressive visual blurring associated with mild pain on eye movement. Examination showed right relative afferent pupillary reflex (RAPD) with diminished visual acuity using pinhole (phVA) being 6/200 as well as impaired color vision (Ishihara test plate only, and D15 test was normal but slow). The right optic disc was pink with clear margin. Left eye was grossly normal for all examinations, with phVA 20/80. An urgent computerised tomography brain and orbit revealed a homogeneous hypodense expansile lesion at the right posterior ethmoidal sinus with compression to the right orbital apex. Functional endoscopic sinus surgery with drainage of the right ethmoid mucocele was performed, followed by rapid improvement RE vision to phVA of 20/40, full Ishihara test and negative RE RAPD on postoperative day 2. Magnetic resonance imaging at postoperative 6 weeks showed complete drainage of the right ethmoid mucocele with reduced mass effect on the right optic nerve. At postoperative 2 weeks, RE phVA returned to baseline of 20/30 while her RE visual function remained stable at postoperative 21 months.

Conclusions:

Although most compressive optic neuropathy follows a chronic clinical course, a small subset of compressive optic neuropathies may present acutely. Our case report emphasised the importance of early neuro-imaging studies to differentiate between compressive optic neuropathy and atypical retrobulbar optic neuritis before initiation of high-dose steroid therapy.

e-poster Abstract No.: 200075

Positive Impact: A case of visual improvement following dopamine agonist therapy in pituitary macrodenoma

First Author: Dyah WIDYATI
Co-Author(s): Lukisiari AGUSTINI, Tedy APRIAWAN, Deasy ARDIANY

Purpose:

We present a case of pituitary macroadenoma in a young female that showed visual improvements after one month of bromocriptine therapy. The patient came with visual disturbances as its primary complaint. Pituitary adenoma, which accounted for up to 15% of all intracranial mass, can be classified as microadenomas or macroadenomas based on their size. Macroadenomas can cause “mass effect” by compressing nearby structures, including the optic chiasm, which can lead to visual disturbances.

Methods:

A 23-year-old female presented with progressing decreased vision on both eyes since 3 years ago, accompanied by constriction of visual field and recurring headaches. Prolactin level is moderately elevated at 77.13 ng/mL. MRI scan found that there is a pituitary macroadenoma. Internal medicine department treated the patient with bromocriptine 2.5mg once daily, and neurosurgery department planned the patient for tumor resection.

Results:

Improvement in visual acuity, color vision, and visual field is noted after one month of bromocriptine usage along with a decrease in prolactin level to 3.95 ng/mL. Treatment of choice in pituitary macroadenoma with progressive visual loss is tumor resection surgery. However, medical therapy can be considered pre-operatively. Dopamine D2 receptor (D2R) is expressed in multiple types of pituitary adenoma, and it is postulated that dopamine agonist have clinical benefits in patients with pituitary adenoma even in other subtypes than prolactinoma.

Conclusions:

This case highlights visual improvements in pituitary macroadenoma following a dopamine agonist treatment. Comprehensive treatment approach is essential for effectively managing pituitary macroadenoma, allowing improvement in visual function and quality of life.

e-poster Abstract No.: 200080

Alexia and Acalculia – Decoding the Enigma

First Author: Sita AYUNINGTYAS
Co-Author(s): Salmarezka DEWIPUTRI, Sidik MOHAMAD, Syntia NUSANTI

Purpose:

We aim to illustrate and emphasize alexia and acalculia as signs of brain metastasis from distant primary tumors, which could potentially be life-threatening.

Methods:

A 66-year-old man presented with reading difficulties for a month. He couldn't understand what he read, therefore he needed others to help him read. He could write, but couldn't type on a computer or smartphone. He couldn't count mathematical multiplications. No significant headaches were reported. The visual acuity of both eyes/BE was 6/6. He had incongruous right homonymous hemianopia. BE's funduscopy was unremarkable, Brain MRI contrast showed multiple solid nodules with heterogenous enhancement and vasogenic edema in the right cerebellum, left occipital, splenium, right temporal, bilateral parietal, and left frontal due to intracranial metastasis with differential diagnosis of tuberculosis. CEA and Cyfra 21-1 were high. Thoracoabdominal CT contrast showed a spiculated solid lesion in segment 3 of the left lung, suggesting malignancy. The left lung, multiple lymph nodes, and multiple intracranial hypermetabolic nodules were revealed by PET/CT.

Results:

He underwent a craniotomy for occipital tumor resection. Histopathological and immunohistochemistry examination demonstrated metastatic lung adenocarcinoma. He responded well after cycles of head radiation, chemotherapy, and immunotherapy. Acalculia was completely resolved, but alexia is partially improved. He was able to return to work.

Conclusions:

Higher cortical function disorder could be a sign of brain metastasis. Brain metastasis is most frequently observed in lung primary cancer. Consequently, a timely and accurate diagnosis is crucial for improving long-term outcomes.

e-poster Abstract No.: 200094

Isolated sixth nerve palsies post-radiation for nasopharyngeal carcinoma

First Author: Melissa TIEN

Purpose:

To describe two patients, each presenting with an isolated sixth cranial nerve palsy secondary to radiation for nasopharyngeal carcinoma (NPC). Both developed other radiation-related ocular complications.

Methods:

Case description

Results:

Two patients had received radiation for NPC, ranging from 10-30 years prior to presentation. Both presented with unilateral isolated sixth nerve palsies, without a previous history of any cranial nerve palsy. Both did not have significant ischaemic risk factors. Neuroimaging showed radiation-induced changes at the central skull base. Neither had recurrence of NPC. One patient also developed radiation retinopathy with cystoid macular oedema, whilst the other developed radiation-induced limbal stem cell deficiency and eventual necrosis of the cavernous sinus on the same side, with cavernous sinus bleed.

Conclusions:

Whilst radiation-induced cranial neuropathies are commonly reported, these tend to be multiple in nature. It is notable that both these patients presented with isolated sixth nerve palsies. Recurrence of NPC, a foremost thought in the setting of possible perineural or localized spread of NPC, was excluded. The sixth nerve palsy presented first before other radiation-related ocular manifestations. Reasons for this remain to be elucidated but vulnerability to ischaemia and anatomical bias are possible mechanisms.

e-poster Abstract No.: 200100

Eight and a half Syndrome in Subacute Pons Infarction: A Rare Case Report

First Author: Jihan NADIA

Co-Author(s): Yunita MANSYUR, Batari TODJA UMAR

Purpose:

To report a case of eight-and-a-half syndrome, characterized by one-and-a-half syndrome with ipsilateral facial nerve palsy, caused by extensive lesions in a subacute pons infarction.

Methods:

A twenty-two-year-old female with horizontal binocular diplopia and difficulty moving both of her eyes to left side. The patient also complained of facial numbness on the left side with history of left-sided facial weakness which has been resolved. Ophthalmology examination conducted and showed normal results for anterior and posterior segments. We ordered brain magnetic resonance imaging and revealed a subacute infarction in the left posterior pons. This patient was consulted to Neurology Department and after 2 months follow up, eye movement were resolved.

Results:

The combined lesions of one and a half syndrome and ipsilateral facial nerve palsy are collectively referred to Eight and a half syndrome. The majority of cases are secondary to an infraction at the pontine tegmentum level. In this case, the diagnosis was confirmed by the MRI result. A multidiscipline management approach was conducted and the patient had complete resolution within 2 months.

Conclusions:

Eight and a half syndrome is a rare case that will impair quality of life caused by paralysis of gaze and double vision as visual impairment. Promptly diagnosis and management can prevent further damage and resolve the paralysis.

e-poster Abstract No.: 200122

Oculomotor Nerve Palsy with Pupil Involvement Caused by an Internal Carotid Artery Aneurysm : A Case Report

First Author: Helga EL SHEMIDA
Co-Author(s): Disti HARDIYANTI, Riski PRIHATNINGTIAS

Purpose:

To report a case of oculomotor nerve palsy with pupil involvement caused by an internal carotid artery aneurysm, including its diagnosis and management.

Methods:

A 65-year-old man with a history of hypertension presented to the Emergency Department with a progressively drooping of the left eyelid over one week. Symptoms included blurry vision, double vision, nausea, vomiting, and headaches, while the right eye was unaffected. Anterior segment examination showed normal findings except for left eye ptosis examination, which is Margin to Reflex Distance 1 (MRD 1) was -2 mm. Pupil examination revealed a normal right pupil with positive light reflex and a 5mm dilated left pupil with negative light reflex. Ocular movements in the left eye were restricted. Computed Tomography (CT) Scan angiography identified a saccular aneurysm in the segment C5 left internal carotid artery without bleeding, infarction, or intracranial tumors. The patient was treated by a multidisciplinary team, including ophthalmologists, neurologists, neurosurgeons, and internists, and underwent aneurysm clipping.

Results:

Ten days post-surgery, the left eye ptosis improved, ocular movements were restored, double vision resolved, and the left pupil diameter decreased to 3 mm with a positive light reflex. The patient also reported no dizziness.

Conclusions:

Comprehensive history, physical examination, and imaging were essential for diagnosing and managing oculomotor nerve palsy due to internal carotid artery aneurysm, leading to effective treatment and recovery.

e-poster Abstract No.: 200139

"Parinaud Syndrome": A Case Report

First Author: Julia Mercedes VILLALVA

Purpose:

This paper aims to provide awareness and emphasis on early detection and aggressive management to pediatric patients with intracranial tumors. This paper may also develop a scheme in studying similar cases to decrease morbidity and mortality and achieve a better outcome.

Methods:

This is a case of an 11-year old male who presented with progressive headache accompanied by limited upgaze on both eyes. Patient was initially diagnosed with Acute Tonsillopharyngitis. Due to persistent headache and an episode of projectile vomiting, patient consulted with an Ophthalmologist where he was given prescription glasses, which did not afford relief. A few days later, another episode of projectile vomiting associated with headache, diplopia and seizure occurred which prompted admission. Cranial MRI was done and revealed a heterogeneously enhancing mass at the pineal region. An emergency ventriculoperitoneal shunt was done due to another seizure episode. Patient underwent adjuvant radiotherapy, chemotherapy and incision biopsy.

Results:

Despite optimal therapy, patient passed away as result of multi-organ failure.

Conclusions:

Detailed history taking, comprehensive physical examination and appropriate radiological evaluation along with a multidisciplinary team are imperative in the prognosis of children with rare intracranial malignancies. Tumor markers may aid in determining the type of intracranial tumors, and avoid the morbidity and mortality associated with upfront neurosurgical intervention. Adjuvant chemo and radiotherapy along with excision of residual tumor is still the recommended treatment modality for better prognosis and survival.

e-poster Abstract No.: 200155

A case of bilateral optic neuropathy in a patient on tacrolimus(FK506) therapy after liver transplantation

First Author: Mingxing WU
Co-Author(s): Yan XU, Li ZHANG

Purpose:

To report a rare case of bilateral optic neuropathy in a patient receiving tacrolimus for immunosuppression after liver transplantation.

Methods:

Case report. In a 28-year-old female receiving tacrolimus after liver transplantation, a sudden loss of vision in both eyes occurred at the fifth month of taking tacrolimus, serial neuro-ophthalmologic examinations and laboratory studies were performed.

Results:

The patient had episodic deterioration of vision in both eyes, with clinical features resembling acute optic neuritis. Visual acuity was LP in the right eye and 10/50 in the left eye. There was a right RAPD and reduced color vision in the right eye. He had diffuse visual field loss in the right eye and scotoma in the left eye. Both optic discs were slight swollen. Magnetic resonance imaging demonstrated T1 enhancement of both optic nerves at the canalicular segment. Hematologic studies were negative for EBV, CMV, HSV, JC virus, Lyme, VZV, Leber hereditary optic neuropathy, and neuromyelitis optica. Deterioration of vision improved after high-dose corticosteroid therapy.

Conclusions:

Tacrolimus may be associated with optic nerve toxicity. Clinicians should be aware of this rare but major potential side effect of tacrolimus.

e-poster Abstract No.: 200174

A case of giant cell arteritis complicated by cerebral infarction in the internal carotid artery system

First Author: Tiantian GUO

Purpose:

Cerebral infarction is relatively rare in giant cell arteritis, and it is easy to leave neurological deficit, reminding clinicians to find it early and treat it early.

Methods:

The patient was an elderly woman with a new onset of temporal neck and occipital pain accompanied by a sharp drop in binocular vision, almost blindness in her right eye and only light perception in her left eye. Her condition worsened to ischemic stroke, showing aphasia and hemiplegia in her right limb. During the course of the disease, the inflammatory index increased. Perfect high-resolution wall imaging showed that the branches of bilateral internal and external carotid arteries were thickened and strengthened in different degrees, the diameter was thickened, and the lumen was occluded. Perfect biopsy of the right temporal artery showed that the intima was thickened and the elastic fibers were disordered and discontinuous, which was in line with the diagnosis of giant cell arteritis.

Results:

After high-dose hormone shock therapy, the patient's vision recovered and he simply enunciated and communicated. However, septic shock and GCA recurred in the process of hormone reduction, leaving visual impairment, aphasia and hemiplegia.

Conclusions:

Giant cell arteritis is often accompanied by sharp vision loss, which is an emergency in ophthalmology and neurology. It is necessary to identify and start treatment early, which can reduce the risk of irreversible ischemic events. In the process of hormone therapy, there are still many challenges. Clinicians should carefully and fully evaluate the condition and use non-hormonal immunosuppressants in time.

e-poster Abstract No.: 200196

Oculomotor nerve palsy following mild head trauma

First Author: Jie YE

Purpose:

To present 2 cases of traumatic isolated oculomotor nerve palsy and discuss the proposed mechanism of the enhanced nerve in T1-weighted magnetic resonance (MR) images with contrast.

Methods:

We presented 2 cases of isolated oculomotor nerve palsy after mild head trauma with corresponding T1-weighted MR images with contrast. A systematic review of literature related to the oculomotor nerve palsy following mild head trauma was performed as well.

Results:

Both patients presented with normal visual acuity, but with the injured eye's pupil fixed and dilated without any reaction to the light. The primary position of the injured eye on gaze was abduction as exotropia with limited movement of the elevation, depression and adduction. The marked gadolinium enhancement of the cisternal portion of the oculomotor nerve was shown with T1-weighted MR images with contrast. We screened 40 papers and included 14 papers finally. Among these 14 papers, only 7 papers (7 cases) were talking about oculomotor nerve palsy following mild head trauma with MR images. Then, three among seven with enhancement of the oculomotor nerve.

Conclusions:

The isolated traumatic oculomotor nerve palsy could show with the enhanced oculomotor nerve in T1-weighted images with contrast, though it was rare. After mild head trauma, the oculomotor nerve might be lesioned with a breakdown of the "neurovascular unit".

e-poster Abstract No.: 200197

Accommodation Spasm Post Epileptic Seizurecarotid artery system

First Author: Retno THARRA
Co-Author(s): Devi Azri WAHYUNI

Purpose:

To report a case of 23rd years-old woman diagnosed with near reflex accommodation spasm (NRAS) post epileptic seizure and generalized tonic-clonic seizure due to suspected idiopathic or symptomatic epilepsy. In addition, to be able to diagnose holistically and comprehensively regarding the condition of post-epileptic near reflex spasm, to understand the etiology and the symptoms of its causes.

Methods:

N/A

Results:

A 23rd years-old woman, with a chief complain of blurry bilateral eyes especially on near vision. She had an abrupted repeated seizures about 2 weeks prior. Ophthalmology examination found near vision 2.5 M on bilateral eyes and esotropia 15o. Right eye intraocular pressure 16,8 mmHg whereas left eye intraocular pressure 18,3 mmHg. Anterior and posterior segment examination were normal. Abnormal EEG II, slowing in the right centroparietoccipitotemporal was found. Her head CT scan was normal. She was diagnosed with NRAS post epileptic seizure and generalized tonic clonic seizure due to suspected idiopathic or symptomatic epilepsy. She was treated with vitamin B complex oral; folic acid oral; zinc oral; phenytoin oral; and levetiracetam oral. She was observed and followed-up at 2 weeks.

Conclusions:

The early detection and management of accommodation spasm in patients with seizures due to epilepsy are needed due to its rarity for a better prognosis.

e-poster Abstract No.: 200202

Orbital Manifestations Of Cerebral Venous Sinus Thrombosis And Cavernous Sinus Thrombosis: A Case Report

First Author: Fadillah AMRINA

Co-Author(s): Pinto DESTI RAMADHONI, Devi Azri WAHYUNI

Purpose:

To report a case of 34th years-old male with Cerebral Venous Sinus Thrombosis (CVST)

Methods:

N/A

Results:

A 34th years-old male with a complain of radiated pain, double vision and eyelid ptosis of the left eye. It was found that the left eye visual acuity had decreased to 6/21 pH (-). Right eye movement lateral -1 in lateral, superolateral and inferolateral directions while left eye obstruction -2 in medial, superomedial and inferomedial directions. Funduscopic examination revealed round papillae, indistinct boundaries, normal red color, CDR difficult to assess, partial obscuration at disc margin A:V = 2:3 and tortuise vein on right eye; whereas round papillae, indistinct boundaries, normal red color, CDR difficult to assess, C-shaped swelling at nasal border A:V = 2:3 on left eye. Macular fundus reflex was normal. The blood vessel contour was normal in bilateral both eyes retinal. Contrast-enhanced head MRI was normal. The DSA showed the presence of CVST and CST. He was diagnosed with paresis of CN. III, IV, VI due to ischemic process due to thrombosis of the cavernous sinus. The patient received antibiotic, anticoagulant (warfarin) and steroid therapy after DSA

Conclusions:

A multidisciplinary approach is very important in managing cases of neuroophthalmological disorders because the causes of nerve disorders that manifest in the orbit can be caused by other systemic conditions.

e-poster Abstract No.: 200218

Relapsing then progressively deteriorating optic neuropathy caused by diffuse large B-cell lymphoma (DLBL)

First Author: Chuan-bin SUN

Purpose:

To report the clinical, MRI imaging, and pathological characteristics of the infiltrative optic neuropathy caused by diffuse large B-cell lymphoma

Methods:

case report

Results:

A 69-year-old male presented for visual loss in the right eye for one month. At presentation, his visual acuity was counting fingers OD, ophthalmic examination revealed sluggish direct pupillary light reflex and swollen optic disc OD. Serum tests for common pathogens, common autoantibodies and AQP-4 antibody and MOG antibody were all negative. Orbital MRI revealed optic nerve enlargement and contrast enhancement OD. The patient was diagnosed DON OD, and treated with intravenous methylprednisolone pulse therapy, and then by oral methylprednisolone with slow tapering. 7 days later, his vision OD improved to 20/200. However, at 24 days follow-up, his vision OD decreased again to no light perception, accompanied with severe optic disc swelling and inferior retinal artery occlusion. Systemic physical examinations were recommended to the patient to rule out malignancy especially lymphoma and leukemia, but all results were all negative, neither was PET-CT test. At 2 months follow-up, the patient complained of ocular pain and still no light perception OD, ophthalmic examination revealed proptosis, severely limited ocular movement, and deteriorated optic disc swelling OD. Orbital MRI revealed much larger optic nerve than before in the right eye. Cerebrospinal fluid test did not find malignant cells. The patient was then performed right unilateral optic nerve biopsy via nasal endoscopic surgery and confirmed as DLBL.

Conclusions:

ION is rarely reported in literature as the initial presentation of DLBL.

e-poster Abstract No.: 200234

Septo-optic dysplasia in a 12-year-old child: A case report

First Author: Mingming SUN

Co-Author(s): Shu Hui WEI, Quangang XU, Huanfen ZHOU

Purpose:

This case report describes a 12-year-old girl presenting with progressive vision loss.

Methods:

Fundus examination shows optic nerve atrophy. Central nervous demyelinating antibodies (Aquaporin-4 (AQP4) antibody and myelin oligodendrocyte glycoprotein (MOG) antibody) and mitochondrial mutations were negative, MRI examination shows optic nerve atrophy, absence of pellucidum and abnormal pituitary morphology. Ultimately diagnosed with SOD.

Results:

Ultimately diagnosed with SOD.

Conclusions:

Septo-optic dysplasia (SOD) is a rare congenital anomaly characterized by a triad of septum pellucidum dysgenesis, optic nerve hypoplasia(ONH), and hypothalamic-hypophyseal dysfunction. The clinical findings are visual impairment, hypopituitarism and developmental delays. In cases of SOD without central nervous symptoms, ophthalmologic symptoms predominate or occur in isolation, maybe misdiagnosed as other optic neuropathy, such as optic neuritis or Leber hereditary optic neuropathy. MRI is the modality of choice to confirm the diagnosis of SOD. Three subtypes of SOD can be described on MRI, including classic SOD, SOD plus and SOD-like.

e-poster Abstract No.: 200254

A rare fish in the sea : A case of Acute Angle Closure in Miller-Fisher syndrome

First Author: Anna Margarita CUNA
Co-Author(s): Miriam Louella FERMIN

Purpose:

To present a case of 77 year old patient with acute primary angle closure with Miller-Fisher syndrome.

Methods:

This is a case report of a patient with Miller Fisher syndrome who presented with acute angle closure. Patient had sudden onset dizziness, hand numbness, difficulty ambulating, voice change, and bilateral ptosis four days prior. Two days prior, patient noted left eye pain, redness, headache, and blurring of vision. IOP lowering medications were given to the patient. Symptomatic treatment was advised by Neurology service. Ocular geneticist confirmed the diagnosis of Miller Fisher Syndrome and assured the family that the disease has no risk of inheritance.

Results:

Ocular examination revealed best-corrected visual acuity of hand movement, a 5mm pupil non-reactive light, elevated intraocular pressure (40mmHg), closed angles, and cup to disc ratio of 0.7 on the left eye. Neurologic examination showed ophthalmoplegia, ataxia, areflexia, bilateral ptosis, and hypernasality of voice. Anterior segment Ocular coherence tomography revealed iridotrabecular contact on the affected eye. Axial biometry of the left eye revealed normal values.

Conclusions:

Miller Fisher syndrome is a rare variant of Guillane-Barre syndrome and presents with a triad of acute ophthalmoplegia, areflexia, and ataxia. This can cause pupillary mydriasis predisposing these patients to acute angle closure attack. Appropriate management must be facilitated in order to preserve vision of acute angle closure patients. Multidisciplinary and holistic approach is a must for Miller Fisher syndrome patients in order to improve quality of life. This is the first reported case of acute angle closure in Miller Fisher syndrome in the Philippines.

e-poster Abstract No.: 200086

Insidious

First Author: Suzanne Dorothy LAPASARAN LIM * DR. CHRISCILLE DIANNE TAN - DY
Co-Author(s): Dianne Chriscille Jane DY

Purpose:

A case of a middle-aged female presenting with sudden loss of vision of the left more than right eye associated with proptosis, pain and long-standing left pulsatile tinnitus.

Methods:

Optical Coherence Tomography (OCT) of the retinal nerve fiber layer (RNFL) were normal with diffuse thinning of the ganglion cell layer complex on the left. Formal visual field perimetry 24-2 showed generalized depression on the left eye, and remaining central island of vision on the right. Urgent neuroimaging showed abnormal voids in the cavernous sinus regions prominent on the left than right with an enlarged left lateral rectus and superior ophthalmic veins and narrowed left orbital apex. Immediate Endovascular Neurosurgery referral and transvenous approach coil and embolization of fistula was performed.

Results:

At post-op 1 month, bruits were decreased with a significant improvement of the right eye to a best corrected visual acuity (BCVA) of 20/50 and left eye remaining at good light projection. At 3 months visit, palpable and audible bruits disappeared, with a BCVA of 20/30 on the right and hand movement on the left. OCT RNFL of left was subsequently thinned while the right remained normal. Formal visual field 24-2 showed resolution of the peripheral field defect on the right while Goldmann visual fields on the left shows superior, nasal and temporal isopters preserved while inferior areas restricted.

Conclusions:

Bilateral Carotid-cavernous Fistula is a life-threatening condition that can present with visual concerns if not immediately addressed. Urgent management and referral to appropriate subspecialty is highly recommended.

e-poster Abstract No.: 200117

BILATERAL ATYPICAL OPTIC NEURITIS IN CHILDREN : A CASE REPORT

First Author: Zamrud AWALY
Co-Author(s): Lukisiari AGUSTINI

Purpose:

Optic neuritis in children is rare compared to adult optic neuritis. Optic neuritis in children mostly caused by post-infectious or post-vaccination inflammation.

Methods:

A 8 year old boy came to Soetomo General Hospital with a chief complaint of blurred vision on both eyes since 6 days ago. He also felt pain when he glanced. Visual acuity was 1/60 not improved with pinhole, and on left eye was 1/300. Anterior segment examination was within normal limit, except light reflex reduced on both eyes. RAPD was negative. Color vision test with ishihara on right eye was 2/38 plates and on left eye hard to examined. On funduscopic examination found swollen optic disc and hyperemia on both eyes. Based on the history taking and clinical features, the patient was diagnosed with bilateral atypical optic neuritis caused by suspected immune-mediated post infection. Blood test result found IgG Rubella reactive 23.50 (normal <4.9).

Results:

Patient treated with intravenous methylprednisolone for 5 days, followed by oral methyl-prednisolone, and showed rapid improvement of visual acuity in 2 weeks of treatment.

Conclusions:

Optic neuritis is an uncommon condition in the pediatric population and usually underlies a viral cause. The diagnosis is made in the same basis as in the adult population, but its presentation is typically bilateral, with a very low VA and optic nerve swelling. The prognosis is generally good, especially when the patient is younger.

e-poster Abstract No.: 200129

Bilateral Presumed Ocular Tuberculosis with Unilateral Optic Neuritis in an Elderly Patient: A Case Report

First Author: Marie Franz ALCALA
Co-Author(s): Eden Joy PARAISO

Purpose:

To present a case of presumed ocular tuberculosis manifesting as bilateral uveitis with unilateral optic neuritis in a 74-year-old female

Methods:

A 74 year old female presented with sudden onset of painless blurring of vision in the left eye. Ophthalmologic examination revealed bilateral posterior uveitis, characterized by retrolental cells and vitritis, and unilateral optic neuritis in the left eye, evident by hyperemic disc and decreased visual acuity. Despite the lack of direct microbiological confirmation, a diagnosis of ocular tuberculosis was strongly suspected based on a positive TB quantiferon test. The patient was initiated on anti-tubercular therapy (ATT) in combination with systemic corticosteroids to manage both the uveitis and optic neuritis.

Results:

The patient responded well to the combination of anti-tubercular therapy (ATT) and corticosteroid therapy. Inflammation in both eyes decreased and optic neuritis in the left eye improved, resulting in partial recovery of visual function. Throughout the treatment course, the patient was closely monitored for potential side effects, with no significant complications observed.

Conclusions:

This case emphasizes the importance of considering tuberculosis in the differential diagnosis of uveitis with optic neuritis, particularly in elderly patients living in TB-endemic areas. The favorable response to anti-tubercular therapy combined with corticosteroids highlights the effectiveness of this approach in managing such complex cases.

e-poster Abstract No.: 200238

Misdiagnosis of Buried optic disc drusen in young patients with high hyperopia

First Author: Zhe LIU

Purpose:

To report the clinical characteristics and differential diagnosis of buried optic disc drusen in biocular high hyperopia of a yong female patient.

Methods:

Case report

Results:

A yong female complained blurred vision of her left eye. Ophthalmic examination showed that the visual acuity was OD: 0.15 (+8.50DS/-2.00DC=0.6); OS: FC/50cm (+8.0DS). The optic disc was congested and mildly edematous, with a protrusion of about 1.0 D. OCT showed that the retina nerve fiber layer (RNFL) was thicker than normal. Visual field examination revealed a concentric visual field defect in the left eye. The initial diagnosis was optic neuritis, but there was no significant improvement after steroid treatment. A retrospective analysis was conducted as steroid treatment is ineffective. Fundus fluorescein angiography (FFA) showed that optic disc drusen with nodular strong fluorescence and no abnormal leakage. B-scan showed that there was a small round hyperreflexes intraretinal. Obital CT scan shows irregular nodular high-density shadows on the optic disc. Thus, then the revised diagnosis is made as buried optic disc drusen with high hyperopia in both eyes, which was not correctly diagnosed in initial diagnosis and it was worth to learn as a lesson.

Conclusions:

Buried optic disc drusen with high hyperopia in both eyes are rare in clinical practice, which are easily misdiagnosed as papilledema, optic neuritis, and ischemic optic neuropathy. Fundus examination, FFA, ocular ultrasound and orbital CT scan have important differential diagnostic significance, and can help to make a definite diagnosis.

e-poster Abstract No.: 200251

Autoimmune Reactivity on Neuromyelitis Optica Spectrum Disorder (NMOSD) Triggered by Urinary Tract Infection

First Author: Devi Azri WAHYUNI
Co-Author(s): Christian SIANIPAR

Purpose:

To report a case of neuromyelitis optica spectrum disorder (NMOSD) triggered by urinary tract infection (UTI) and advocating possible clinical considerations in such cases.

Methods:

N/A

Results:

A 39 years old woman with a chief complaint of sudden blurred vision of the right eye (RE) since a week ago was consulted to ophthalmology department. Patient had a history of quadriparesis since three weeks ago and concurrent pain on the left leg radiating from the back. Fever, malaise and infrequent urination is also present. Ophthalmic examinations of the RE revealed a visual acuity of 20/200 with positive relative afferent pupillary defect, optic disc atrophy, dischromatopsia and contrast-sensitivity of 1.50. Head and whole spine MRI was performed revealing no significant findings on head MRI and myelitis on C3-6/Th7-8. Lumbal puncture was also performed with findings of increased monocyte (> 100 cells) and no oligoclonal bands. The patient was diagnosed with NMOSD with pyelonephritis thus requiring multidisciplinary approach involving ophthalmology, neurology and digestive surgery department. The patient was treated with high dose IV methylprednisolone and IV ceftriaxone. No significant clinical improvement was observed and the patient was planned for plasmapheresis. Patient experienced rapid deterioration attributed to worsening UTI shown by Abdominal CT-Scan revealing psoas abscess after initial treatment. Patient passed away before receiving prompt explorative laparotomy.

Conclusions:

Ascending UTI might predispose the patient into autoimmune attack because infection can cause destruction of renal cells that expressed AQP4 thus causing epitope dissemination. In this case, NMOSD must be treated while keeping the infection in check.

e-poster Abstract No.: 200252

Central retinal artery occlusion or compressive optic neuropathy

First Author: Mengying TAO
Co-Author(s): Yan LUO*

Purpose:

To present a rare case of compressive optic neuropathy (CON) associated with sphenoid sinus.

Methods:

Case report.

Results:

A 51-year-old male presented to the local hospital 1 day after a sudden vision impairment and deteriorated to light perception in his left eye (LE). He reported no history of medication, alcohol, or injury, and received ophthalmic artery thrombolysis for suspected central retinal artery occlusion in LE. Visual acuity (VA) remained unchanged. Magnetic resonance imaging (MRI) revealed a hyper-dense cystic watery signal located in left sphenoid sinus. The patient was set on intravenous steroids (500 mg Methyl-prednisolone/day) in tapering dose. Upon presentation in our hospital after 22 days, the therapeutic benefit was still not obvious. Relative afferent pupillary defect (RAPD) was observed. Ocular motility seemed undisturbed. Except for a slightly pale optic disc, retina appeared normal in LE after dilated fundoscopy. Computerized tomography was performed and a cystic mixed-density mass lesion was detected in the sphenoid sinus and inferior margin of the left optic canal, adjacent to bone resorption and pathological fracture, in accord with suspected thinning of the optic nerve. Based on clinical and radiologic findings, an urgent endoscopic surgery was scheduled and the lesion was efficiently evacuated to facilitate decompression of the optic nerve, while its content was a benign cyst after pathological evaluation. Unfortunately, visual recovery was not observed.

Conclusions:

This report highlights the early diagnosis associated with acute deterioration of vision and the importance of the radiologic examination. Delayed diagnosis and surgery may lead to permanent visual loss in CON.

e-poster Abstract No.: 200123

Progressive Visual Loss in Orbital Apex Syndrome: A Case Report

First Author: Chalimi ARDANI

Co-Author(s): Disti HARDIYANTI, Riski PRIHATNINGTIAS

Purpose:

To report diagnostic and management approach of the patient with orbital apex syndrome (OAS)

Methods:

This paper present a case of a 20-year-old woman with complaint of sudden blindness on the left eye in the last 12 hours. Initially the patient complained that it started to get dark from the nasal side in the last 2 weeks and could only see from the temporal side and then became completely dark. From the ophthalmologic examination the left eye showed no light perception and ophthalmoplegia accompanied with pain during eyeball movement. Funduscopic examination of the left eye was normal without any abnormalities in optic nerve head. The right eye was otherwise normal. The patient received corticosteroid high dose injections while also programmed for diagnosis workup such as magnetic resonance imaging (MRI) and a few autoimmune parameters including rheumatoid factors, Antistreptolysin-O (ASTO), and C-reactive protein.

Results:

In accordance to the medical history, ophthalmologic examination, and the result of ancillary tests such as optic nerve compression from MRI and positive ASTO parameter, the patient was diagnosed with OAS on the left eye due to suspected autoimmune condition. During hospitalization the patient received corticosteroid injection and reported visual improvement from no light perception to hand movement on the left eye.

Conclusions:

A proper history taking and ophthalmologic status examination can lead to an early diagnosis. Treatment with anti-inflammatory drugs can improve the OAS visual prognosis especially in autoimmune etiology.

e-poster Abstract No.: 200125

Brain Cysticercosis: What kind of ocular manifestation could happen? : A Case Report

First Author: Mengying TAO
Co-Author(s): Yan LUO*

Purpose:

To Describe a rare case of Brain Cysticercosis with blurred vision.

Methods:

A Case Report about a Man 51 years old. He came to our polyclinic with blurred vision four 4 month ago, which has persisted until now. Blurring felt worse in the left eye. Before this complaint was felt, the patient said he had suffered a stroke with left-side weakness and was hospitalized for five days. This complaint makes it difficult for the patient to walk upstairs and often crashes. Visual Acuity 6/15 on the right and 6/45 on the left. During the ophthalmology examination, we found the anterior and posterior segments of the eyeball are within normal limits, with mild contrast and color deficit in both eyes. Visual Field test shows left homonymous hemianopia. We are planning a Brain MRI with contrast.

Results:

The MRI Brain result was multiple calcifications on the frontal, parietal, temporal, cerebellum, midbrain, and pons, which are suspected to be cysticercosis, and acute cerebral infarction on the right occipital, which caused left homonym hemianopia. We were planning to do a stool examination, angiography and consult the patient to the neurology department, but the patient never came again.

Conclusions:

In this case, hemianopia and visual impairment may be due to parasites entering the vascular system, which causes an ischemic process in the brain.

e-poster Abstract No.: 200181

"Hunting for Clues"

First Author: Marianne Joyce CUSTODIO

Purpose:

To present a case of unilateral painful ophthalmoplegia in a 32 year old male

Methods:

A 32 year old male presented with painful ophthalmoplegia, blurring of vision and horizontal binocular diplopia. Remarkable findings on initial examination showed visual acuity of 10/200 in the right eye and hand motion in the left eye with relative afferent pupillary defect, moderate ptosis and horizontal binocular diplopia. Significant limitations of the left extraocular muscle movements were noted.

Results:

Diagnosis of Tolosa-Hunt Syndrome was based on the patient's clinical presentation and radiologic finding of left cavernous sinus thickening. The patient was managed with IV and oral methylprednisolone. Appreciable visual enhancement, motility improvement and cavernous sinusitis resolution were noted after completion of treatment.

Conclusions:

This case report emphasizes the importance of early detection and timely steroid therapy in managing Tolosa-Hunt Syndrome to attain a remarkable outcome.

e-poster Abstract No.: 200203

Cerebello-Pontine Angle Tumor with a Manifestation of a Primary Papilledema: a Case of More Than Meets the Eye

First Author: Dr.Gina YOLANDA
Co-Author(s): Devi Azri WAHYUNI

Purpose:

This case report aims to describe a case of CPA tumor in a 34-year-old man with a history of hyperthyroidism. His chief complaint was progressive blurred vision in both eyes, accompanied by headache and hearing loss in the left ear, which led to bilateral papilledema in the patient

Methods:

N/A

Results:

Ophthalmologic examination revealed decreased visual acuity, increased intraocular pressure, and papillae in both eyes. Contrast-enhanced head MRI showed a mass in the CPA compressing the left cerebellum and pons, extending to the left internal acoustic meatus, indicating a vestibular schwannoma. Medical management was undertaken to address the increased intracranial pressure and symptoms experienced by the patient. Pure tone audiometry and tympanometry revealed severesensorineural hearing loss in the left ear. The patient was diagnosed with grade III bilateral papilledema due to increased intracranial pressure from a suspected schwannoma CPA tumor, and ocular hypertension in both eyes. Treatment included diclofenac sodium eye drops every 8 hours, timolol maleate 0.5% every 12 hours, mecobalamin, vitamin B complex, and thiamazole. The patient was referred to a neurosurgeon for consideration of surgery or radiotherapy

Conclusions:

Tumors of the cerebellar angle, such as vestibular schwannomas, can increase intracranial pressure as the tumor mass compresses structures around the brain. This can lead to ophthalmic manifestations, such as visual impairment and hearing loss. Therefore, it is important to carry out an ophthamologic examination and prompt treatment to prevent further complications, such as permanent damage to vision or hearing

e-poster Abstract No.: 200206

Eye Got Your Back: A Neuromyelitis Optica Spectrum Disorder (NMOSD) Case Report

First Author: Patricia Anne CABANIT
Co-Author(s): Karen REYES

Purpose:

To present a case of a 22-year-old female with unilateral visual loss.

Methods:

A 22-year-old female presented with unilateral visual loss, pain on eye movement, and left-sided headache. Low back pain radiating to the lower extremities and ataxia were also noted. Remarkable findings on initial examination showed visual acuity of the affected eye of counting fingers with a grade 3 relative afferent pupillary defect and a swollen disc on dilated fundoscopy. Serum anti-aquaporin 4 testing revealed negative results; MRI of the thoracolumbar spine showed multilevel, patchy, non-enhancing T2W hyperintense signals at the level of T6-T9 and T11-T12.

Results:

The diagnosis of NMOSD was based on the patient's clinical presentation of optic neuritis and myelitis, as well as radiologic findings suggestive of demyelinating disease. The patient was managed with intravenous and oral corticosteroids. Significant visual acuity improvement and resolution of eye pain, low back pain, and ataxia were noted after completion of treatment.

Conclusions:

This case report emphasizes the importance of doing a comprehensive clinical examination, taking into consideration all presenting signs and symptoms to properly diagnose a patient with NMOSD. Prompt initiation of steroid therapy and regular follow-up consults are essential in managing NMOSD.

e-poster Abstract No.: 200209

Bilateral Papiledema And Abducens Nerve Paresis As Neuroophtamological Manifestations Praneoplastic Syndrome: A Case Report

First Author: Tresa SASKIA
Co-Author(s): Devi Azri WAHYUNI

Purpose:

To report a case of bilateral papilledema with abducens nerve paresis as a neuro-ophthalmological manifestation in a suspected paraneoplastic syndrome

Methods:

N/A

Results:

A 61-year-old man presented with blurred vision for 1 year, which had worsened over the past month, and difficulty adjusting vision to different lighting conditions. The patient had continuous intermittent vertigo for 2 months, which was triggered by position changes, and worsened in the last 2 days. In addition, the patient had a brief seizure 2 weeks ago and intermittent hemoptysis for 3 weeks. Ophthalmologic examination revealed symmetrical bilateral vision of 6/60 with negative pinhole, temporal -1 eye movement restriction in both eyes, grade 1 papillae, and decreased contrast sensitivity. CT scan showed an irregular mass in the left lung, calcified nodules and multiple lymphadenopathies in the right paratracheal region. MRI of the head showed multiple ring lesions suggestive of metastasis. Pathologic anatomy showed adenocarcinoma in sputum and reactive bronchial changes. The patient was diagnosed with bilateral grade 1 papilledema, bilateral abducens nerve paresis, and suspected paraneoplastic syndrome. Treatment included vitamin B complex, folic acid, and diclofenac sodium for eye problems

Conclusions:

In this case, the neuro-ophthalmologic manifestations of Paraneoplastic Neurologic Syndrome (PNS) were demonstrated by bilateral papilledema and paresis of the VI nerve. Primary management focuses on treating the cancer with radiation therapy and medication to reduce symptoms. Despite improvement after therapy, continued monitoring is required to prevent further complications.

e-poster Abstract No.: 200217

Fashion Trouble: The hidden danger of rituximab-induced dry eye and non prescription colored contact lensReport

First Author: Karen REYES

Purpose:

To discuss a case of corneal abrasion in a 23-year-old who has been using rituximab for over one year, who wore non-prescription colored contact lenses for a night while attending a concert and sustained bilateral corneal abrasions upon removal of the contact lens after the event.

Methods:

This is a case report.

Results:

A 23 year old initially presented with bilateral eye pain, with history of contact-lens use the day prior to consult. These contact lenses were bought online. The patient noted abrupt bilateral eye pain after removal of contact-lenses that was accompanied by eye redness and tearing in both eyes, with no associated blurring of vision. No interventions were done and the patient sought consult at the ER. Fluorescein staining showed positive dye uptake in the shape of the contact-lenses, approximately 5-6mm in diameter. All other examinations were unremarkable. It was also elicited in the history that the patient was on rituximab as part of the treatment for multiple sclerosis and a side effect of this drug is dry eyes which was aggravated by the use of contact-lenses.

Conclusions:

A thorough history and physical examination are essential to identify all potential contributing factors. Eye doctors, especially neuro-ophthalmologists who frequently see patients with demyelinating diseases, should increase counseling on the ophthalmologic side effects of long-term systemic drugs like rituximab. This proactive approach will help patients prepare for and minimize these side effects.

e-poster Abstract No.: 200283

A case of lymphoplasmacyte-rich meningioma involving both optic pathways successively

First Author: Yu HE

Purpose:

To review a case of lymphoplasmacyte-rich meningioma successively involving bilateral optic pathways.

Methods:

May 7, 2024, a 70-year-old male complained decreased vision in his left eye for 1 week. The patient visited in June 2020 due to decreased vision in the right eye with headache. VOD NLP ,VOS 0.4/BCVA 0.7. The right pupil was 6mm, direct and indirect light reflections disappeared. Exotropia and ptosis of the eyelid in right eye. MRI: Enhancement and long T2 signal in the right cavernous sinus, involving the right optic nerve (possibly inflammatory lesions). infection and immune indexes were negative. Serum AQP4, MOG(-). Diagnosis: Tolosa Hunt syndrome, cavernous sinus inflammation, right optic neuritis. After methylprednisolone treatment for 10 days, the vision improved to 0.02. Three months ago, the patient experienced visual obstruction in the left eye, with headache. VOS 0.1, delayed light reflex in left eye, clear optic disc boundary. MRI: An enhancement nodule in the pituitary fossa, which extends outward to the left cavernous sinus. Pituitary scan: The lesion significantly enhanced, compressing the left portion of the optic chiasm. Diagnosis: Middle skull base mass (meningioma?), left compressive optic neuropathy.

Results:

Meningioma resection surgery was performed on June 6, 2026. Pathological examination revealed proliferation of spindle cells and lymphoid cells, with an increase in plasma cells and IgG4(+) cells. Immunohistochemical staining indicated the presence of EMA, PR, S100, CD3 (+), CD20 (+), CD138 (+), and 60 IgG4(+) cells/HPF.

Conclusions:

lymphoplasmacyte-rich meningitis is characterized by the proliferation of meningeal epithelial cells with extensive infiltration of lymphocytes and plasma cells.

e-poster Abstract No.: 200115

Prévost Sign Indicating Early Pontine Tuberculoma in a 25-Year-Old Patient:

First Author: Anak Agung Mas Putrawati TRININGRAT

Co-Author(s): Ni Putu Dharmi LESTARI, Made Paramita WIJAYATI

Purpose:

This case report emphasizes the diagnostic significance of the Prévost sign in the early detection of pontine tuberculoma in a young adult.

Methods:

A 25-year-old male presented with right-sided gaze pain, posterior headache, bilateral blurred vision, and tinnitus. Initial visual acuity was 1/60 in the right eye (RE) and 6/90 in the left eye (LE). Anterior segment examination was normal, and no relative afferent pupillary defect (RAPD) was noted. Ocular motility tests revealed restricted movement in the RE in superotemporal, temporal, and inferotemporal directions with pain, while the LE showed restricted movement in superomedial, medial, and inferomedial directions without pain. Visual acuity improved after two weeks, with RE rising from 1/60 to 6/60 (PH 6/45) and LE from 6/90 to 6/19 (PH 6/9.5) despite the absence of medication. Ocular gaze restriction persisted. MRI with contrast revealed a thick-walled, well-defined, solid intra-axial lesion in the right pons with perifocal edema, indicative of tuberculoma. The patient did not return for further management.

Results:

The patient's right-sided gaze pain, posterior headache, and ocular motility restrictions suggested cranial nerve involvement and an intracranial lesion. Bilateral blurred vision and tinnitus raised suspicion of pontine pathology affecting multiple cranial nerves. The MRI findings of a solid pons lesion with perifocal edema supported the diagnosis of pontine tuberculoma. Differential diagnoses such as neoplastic, infectious, or inflammatory lesions were considered.

Conclusions:

This case highlights the importance of Prévost sign and associated neurological symptoms in the early diagnosis of pontine tuberculoma.

e-poster Abstract No.: 200132

Bitemporal Hemianopsia Caused by Hypophysis Macroadenoma: A Case Report

First Author: Raditya DARYOSTA
Co-Author(s): Disti HARDIYANTI, Riski PRIHATNINGTIAS

Purpose:

To report a case of bitemporal hemianopsia caused by a hypophysis macroadenoma, including its diagnosis and management.

Methods:

A 45-year-old female presented with blurry vision in her both eyes since 2 years ago. The patient feels progressively severe headaches. The patient didn't feel amenorrhea, fatigue, weight gain, cold intolerance, constipation, arthralgia, low blood pressure, dizziness, nausea, vomiting, and abdominal pain. The patient then went to an ophthalmologist at Dr. Kariadi Hospital, the patient was prescribed glasses and the patient was outpatient but the vision of both eyes remained blurred. 9 months Prior to admission, the patient was seen by an ophthalmologist at Dr. Kariadi Hospital and the patient's vision became increasingly narrow and heavier in the left eye. The patient then had an MRI scan of the head with contrast and was advised to consult a neurosurgeon at Dr. Kariadi Hospital. The patient was then to be hospitalized in preparation for further examination and performed FESS III & ETSS surgery

Results:

Two days post-surgery, visual acuity improved. However, the visual field has not yet shown improvement. Two weeks post-operation, the visual field began to improve.

Conclusions:

Bitemporal hemianopia is a type of visual field defect resulting from pressure on the optic chiasm. The only effective treatment to halt or slow the progression of the visual field defect, and potentially improve the patient's visual acuity, is the removal or reduction of the tumor to relieve the pressure on the optic chiasm.

e-poster Abstract No.: 200262

Combination of drug therapy and surgical treatment for anterior ischemic optic neuropathy combined with epiretinal macular membrane and macular edema

First Author: Zhe LIU

Purpose:

To investigate the comprehensive treatment of steroid therapy and vitrectomy in patients with anterior ischemic optic neuropathy (AION) complicated by epiretinal macular membrane (ERM) and macular edema.

Methods:

Case report.

Results:

An elderly female patient with hypertension had a suddenly decreased visual acuity in her right eye, Ophthalmic examination showed a visual acuity of OD is 0.05 and OS is 0.3. The fundus examinations showed obvious congestion and high edema of the optic disc in the right eye. The thickness of retina nerve fiber layer (RNFL) is 313um in the right eye, with macular membrane traction and macular cystic edema. Visual field examination shows a fan-shaped visual field defect connected to the optic disc in the right eye. Fundus fluorescein angiography (FFA) showed that in the early stage, the filling of the lower part of the optic disc in the right eye was slightly delayed, and the capillaries in the upper part were dilated, fluorescence leakage affected the macula. After three days of steroid therapy with 500mg methylprednisolone, the swelling of the optic disc had been significantly subsided. The patient then switched to oral administration of prednisone. Then cataract phacoemulsification combined with vitrectomy and peeling of epiretinal macular membrane was performed, and the patient's condition stabilized and visual acuity improved significantly after surgery.

Conclusions:

The anterior macular membrane could exacerbate macular edema and optic disc ischemia of AION. Steroid therapy combined with vitrectomy and membrane peeling surgery are beneficial to eliminate edema and improve optic nerve function.

e-poster Abstract No.: 200061

Optic Nerve Sheath Meningioma with Acute Presentation

First Author: Jeffrey Kai Chun MAK
Co-Author(s): Noel Ching-yan CHAN, Andrew MAK

Purpose:

To describe a rare presentation of optic nerve sheath meningioma (ONSM)

Methods:

A retrospective case report

Results:

An 81-year-old gentleman presented with 2 weeks of painless visual loss in his left eye (LE). His LE visual acuity (VA) was hand movement with relative afferent pupillary defect (RAPD), mild optic disc pallor, and 1mm proptosis. Computed tomography (CT) of the brain showed abnormal asymmetrical diffuse thickening of the left optic nerve especially over the portion near the optic canal with differential diagnosis of optic neuritis or compressive optic neuropathy. Patient later developed pupil involved partial oculomotor nerve palsy with divergent squint (20PD) from restricted left adduction and depression. Magnetic resonance imaging (MRI) showed ill-defined mildly enhancing soft tissue mass centered in the left orbital apex, suggestive of ONSM. Positron emission tomography (PET) excluded systemic malignancies. Stereotactic fractionated radiotherapy (SFRT) was offered but deferred due to COVID outbreak. Six months later, he experienced mild improvement in LE VA and declined SFRT given his old age. Upon follow up, his LE VA gradually improved to 20/40, with resolution of proptosis, residual anisocoria (2mm) and residual divergent squint (2PD).

Conclusions:

ONSMs often presents with slow progressive visual loss. Spontaneous improvement is rare. We presented an atypical case of ONSM, with subacute visual impairment and pupil involved partial oculomotor nerve palsy secondary to hemorrhage of the meningioma. Clinical improvement was observed upon hemorrhage resolution without SFRT. Our case highlights the importance of timely neuroimaging, careful image interpretation, and clinical surveillance in the management of ONSM.

e-poster Abstract No.: 200142

Optic Neuritis Et Causa Neuromyelitis Optica: A Case Report

First Author: Aufan SHIDQI

Co-Author(s): Disti HARDIYANTI, Riski PRIHATNINGTIAS

Purpose:

To report a case of optic neuritis et causa neuromyelitis optica, including its diagnosis and management.

Methods:

A 31-year-old man come with total visual loss in the right eye to the Emergency Department with history blurry vision since 3 weeks ago. Symptoms included blurry vision, nausea, vomiting, and headaches, while the left eye was unaffected. Anterior segment examination showed normal findings. Pupil examination revealed decreased right pupil reflex with 3mm diameter and positive Relative Afferent Pupillary Defect (RAPD) while left pupil showed normal pupil reflex. Funduscopy examination showed papil with reddish color and border is not firm. Magnetic Resonance Imaging (MRI) Scan identified enhanced oval shape lesion intraspinal cord as high as corpus vertebrae C4-C7 and Th 11-Th 12 leading to Neuromyelitis Optica (NMO). The patient was treated by a multidisciplinary team, including ophthalmologists, vascular surgeons, and internists, and underwent Therapeutic Plasma Exchange (TPE).

Results:

After third TPE, the visual acuity increased significantly to 6/7.5 in the right eye, and the right pupil reflex become normal. TPE showed good response in this optic neuritis case. The patient also reported no dizziness and nausea.

Conclusions:

Clinical approach including radiology examination is major role for diagnosis and managing optic neuritis et causa neuromyelitis optica, leading to effective treatment and recovery.

e-poster Abstract No.: 200232

A case of nonarteriotic anterior ischemic optic neuropathy after cataract surgery

First Author: Xunwen LEI

Purpose:

The purpose of this article was to summarize and report the clinical features of nonarteriotic anterior ischemic optic neuropathy (NAION) after cataract phacoemulsification.

Methods:

Retrospective case study.

Results:

This article retrospectively analyzed the diagnosis and treatment of NAION in 1 case after cataract operation, and discussed the diagnosis, treatment and prevention of NAION. The patient developed the disease 7 days after cataract surgery. After treatment to improve circulation and nutritional nerve, the best corrected visual acuity index of the affected eye was increased from CF/30cm to 0.1.

Conclusions:

Intraocular surgery, hypertension and dyslipidemia may be the predisposition factors for NAION in this case. Careful preoperative fundus examination is the key to diagnosis and treatment.

Abstract No.: 200130

Poster No.: -P013 Panel No.: P013

Single-cell RNA sequencing reveals insights into the tumor microenvironment and the lymph node metastasis mechanism of eyelid sebaceous carcinoma

First Author: Ziyue HUANG

Co-Author(s): Renbing JIA, Shiqiong XU

Purpose:

Eyelid sebaceous carcinoma (SeC) is the third most frequent eyelid malignancy worldwide and occurs more commonly in Asians, accounting for nearly 40% of all eyelid malignancies in China. Eyelid SeC mainly originates from the meibomian glands, Zeis glands, and periocular skin. It demonstrates regional lymph node and distant organ metastases, resulting in a 1.6% to 31.0% disease-specific mortality. But the mechanism of lymph node metastases still remains uncertain.

Methods:

We collected in situ samples of Eyelid sebaceous carcinoma, both lymph node metastases and non-lymph node metastases, as well as paired lymph node metastases samples. We then performed single-cell RNA sequencing to profile the tumor microenvironment of the eyelid sebaceous carcinoma.

Results:

We identified 9 major cell types: T Cell, NK Cell, Mast Cell, Macrophage, Plasma B Cell, B Cell, Fibroblast Cell, Endothelial Cell and Tumor Cell. We found out unique subpopulations of some stromal cells and immune cells in the tumor microenvironment of the samples which had lymph node metastasis: arterial endothelial cells, COL1A1+ CAF, inflammatory CAF, SPP1+Tumor-Associated-Macrophage and C1QC+ Tumor-Associated-Macrophage.

Conclusions:

In situ lesions with lymph node metastases have a unique tumor microenvironment and that might provide new insights into the lymph node metastases mechanism of Eyelid sebaceous carcinoma. Follow-up mechanistic studies are needed to clarify the roles of the identified cells and how they can be exploited for therapeutic approaches.

Abstract No.: 200187

Poster No.: -P014 Panel No.: P014

Minimally-invasive, Navigation-guided Transconjunctival Extraocular Muscle Biopsy

First Author: Mark Joseph LAGAO

Co-Author(s): Karen CHAN, Kelvin Kam Lung CHONG, Wilson WK YIP

Purpose:

To describe the surgical technique and evaluate the safety, precision, and diagnostic utility of navigation-guided extraocular muscle (EOM) biopsy performed via an anterior transconjunctival approach.

Methods:

A retrospective case series of 3 consecutive patients with enlarged EOMs requiring biopsy is presented. Magnetic Resonance Imaging confirmed tendon and belly enlargement of the affected muscles. The surgical technique involved an anterior transconjunctival incision, isolating the muscle with squint hooks, and longitudinally splitting a 3-mm wide muscle segment. The posterior extent of the biopsy was confirmed using a navigation system, ensuring the sample included the enlarged muscle belly. The muscle strip was excised between the tendon and the posterior margin, leaving a stump. Data on demographics, clinical presentation, imaging, histopathology, and outcomes were reviewed, as well as procedural safety and accuracy.

Results:

Three female patients, mean age 65 years (± 15.75), presented with decreased vision, diplopia, and conjunctival chemosis. Two patients had unilateral lateral rectus enlargement, while two had bilateral multi-muscle involvement. All patients underwent successful biopsies with pathological confirmation of disease. No significant intra- or post-operative complications occurred, and strabismus and EOM motility remained unchanged post-operatively.

Conclusions:

Navigation-guided EOM biopsy via a transconjunctival approach is a safe, precise, and minimally invasive method for diagnosing conditions affecting both muscle tendons and bellies. This approach offers a reliable option for managing complex orbital inflammatory diseases.

Abstract No.: 200054

Poster No.: -P015 Panel No.: P015

Combined excision and punch punctoplasty for the management of peripunctal nevus and review of literature

First Author: Stella Weng Chi SIO

Co-Author(s): Hunter YUEN, Andre MA

Purpose:

Peripunctal nevus is a rare type of conjunctival nevus. This paper reported the effectiveness of a new surgical technique, namely combined excision and punch punctoplasty, for managing peripunctal nevus. Additionally, a literature review of characteristics and published techniques for peripunctal nevus was conducted.

Methods:

Three patients with peripunctal nevi were treated using a combined procedure of shave excision and punch punctoplasty. The procedure involved removing the peripunctal lesion and expanding the punctal opening and canaliculs with a standardized Kelly punch to minimize the risk of postoperative punctal stenosis. A temporary stent was not inserted.

Results:

The procedure achieved a high anatomical and functional success rates. No patients reported symptoms of either epiphora or dry eyes during any follow-up visits after the surgery. There were no instances of postoperative punctal stenosis or lesion recurrence. Furthermore, all patients displayed visibly well-patent puncta and expressed satisfaction with the aesthetic outcome.

Conclusions:

The combined procedure of shave excision and punch punctoplasty is a safe, effective, and minimally invasive method for managing peripunctal nevus. The procedure eliminated the need for **temporary stent, prevented related complications, and reduced the probability of requiring additional surgery compared to excision alone.**

Abstract No.: 200244

Poster No.: -P016 Panel No.: P016

Mobile Endoscopy as a Cost-Effective Alternative for Preoperative Evaluation in Endoscopic Dacryocystorhinostomy

First Author: Shui King TSOI

Co-Author(s): Charmaine FU, Hunter YUEN

Purpose:

Endoscopic dacryocystorhinostomy (EDCR) is a surgical procedure performed to address nasolacrimal duct obstruction. Traditionally, rigid nasoendoscopy has been utilized for preoperative evaluation, but its limitations in terms of cost and accessibility prompt the exploration of mobile endoscopy solutions. This case report aims to highlight the effectiveness of mobile endoscopy as a cost-efficient alternative,to rigid nasoendoscopy for evaluating nasosinusal anatomy prior to EDCR.

Methods:

Two cases were examined where mobile endoscopy was utilized to assess patients' nasosinusal anatomy before undergoing EDCR.

Results:

A 75-year-old and a 97-year-old female with nasolacrimal duct obstruction underwent preoperative evaluation using a mobile endoscopy system. This approach allowed for real-time visualization of the nasal and lacrimal systems in an outpatient setting. The mobile endoscope provided reasonably comparable images to those obtained through traditional rigid nasoendoscopy and facilitated a brief preliminary assessment with minimal discomfort to the patient. The overall costs were significantly lower than those associated with rigid nasoendoscopy.

Conclusions:

These cases demonstrate that mobile endoscopy is a viable and cost-effective alternative for preoperative evaluation in EDCR. The use of mobile technology aligns with the growing emphasis on cost efficiency in healthcare. Further studies are warranted to validate these findings across larger populations.

Abstract No.: 200066

Poster No.: -P017 Panel No.: P017

DEK:: AFF2 Lacrimal Sac Squamous Cell Carcinoma

First Author: Ho Lam WONG

Co-Author(s): Man Nga HAU, Hunter YUEN, Matthew LAM

Purpose:

DEK: AFF2 squamous cell carcinoma (SCC) is an emerging subtype of sinonasal carcinoma. This tumour histologically mimics sinonasal papilloma but has a totally different prognosis, with a tendency for frequent local recurrence, nodal and distant metastases, and even death. We hereby present a case of upward extension of DEK:: AFF2 SCC from the nasal cavity to the lacrimal sac.

Methods:

Review of clinical notes, radiological reports, and operative records of a patient diagnosed with DEK:: AFF2 SCC at Hong Kong Eye Hospital, a regional tertiary referral centre, was performed. Demographic data, clinical presentation and pathological characteristics of the case were presented. A literature search on orbital involvement by DEK:: AFF2 SCC was conducted and the results were summarized.

Results:

A 73-year-old female presented with right eye blood-stained tear discharge and right lacrimal sac swelling. She had a history of recurrent right nasal polyp excision. Preoperative imaging revealed a lacrimal sac mass lesion, enlarged nasolacrimal duct and soft tissue densities in the right inferior meatus. Right lacrimal sac mass incisional biopsy was performed. Histology and fluorescence in-situ hybridization yielded the diagnosis of DEK:: AFF2 SCC. Review of literature revealed four other similar cases. Orbital involvement by DEK:: AFF2 SCC apparently always occurs via extension of nasal disease to the lacrimal sac via the nasolacrimal duct.

Conclusions:

We have reported a case of DEK:: AFF2 SCC involving the lacrimal sac and summarized findings regarding this novel entity through literature search.

Abstract No.: 200072

Poster No.: -P018 Panel No.: P018

Von Hippel-Lindau (VHL) syndrome with bilateral Orbital Hemangioblastoma: a case report

First Author: Clarice SU
Co-Author(s): Andre MA, Hunter YUEN

Purpose:

Hemangioblastomas are rare benign vascularized tumors of the central nervous system commonly found in the cerebellum and spinal cord. While the majority occur sporadically, the remaining are associated with Von Hippel-Lindau (VHL) syndrome. Orbital hemangioblastomas are extremely rare, more strongly associated with VHL syndrome, and usually unilateral. Here, we report a case of bilateral orbital hemangioblastoma associated with VHL syndrome.

Methods:

Demographics and data on clinical presentation, investigations, treatment, and latest follow-up were collected and summarized.

Results:

A 34-year-old woman with bilateral blindness since childhood presented to our center with bilateral protruding orbital mass, pain and swelling for several months. A diagnosis of VHL was previously made in childhood. Pre-operative magnetic resonance imaging (MRI) showed bilateral enlarged globe with heterogenous internal signal and signal voids. Ultrasound showed bilateral eyeballs involved with solid growths and internal vascularity. Bilateral evisceration and orbital mass excision was performed successfully. The pathologic diagnosis was bilateral orbital hemangioblastoma.

Conclusions:

This is the first reported case of bilateral orbital hemangioblastoma in the setting of VHL.

Abstract No.: 200264

Poster No.: -P019 Panel No.: P019

Ectopic Lacrimal Gland in Lower Palpebral Conjunctiva: A Rare Case

First Author: Precious Gennelyn Gean UNTALAN

Co-Author(s): Kelvin Kam Lung CHONG

Purpose:

To present an atypical case of ectopic lacrimal gland.

Methods:

Choristomas are tissue anomalies characterized by cells not normally found at the involved site. A 67year old female, presented with a 3-month painless, multi lobular cystic lesion over her right lower palpebral conjunctiva. Patient denied any immediate past history of trauma or insect bite to said area. On examination, there were multi lobular cystic lesion measuring H5mm by W1.5mm over the lateral side of the lower palpebral conjunctiva of her right eye. A clinical impression of right lower lid mass, to consider granuloma, rule out malignancy was made at that time; and was then advised to undergo excision and biopsy. Intraoperatively, the lesion was excised with the underlying palpebral conjunctiva and tarsus. Amniotic membrane graft was placed to reconstruct the defect.

Results:

Histopathologic evaluation revealed a mix of ulcerated squamous cells with sebaceous units and lobules of serous acini, consistent with lacrimal gland tissue and chalazion. The patient would be closely followed up for recurrences and other post operative complications.

Conclusions:

Theories offered to explain ectopic lacrimal gland occurrence include aberrant implantation of embryonic cells destined to differentiate into lacrimal gland and aberrations during closure of fissures and sutures. This case was quite atypical based on the literature review for being the first case reported to be in the palpebral conjunctiva. From our review, 81% of ectopic lacrimal gland tissues were seen on the temporal epibulbar conjunctiva, and some were found on eyelids, bulbar, limbus, orbits and intraocular tissues.

Abstract No.: 200055

Poster No.: -P020 Panel No.: P020

Lacrimal sac lymphoma - report of a case and review of literature

First Author: On Ying Michelle YUEN

Co-Author(s): Matthew LAM

Purpose:

Lacrimal sac lymphoma is rare and this may be a primary disease or secondary to systemic lymphoma metastasis. It accounts for 6%-13% of all lacrimal sac malignancies and is considered as a major type of non-epithelial lacrimal sac malignant tumor. A literature review of lacrimal sac lymphoma is presented.

Methods:

Interventional case report

Results:

A 51-year-old male presented with a soft tissue mass arising from the lacrimal sac with right eye epiphora. Computed tomography scan showed an irregular soft tissue mass over the right lacrimal sac region. Incisional biopsy was performed and revealed malignant lymphoma. The patient was then referred to oncologist for system work up and treatment.

Conclusions:

Non-epithelial malignant tumors of the lacrimal sac are rare and lacrimal sac lymphoma is one of the major subtype. Systemic evaluation is important and co-management with oncologists is required. Ophthalmologists should aware the presentation of lacrimal sac tumors.

Abstract No.: 200243

Poster No.: -P021 Panel No.: P021

Iatrogenic central retinal artery occlusion after collagen-stimulation filler injection

First Author: Shui King TSOI

Co-Author(s): Hunter YUEN

Purpose:

Iatrogenic central retinal artery occlusion (CRAO) is a rare but devastating complication following cosmetic filler injections. The injury is due to differences between the injection and arterial pressures causing filler to move against blood flow from terminal branches to the, origin of the central retinal artery. We report a case of developing retinal artery occlusion after collagen-stimulation filler injection.

Methods:

A case report.

Results:

A 44-year-old woman with good past health experienced sudden, painful vision loss in the right eye shortly after receiving poly-D,L-lactic acid (PDLLA), a collagen-stimulation filler injection, to the glabellar region. Her best-corrected visual acuity in the right eye dropped to, hand movement with a right reverse afferent pupillary defect. Fundus examination showed multiple filler embolus in retinal arteries and marked macular edema. Spectral-domain optical coherence tomography revealed severe retinal edema. Despite prompt aggressive, management of the condition with ocular massage, topical timolol eyedrops, and intravenous diamox, the patient suffered permanent visual loss. The patient's visual acuity in the right eye was light perception after receiving a few cycles of hyperbaric oxygen therapy within two months after the incident.

Conclusions:

CRAO following cosmetic filler injections is a rare but devastating complication. This case highlights the importance of careful technique, vascular anatomy awareness, and preparedness for managing this complication during cosmetic filler procedures.

e-poster Abstract No.: 200119

Benchmarking large language models performance in question-answering for thyroid eye disease and evidence-based enhancement by a new pipeline.

First Author: Wai Chak CHOY

Co-Author(s): Carmen Km CHAN, Carol CHEUNG, Wang Yee CHU, Kenneth LAI, Calvin Cp PANG, Clement Cy THAM, Wilson YIP, Alvin L. YOUNG, Hunter YUEN, Kelvin Kl CHONG

Purpose:

Previous researches has reported the suboptimal performances of large language models in responding to medical questions. A customised framework (EyeLM01) has been designed to address hallucinations in question-answering. We aimed to benchmark base models' performances in answering questions on thyroid eye disease, and their potential improvement with EyeLM01 implementation.

Methods:

We collected frequently asked questions for thyroid eye disease from 100 websites. Key topics on risk factors, presentation, diagnostics, and management were identified by topic modelling. PubMed and EyeWiki articles were incorporated to the EyeLM01 framework.,2 independent reviewers evaluated the performance of 2 up-to-date base models (Gemini-1.5-pro and GPT-4o) regarding accuracy, comprehensiveness, and organisation on a 5-point scale. T-test and chi-square test were employed to evaluate the performance.

Results:

Enhancement was not noted for model accuracy (Gemini: P=0.7378, GPT: P=0.8426) Both Gemini (estimate=3.60 vs 4.75, P<0.0001) and GPT (estimate=3.65 vs 4.95, P<0.0001) demonstrated significant improvement in comprehensiveness. We noted both Gemini (estimate=4.10 vs 4.85, P=0.0013) and GPT (estimate=4.20 vs 4.95, P<0.0001) showed significant improvement in organisation. EyeLM01 enhanced GPT-4o outperformed the other models (accuracy=4.85, P=0.6330; comprehensiveness=4.95, P<0.0001; organisation=5.00, P<0.0001)

Conclusions:

Baseline large language models were able to deliver accurate responses. The implementation of EyeLM01 boosted the comprehensiveness and organisation of responses. By including up-to-date findings from synchronising literature and other credible information outlets, evidence-based response generation for safer model-assisted practice would be possible.

e-poster Abstract No.: 200134

Efficacy of Topical Tranexamic Acid on Operative Bleeding in Endoscopic Endonasal Dacryocystorhinostomy: A Multi Center, Double masked, Prospective, Randomized Clinical Trial

First Author: Precious Gennelyn Gean UNTALAN
Co-Author(s): Kelvin Kam Lung CHONG

Purpose:

To determine the hemostatic efficacy of topical Tranexamic Acid (TXA) during Endoscopic Endonasal Dacryocystorhinostomy (EEDCR).

Methods:

This is a multi-center, prospective, randomized clinical trial (RCT) that will include 70 patients with Primary Acquired Nasolacrimal Duct Obstruction (NLDO) who will undergo EEDCR. Patients will be randomly assigned into two groups; TXA or Normal Saline Solution (NSS) treatment. All surgeries and regional blocks were performed by experienced Orbit and OculoPlastic surgeons. One surgeon per hospital, total of 4 surgeons. All standard Endoscopic EEDCR were performed with a video camera system attached to a rigid 4mm endoscope. For intraoperative bleeding, the neuropatty soaked with either the treatment or control solution was applied for 2 minutes. Additional measures of hemostasis were all noted. The surgeon's assessment of surgical field and intraoperative blood loss will be the primary outcome measures.

Results:

We believe that there is a significant difference between the two groups in terms of surgical field quality and intraoperative blood loss.

Conclusions:

According to previous clinical trial, the combination of topical TXA and Epinephrine notably decrease intraoperative blood loss in External Dacryocystorhinostomy. Our study will be the first RCT to determine the hemostatic effect of pure topical TXA for EEDCR with the benefit of reducing adverse reactions.

e-poster Abstract No.: 200143

A review of tranexamic acid use in eyelid surgery: efficacy, safety, and research gaps

First Author: Mark Joseph LAGAO
Co-Author(s): Kelvin Kam Lung CHONG

Purpose:

To review the efficacy, safety, and applications of tranexamic acid (TXA) in eyelid surgery, and to identify gaps in the current research.

Methods:

A literature review was performed using databases such as PubMed, and Google Scholar. Keywords included ‘tranexamic acid,’ ‘eyelid surgery,’ ‘blepharoplasty,’ and ‘hemostasis.’ Studies were selected based on relevance, study design, and publication date.

Results:

Eyelid surgery, both functional and cosmetic, is generally safe but it carries a risk of bleeding, which can prolong surgery, postoperative hematoma formation, and delay in wound healing. Established hemostatic procedures (e.g., electrocautery, laser, and, manual pressure) have limitations like tissue damage, thermal injury, and insufficient bleeding control. TXA, an antifibrinolytic agent, is being explored as alternative hemostatic method. The use of systemic and subcutaneous TXA has been shown to decrease bleeding during the surgical procedures, leading to better visualization thereby improving surgical precision. It was also shown to reduce the incidence of postoperative hematoma formation and promote faster wound healing. Studies on eyelid surgery on the use of TXA is limited. There is only one randomized control trial study on subcutaneous TXA in blepharoplasty. Some studies on the topical application of TXA are available showing positive hemostatic results post operatively, but there is none available for eyelid surgery.

Conclusions:

The lack of research on the use of topical TXA in particular eyelid surgery may limit its application in oculoplastic procedures. A randomized controlled trial is needed to establish the efficacy and safety of topical TXA in this context.

e-poster Abstract No.: 200145

Diagnostic Discrepancy: The Role of Histopathology in Confirming Lobular Capillary Hemangioma Presenting as a Venous Lesion

First Author: Mark Joseph LAGAO

Co-Author(s): Karen CHAN, Kelvin Kam Lung CHONG, Kenneth LAI

Purpose:

To present a case where clinical and imaging findings suggested a venous lesion, but histopathological examination confirmed a lobular capillary hemangioma.

Methods:

Clinical and surgical management of a 12 years old male who has no significant past medical or ocular history presented with a non-painful, bleeding mass on his left lower eyelid. The mass had been present for over a month. The bleeding was noted to occur intermittently but with spontaneous cessation. Best-corrected visual acuity was 20/20 on both eyes. Slit-lamp examination revealed a 5mm x 6mm reddish-blue, pedunculated, movable, non-pulsatile, Valsalva negative vascular mass on the medial conjunctival palpebra of the left lower eyelid upon eversion. Anterior segments of both eyes are normal and there was no proptosis nor eye motility deficit. Magnetic resonance imaging (MRI) T1 revealed a well circumscribed nodule at the medial aspect of the left lower eyelid with homogenous contrast enhancement and no abnormal dilatation on T2.

Results:

The patient underwent complete surgical excision of the lesion. Contrary to the clinical and radiological findings, histopathological examination revealed the lesion to be a lobular capillary hemangioma. At four weeks post-operative follow-up, the patient had a stable outcome.

Conclusions:

This case demonstrates a discrepancy between clinical and imaging findings and the histopathologic diagnosis. This case underscores the critical role of histopathological analysis in definitive diagnosis of lobular capillary hemangioma presenting as a venous lesion.

e-poster Abstract No.: 200150

Cases Series: Intraorbital Foreign Body

First Author: Strathan CHUN
Co-Author(s): Pui Fan LAM, Man Hin LUI, Ngai YANG

Purpose:

To evaluate the clinical course and outcome of deep seated intra-orbital organic foreign bodies

Methods:

Single case report with a retrospective case series

Results:

We present a case of delayed presentation of partially-treated right intra-orbital wooden foreign body injury. A 56 years' old male with good past health who presented to the hospital in Malaysia with facial injury by tree branch followed by syncopal fall. He had an incomplete removal of intraorbital foreign body during initial surgery in Malaysia which was then further complicated by orbital cellulitis, raised intra-ocular pressure and optic neuropathy. Two further surgeries were later performed in Hong Kong in an attempt to remove all intraorbital foreign bodies. The prolonged course of disease controlled by extended duration of high-dose broad spectrum antibiotics and repeated surgical exploration, resulted in loss of vision in the same eye.

Conclusions:

Generally, early diagnosis, management, and extraction of the foreign body greatly influence the outcome. However, it is crucial to weigh the benefits versus risks. Furthermore, imaging modalities are particularly useful in determining the location and composition of intra-orbital foreign body involved as this would affect the management plan of the patient. Overall, the prognosis depends on nature of injury and timeliness of diagnosis/interventions. The best outcome in managing orbital foreign bodies will be achieved by a thorough pre surgical work up which includes evaluation of clinical signs and symptoms, deliberate use of different imaging modalities and to plan an appropriate surgical approach.

e-poster Abstract No.: 200189

A Randomized Controlled Trial on the Efficacy and Safety of Topical Tranexamic Acid for Hemostasis in Eyelid Surgery: A Research Protocol

First Author: Mark Joseph LAGAO

Co-Author(s): Karen CHAN, Kelvin CHONG

Purpose:

The study aims to evaluate the efficacy and safety of topical tranexamic acid (TXA) as a hemostatic agent in eyelid surgery. Specifically, the research will investigate whether topical TXA is a non-inferior alternative to a control in reducing intraoperative bleeding and improving postoperative outcomes in patients undergoing elective bilateral eyelid surgery.

Methods:

The study design is a prospective, randomized, double-masked split-faced controlled trial. A total of 70 participants (140 eyelids) undergoing elective bilateral eyelid surgery will be recruited and randomly assigned to either the intervention group (topical TXA) or the control group (normal saline). The intervention involves soaking gauze strips in a 25 mg/ml solution of TXA, while the control group will use normal saline (0.9%). Primary outcomes include time to achieve hemostasis, total operating time, intraoperative bleeding, cumulative cautery time, and surgeon satisfaction. Secondary outcomes include postoperative bruising, edema, pain scores, patient satisfaction, and complications. Descriptive statistics and group comparisons will be conducted using t-tests or Wilcoxon rank-sum tests.

Results:

The expected results are that TXA will significantly reduce intraoperative bleeding, leading to shorter operating times and improved surgeon satisfaction compared to the placebo. Additionally, TXA is expected to reduce postoperative complications such as bruising and edema, with higher levels of patient satisfaction.

Conclusions:

If the results confirm the hypothesis, topical TXA could be adopted as a alternative hemostatic agent in upper blepharoplasty, offering enhanced surgical outcomes and reduced postoperative complications compared to conventional methods.

e-poster Abstract No.: 200191

A Pilot Study on the Feasibility and Outcomes of Small-Incision Medial Browpexy Combined with Direct Lateral Browplasty for Male Brow Ptosis: A Research Protocol

First Author: Mark Joseph LAGAO
Co-Author(s): Karen CHAN, Kelvin CHONG

Purpose:

To evaluate the feasibility, safety, and preliminary outcomes of small-incision medial browpexy combined with direct lateral browplasty in male patients with brow ptosis.

Methods:

This prospective, unmasked interventional case series will involve 16 male patients with brow ptosis. Participants will undergo a combined small-incision medial browpexy and direct lateral browplasty. Baseline brow position and symmetry will be documented with standardized photographs, and patient satisfaction will be measured pre-operatively. Post-operative follow-up will occur at 1 week, 1 month, 3 months, 6 months, and 12 months, with outcomes including brow position, symmetry, patient satisfaction, and complication rates. Descriptive statistics, paired t-tests, repeated measures ANOVA, and McNemar's test will be used to analyze the data.

Results:

The study will evaluate improvements in brow position and symmetry, patient satisfaction, and the incidence of complications such as wound infections, hematoma, brow asymmetry, and scarring.

Conclusions:

This study aims to provide preliminary evidence on the feasibility and safety of small-incision medial browpexy combined with direct lateral browplasty in male patients. Findings from this pilot study will inform the potential for larger-scale studies and future clinical practice.

e-poster Abstract No.: 200258

Management of Thyroid Eye Disease and Complications in Hong Kong: a Territory-wide, Epidemiological study of 140,771 Autoimmune Thyroid Disease Patients from the Hospital Authority Data Collaboration Laboratory

First Author: Wai Chak CHOY

Co-Author(s): Fatema ALJUFAIRI, Carmen CHAN, George Pak Man CHENG, Carol CHEUNG, Kelvin Kam Lung CHONG, Xiao Yan HU, Kenneth LAI, Alan Chun Hong LEE, Kam Pui LEE, Jason Chiu Ming NG, Calvin Cp PANG, Jake SEBASTIAN, Clement Cy THAM, Han WANG, Martin Chi Sang WONG, Samuel Yeung Shan WONG, Wilson YIP, Alvin L. YOUNG, Hunter YUEN

Purpose:

Thyroid eye disease (TED) is the commonest orbital disease worldwide. We explored the current management approach and outcomes for moderate-to-severe TED (M2STED) in Hong Kong.

Methods:

Clinical information for 140776 AITD patients in 2000-2020 was retrieved from the territory-wide Hospital Authority Data Collaboration Laboratory, among which 7476 developed M2STED defined by disease code or compatible treatments. Comorbidities, treatment and follow-up information of AITD patients were extracted. Associations were analysed with logistic regression and linear regression where appropriate.

Results:

We identified 140771 AITD patients with median age and follow-up of 50.8 years old and 9.2 years respectively. M2STED cases initially managed by general practitioners were associated with longer delay. (beta=0.46, CI= 0.20-0.72, P=0.0011) There were increasing use of pulse steroid versus oral steroid after 2010 (beta=0.73, CI=0.20-1.26, P-0.0129). The use of pulse steroid was associated subsequent use of Duratears (OR=5.57, CI=5.30-5.86, P<0.0001) and Systane drops (OR=3.22, CI=3.06-3.39, P<0.0001). That of orbital radiotherapy was associated with use of Solcoseryl (OR=8.32, CI=7.31-9.45, P<0.0001) and Dorzolamide (OR=4.77, CI=3.84-5.87, P<0.0001). Orbital decompression was associated with use of Duratears (OR=6.58, CI=6.03-7.19, P<0.0001) and Timolol (OR=3.36, CI=3.08-3.87, P<0.0001) Increaased cycles of pulse steroid was associated with increased odds for phacoemulsification (OR=1.22, CI=1.20-1.25, P<0.0001) and laser pan-retinal photocoagulation (OR=1.36, CI=1.24-1.50, P<0.0001).

Conclusions:

This is one of the largest epidemiological studies with the longest follow-up providing contemporary statistics on management of TED. Our findings confirm change in management trends and long-term treatment complications for commonly used therapies in management of moderate-to-severe TED.

Abstract No.: 200081

Poster No.: -P009 Panel No.: P009

Impact of Infantile Esotropia on Quality of Life: A Comparative Study of Children Aged 5 to 17 Years

First Author: Waheeda Azwa HUSSEIN

Co-Author(s): Sarimah ABDULLAH, Jemaima CHE HAMZAH, Norul Badriah HASSAN, Shatriah ISMAIL

Purpose:

To compare the quality of life between children with infantile esotropia and normal children aged 5 to 17 years

Methods:

A prospective study was conducted from September 2018 to June 2019. Children with infantile esotropia aged 5 to 17 years old attending the Ophthalmology Clinic, Hospital Universiti Sains Malaysia were recruited. Normal children aged 5 to 17 years old were selected from three schools. Quality of life was measured using the Infantile Esotropia Quality of Life Questionnaire. The comparison of quality of life was analysed using the analysis of the covariance test.

Results:

A total of 126 children with infantile esotropia and 126 normal children completed the study. There was a statistically significant difference between the mean total scores in children with infantile esotropia and normal children for the age group 5 to 8 years old (23.03 (17.13,28.92), $F(1,122) = 59.73$, $p < 0.001$, and for age group 9 to 17 years old (10.59 (4.89, 16.29), $F(1,120) = 13.52$, $p<0.001$.

Conclusions:

Children with infantile esotropia had lower quality of life compared to normal children. It is important to create awareness regarding the psychosocial and functional impact of infantile esotropia and to assure that the children receive early intervention.

Abstract No.: 200089

Poster No.: -P010 Panel No.: P010

Longitudinal Observation of Bruch's Membrane Opening-Minimum Rim Width in Children

First Author: Yi LI

Co-Author(s): Guy CHEN, Ka Wai KAM, Calvin Cp PANG, Clement Cy THAM, Jason C YAM*, Alvin L. YOUNG, Xiujuan ZHANG, Yuzhou ZHANG

Purpose:

To evaluate longitudinal changes in Bruch's membrane opening-minimum rim width (BMO-MRW) and its associated factors among school children.

Methods:

In this population-based study, 740 children aged 6-8 years received comprehensive ophthalmologic examinations at baseline and 3-year follow-up visits. Participants were divided into persistent non-myopia (spherical equivalent refraction [SER] ≥-0.5 diopter [D] at baseline and follow-up), newly-developed myopia (SER ≥-0.5D at baseline and SER≤-0.5 D during the follow-up), and persistent myopia (SER ≤-0.5 D at baseline and follow-up) groups according to their refractive status. Global and sectoral BMO-MRW, retinal nerve fiber layer (RNFL) thickness, Bruch's membrane opening (BMO) area, and optic disc area were all acquired using spectral-domain optical coherence tomography (SD-OCT).

Results:

The 3-year follow-up visit revealed a significant increase in BMO-MRW across all sectors, with the average global BMO-MRW changing from 339.32±51.71μm to 361.30±57.82μm. Children in persistent myopia and newly-developed myopia groups showed a significantly faster rate of BMO-MRW growth in all sectors compared to the persistent non-myopia group (all $P<0.001$). In the multivariate linear regression analysis, global BMO-MRW changes over 3 years significantly increased with axial length elongation ($\beta=11.363$, $p<0.001$), BMO area enlargement ($\beta=40.580$, $p<0.001$) and RNFL thickness growth ($\beta=2.865$, $p<0.001$), but decreased with optic disc area enlargement ($\beta=-51.827$, $p<0.001$).

Conclusions:

Global and sectoral BMO-MRW increased over 3 years among school-aged children. BMO-MRW growth was positively correlated with axial length growth, BMO area enlargement, and RNFL thickness growth, whereas negatively correlated with optic disc area change.

Abstract No.: 200278

Poster No.: -P011 Panel No.: P011

Safety and Efficacy of Melphalan as an Intravitreal Chemotherapy for Retinoblastoma: A Systematic Review and Meta-Analysis

First Author: Salma FIRDAUS

Co-Author(s): Alif LAKSONO

Purpose:

Eye preservation and tumor control in patients with retinoblastoma seeding are challenging. Intravitreal chemotherapy melphalan offers an alternative salvage therapy for retinoblastoma with persistent or recurrent vitreous seeding as it aims to achieve higher concentrations within the tumor and minimize systemic side effects. This study aims to evaluate the efficacy and safety of intravitreal chemotherapy melphalan in the treatment of retinoblastoma when used with other treatments before or concurrently.

Methods:

Literature search was conducted in PubMed, EMBASE, and Web of Science.
Meta analysis was performed by using Revman. Studies reporting outcomes and complications of intravitreal chemotherapy melphalan for retinoblastoma would be included.

Results:

A total of twenty studies involving 831 patients and 872 eyes were analyzed. The overall globe salvage rate was 78.7% (547/697 eyes, 0.75 [95% CI: 0.53-0.89]) for patients treated with intravitreal melphalan across seventeen studies. Extraocular metastasis occurred in 2.4% of cases (15/620 patients, 0.06[95% CI: 0.00-0.54]) from sixteen studies. Mortality data were limited, with two studies reporting a total of 12 deaths. Significant ocular complications were retinal toxicity (62%), posterior synechiae (17%), anterior uveitis (14%), retinal hemorrhage (12%), phthisis bulbi ± hypotony (10%), anterior segment toxicity (8%), chorioretinal atrophy (6%), vitreous hemorrhage (5%). Limited information were available regarding systemic complications

Conclusions:

intravitreal chemotherapy melphalan showed promising results that are comparable to other therapeutic options. Moreover, the risk of extraocular tumor dissemination appears to be very low. intravitreal chemotherapy melphalan offered an additional therapeutic option for the preservation of eyes, as a second-line treatment in the management of retinoblastoma.

Abstract No.: 200163

Poster No.: -P012 Panel No.: P012

A Case Series of Retinoblastoma with Atypical Presentation

First Author: Wency TANG

Purpose:

Retinoblastoma is a rare and aggressive form of eye cancer that primarily affects young children. While the majority of retinoblastoma cases present with the classic symptoms of leukocoria and strabismus, atypical presentations can sometimes occur. This case series describes three unusual presentations of retinoblastoma in young children.

Methods:

A case series of retinoblastoma in 3 children with varying atypical clinical presentation.

Results:

The first case involved a 7-year-old girl who initially presented with painless blurring of vision and was found to have vitritis. The second case was a 1-month-old girl who presented with acute orbital cellulitis. The third case describes a 3-year-old boy who presented with acute periorbital swelling and erythema, together with total hyphema and increased intraocular pressure. Careful clinical evaluation and imaging led to diagnosis of RB in all three cases

Conclusions:

Prompt recognition of these atypical clinical presentations and appropriate management were crucial in ensuring timely diagnosis and initiation of treatment. These cases highlight the importance of maintaining a high index of suspicion for retinoblastoma, even when the initial symptoms deviate from the classical presentation. Early diagnosis and multidisciplinary care are essential for improving outcomes in children with this rare and potentially life-threatening malignancy.

e-poster Abstract No.: 200212

OCT plays an important role in functional visual disorders in Children: insights from 27 Cases

First Author: Di CAO
Co-Author(s): Chunxia PENG, Wei SHI

Purpose:

Functional visual disorders (FVD) in children are commonly recognized by ophthalmologists but are difficult to diagnose due to poor cooperation. This study aims to analyze the characteristics of FVD in children using optical coherence tomography (OCT) to rule out retinal and optic nerve structural abnormalities and improve diagnostic accuracy.

Methods:

A retrospective study was conducted on 27 cases of FVD in children. After the peripapillary retinal nerve fiber layer (pRNFL) and macular structure were evaluated as normal by OCT, “vision recovery” was assessed using malingering tests, following a standardized diagnostic workflow.

Results:

The 27 patients ranged in age from 5 to 15 years (median age: 7), with 12 boys and 15 girls. Their best-corrected visual acuity (BCVA) ranged from no light perception (NLP) to 0.7, and the duration of visual loss ranged from 0.3 to 18 months. Patients with visual loss longer than 2 months were categorized into Group A (16 cases), while those with a duration of less than 2 months were categorized into Group B (11 cases). After OCT confirmed normal pRNFL and macular structure, all patients in Group A and most in Group B showed vision recovery following malingering tests. The remaining cases in Group B experienced vision recovery after a second OCT assessment, 2 months later, confirmed no structural abnormalities.

Conclusions:

A standardized diagnostic workflow based on OCT assessments can rapidly and accurately confirm FVD in children. OCT is a valuable tool for diagnosing FVD in pediatric patients

e-poster Abstract No.: 200241

Misdiagnosis of Optic Nerve and Retinal Diseases as Amblyopia in Our Hospital

First Author: Ruimei LI

Purpose:

Clinical observations indicate that a significant number of pediatric patients with optic nerve and retinal diseases have been misdiagnosed as amblyopia. This report summarizes various cases referred to our department from the pediatric clinic under the diagnosis of amblyopia, aiming to share experiences and lessons learned to minimize such misdiagnoses and enhance clinicians' understanding of proper diagnosis and treatment for amblyopia.

Methods:

Patients in our pediatric ophthalmology department who underwent prolonged treatment for amblyopia without improvement were subsequently examined by our team, revealing underlying conditions responsible for their visual impairment. Through case reports, we aim to highlight instances where children were misdiagnosed with amblyopia but actually had other ocular diseases, including hereditary dominant optic atrophy (DOA), cone-rod dystrophy, Stargardt disease, congenital stationary night blindness, among others.

Results:

1. Amblyopia is a common eye condition that severely impacts children's vision; often unexplained visual decline is incorrectly attributed to this disorder leading to misdiagnosis and inappropriate treatment.,2. In most cases diagnosed as amblyopia, clinicians did not initially consider the need to rule out organic retinal diseases prior to treatment.

Conclusions:

1.Amblyopia is primarily a diagnosis of exclusion; thorough examination of the retina and optic nerve is essential.,2. For patients undergoing standard treatments for amblyopia who experience no improvement or even deterioration in vision, further investigation into potential causes should be conducted; targeted selection and enhancement of auxiliary examinations can reduce rates of misdiagnosis.,3. For children presenting with low vision, it is crucial to utilize multiple diagnostic modalities including advanced imaging techniques and genetic testing for accurate diagnoses.,4. Clinicians should improve their awareness regarding rare ocular diseases affecting children's retinas.,5. The subdivision into subspecialties may lead clinical practitioners to lack comprehensive knowledge about various conditions; therefore, enhanced collaboration through interdepartmental referrals and consultations is necessary.

e-poster Abstract No.: 200263

Association of Long-term Retinopathy of Prematurity Visual Outcomes with Nutritional Intakes: A Global Ecological Study

First Author: Wai Chak CHOY

Co-Author(s): Guy CHEN, Ka Wai KAM, Calvin Cp PANG, Clement Cy THAM, Emily WONG, Jason C YAM*, Yuzhou ZHANG

Purpose:

Retinopathy of prematurity (ROP) is one of the leading causes of childhood preventable blindness. We aim to analyze the association of macro-nutrients and micro-nutrients intake with ROP visual outcomes.

Methods:

We retrieved population-level statistics for ROP from 1990-2021 for 204 countries from the Global Burden of Disease 2021 database. Prevalence rate of ROP cases with moderate, severe, and blinding visual impairment was extracted. Nutritional factors were extracted from the Global Dietary Database (GDD), with estimated median level of population-intake for 47 food and beverages, macronutrients, and micronutrients stratified by age, sex, education, and urbanicity. Exposure level for children was used. The association of nutritional intake and ROP visual outcomes was calculated by multivariable linear regression.

Results:

The 31-year dataset covered 2,050,407 ROP cases in 2021. Among micronutrients, higher exposure to vitamin B2 (beta=-11.05, CI=-12.80--9.31, P<0.0001), vitamin B6 (beta=-5.34, CI=-7.20--3.47, P<0.0001) and iodine (beta=-3.24, CI=-4.40--2.07, P<0.0001) and lower exposure to selenium (beta=8.21, CI=6.83-9.60, P<0.0001) and zinc (beta=4.93, CI=3.69-6.16, P<0.0001) were associated with lower prevalence rate. For macronutrients, higher seafood omega 3 (beta=-5.65, CI=-6.72--4.57, P<0.0001) intake and lower plant omega 3 (beta=2.26, CI=1.17-3.35, P<0.0001) intake were associated with lower prevalence rate. For blindness, higher median intake of seafood omega 3 (beta=-2.27, CI=-2.77--1.77, P<0.0001) and lower intake of added sugar (beta=1.80, CI=1.24-2.35, P<0.0001) was associated with lower prevalence rate.

Conclusions:

The current study provided added evidence of known and new nutritional risk factors for outcomes of ROP. Further animal and individual-level exposure association studies are needed to confirm the identified patterns.

Abstract No.: 200250

Poster No.: -P001 Panel No.: P001

Myopia and its associations between axial length and Optical Coherence Tomography Angiography biomarkers

First Author: Jessica Wing Ka LAU

Co-Author(s): Nicholas S.K. FUNG, Ming Ming ZHU

Purpose:

To determine the associations between axial length (AL) and optical coherence tomography angiography (OCTA)-based eye-related parameters.

Methods:

A prospective cross-sectional study of the right eye of 6953 individuals between the ages 50 and 97, with a range of AL from 19.1 to 31.7 mm was performed. Central subfield thickness (CST), foveal avascular zone (FAZ) and mean vessel density (mVD) were measured by OCTA. Associations between OCTA-based parameters, eye-related and systemic-related parameters were assessed using one-way ANCOVA, multivariable linear regression analysis and multiple regression analysis.

Results:

AL and OCTA-based parameters were negatively correlated with age. Increased AL was associated with increased CST (ß=3.59), decreased FAZ (ß=0.02), and decreased mVD (ß=-0.4) (all p=0.000). Better best corrected visual acuity (BCVA) was associated with larger FAZ (ß=-0.07) and higher mVD (ß=-3.160) (p=0.002, p=0.000). Hypertension and diabetes mellitus correlated with increased mVD (ß=0.5) and decreased mVD (ß=-0.18) respectively (p=0.000, p=0.023).

Conclusions:

Increased AL is associated with lower mVD which may be a potential factor between myopia and poor BCVA.

Abstract No.: 200204

Poster No.: -P002 Panel No.: P002

A Case Series of Retinoblastoma with Atypical Presentation

First Author: Shaopeng YANG

Co-Author(s): Li HUANGDONG, Wei WANG, Ziyu ZHU

Purpose:

Retinal nerve fiber layer thickness (RNFLT) is a robust biomarker for cardiometabolic health, yet the biological underpinnings have remained unclear. We explored the potential of machine learning (ML)-aided plasma metabolomics in elucidating retinal–cardiometabolic connections.

Methods:

The study included 93,838 participants from the UK Biobank (UKB) and 1,618 participants from the Guangzhou Diabetic Eye Study (GDES) underwent optical coherence tomography scanning and metabolomics profiling. RNFLT metabolic fingerprints were identified by associating plasma metabolic biomarkers with RNFLT. The association and predictive value of these fingerprints and ML-aided models for linking death and cardiometabolic diseases (CMDs) were assessed across varying genetic susceptibility in fully withheld test sets.

Results:

Twenty-six metabolites were associated with RNFLT and most of them were linked with future mortality and CMD outcome (all FDR $P<0.05$), mediating a large proportion of the RNFLT-CMD association (e.g., 35.1% for T2D). UKB participants with ML-aided RNFLT metabolic states in the top 10% had a 2.84 (2.22–3.63) and 5.72 (3.24–10.11) times higher hazard ratio (HR) for all-cause and cardiovascular mortality compared to those in the bottom. Corresponding HRs were 21.77 (14.18–33.42) for T2D, 8.04 (5.15–12.54) for myocardial infarction, 5.15 (3.38–7.85) for heart failure, and 4.23 (2.40–7.44) for stroke. Integrating these metabolic fingerprints significantly enhanced the predictability and clinical utility for CMD outcomes across varying genetic susceptibility (all $P<0.05$), with performances comparable to those of the full metabolomics panel. These findings were replicated in the GDES cohort.

Conclusions:

This study provides a framework for deciphering retinal–cardiometabolic connections and suggests a role for RNFLT metabolic fingerprints in CMD pathogenesis.

Abstract No.: 200067

Poster No.: -P003 Panel No.: P003

Autoimmune retinopathy post-COVID vaccine

First Author: Yat Che Charlene CHAU

Co-Author(s): Noel Ching-yan CHAN, Chun-yue Andrew MAK

Purpose:

To report a case of autoimmune retinopathy following COVID vaccination

Methods:

A case report

Results:

A 30-year-old female with eczema and no family history of retinal dystrophies presented with rapidly progressive visual field (VF) constriction, photopsia and mild photophobia two weeks after the second dose of COVID vaccination (Pfizer-BioNTech). She was initially managed in the private sector as acute zonal occult outer retinopathy with oral steroids but experienced further subjective VF deterioration after the second dose of BioNTech vaccine and COVID infection. She presented to our centre one year after the onset of symptoms with marked VF constriction despite a preserved visual acuity of 20/16. Clinical examination including intraocular pressure, cup-disc ratio and colour vision was unremarkable except for mildly attenuated vessels on fundal examination. The optical coherence tomography (OCT) of the macula demonstrated outer retinal atrophy with preserved ellipsoid zone at the fovea. The fundus autofluorescence resembled the Robson Holder ring appearance. The full field electroretinogram showed flat scotopic and photopic responses, suggesting generalised rod-cone dysfunction. Carcinoma-associated retinopathy (CAR) panel was positive for antibodies against carbonic anhydrase II and Rab6. Other systemic workup was unremarkable. She was treated as non-paraneoplastic autoimmune retinopathy with systemic steroids. She is maintained on mycophenolate mofetil with no further VF loss.

Conclusions:

This is a rare case of non-paraneoplastic autoimmune retinopathy presenting with rapid progressive VF constriction in an unusual age group. OCT macula, electroretinogram and serology for anti-retinal antibodies may aid diagnosis. Immunosuppression using corticosteroids and non-alkylating immunosuppressive agents may halt but not reverse disease progression.

Abstract No.: 200059

Poster No.: -P004 Panel No.: P004

Bilateral complex chronic bullous central serous chorioretinopathy as the presenting feature of endogenous Cushing's syndrome from an ACTH-secreting pituitary adenoma: A case report

First Author: Hoi Wang LI

Co-Author(s): Shing Chak Jonathan CHENG, Timothy Pak Ho LIN, Simon SZETO

Purpose:

To describe the clinical and multimodal imaging features of a case with bilateral complex central serous chorioretinopathy (CSC) due to previously undiagnosed endogenous Cushing's syndrome from an adrenocorticotropin (ACTH)-secreting pituitary adenoma.

Methods:

N/A

Results:

A 37-year-old male presented with bilateral chronic CSC with inferior bullous exudative retinal detachment and subretinal fibrin formation. Optical coherence tomography (OCT) confirmed the presence of subretinal fibrin, serous pigment epithelial detachment (PED) and subretinal fluid (SRF). Fluorescein angiography (FA) revealed late leakage and indocyanine green angiography (ICGA) showed blockage from the subretinal fibrin and hyperdynamic choroidal circulation. Despite receiving bilateral half-dose photodynamic therapy (PDT) and multiple sessions of micropulse laser treatment over 8 months, there was persistent serous macular detachment in the right eye. On further examination, patient exhibited signs of Cushing's syndrome including moon face, hirsutism and central obesity. Biochemical test showed hypercortisolism due to elevated ACTH. A pituitary microadenoma was found on magnetic resonance imaging (MRI). Endoscopic transsphenoidal resection of pituitary microadenoma was performed and immunostaining confirmed an ACTH secreting microadenoma. The serous macular detachment resolved after surgery and there was no signs of CSC recurrence through 1 year.

Conclusions:

Our case report highlights the importance for ophthalmologists to actively look for signs of Cushing's syndrome in CSC patients to avoid delay in diagnosis, particularly in complex cases with bilateral presentation and poor response to available treatment. Prompt systemic workup of hypercortisolism and treatment of underlying cause is essential to prevent irreversible ocular and systemic morbidity.

Abstract No.: 200071

Poster No.: -P005 Panel No.: P005

Faricimab (Vabysmo) associated intraocular inflammation (IOI) leading to Aflibercept (Eylea 2mg) associated IOI needing systemic immuno-suppression: A Case Report from the United Kingdom

First Author: Ian YEUNG

Co-Author(s): Khaled ALKARMI, Bing Jie CHOW, Andrew KIM, Faye LEVINA, Andrea MONTESEL, Ella PRESTON, Angela REES, Amy RICHARDSON, Supawat TREPATCHAYAKORN, William TUCKER, Charlotte ZHENG

Purpose:

To describe a wet age related macular-degeneration (wet AMD) patient who developed Eylea-associated uveitis after Vabysmo-associated uveitis.

Methods:

Case Report

Results:

81 year-old Caucasian woman began left Eylea 2mg treat & extend protocol for a left vascular pigment epithelial detachment (PED) due to left wet AMD on 19/01/16. Until 16/11/22, this woman never had Eylea-associated uveitis. After left 46 Eyleas, it was not possible to extend past left 4-weekly Eylea, left vabysmos were initiated on 16/11/22. A left 4th 4-weekly vabysmo was done on 09/02/23. On 16/03/23 this woman had a left vabysmo-associated granulomatous anterior & intermediate uveitis, this had resolved by 06/04/23 with a left eye tapering Dexamethasone (Maxidex) regime. Left 4-weekly ranibizumab biosimilar (ongavias) were tried from 06/04/23, but the left wet AMD reactivated on left 4-weekly ongavia; left 4-weekly Eyleas restarted on 04/05/23. On 01/06/23, left Eylea-associated non-granulomatous anterior & intermediate uveitis was diagnosed. As left topical Dexamethasone therapy was ineffective, PO Prednisolone 40mg OD was started on 08/06/23. Left Eylea 2mg therapy was safely restarted under a PO Prednisolone 15mg OD tapering regime on 25/07/23. By 28/12/23. this woman was off all left eye uveitic therapy. By 08/08/24, this woman is safely back on left eye Eylea 2mg therapy with no left eye uveitic relapse.

Conclusions:

Although vabysmo-associated IOI is well described, this may be the 1st reported case of vabysmo associated IOI leading to Eylea-associated IOI. We suggest further study to investigate if faricimab & aflibercept share similar epitopic targets for the immune system.

Abstract No.: 200088

Poster No.: -P006 Panel No.: P006

Paediatric Uveitis - the uniqueness in clinical presentation and the efficacy of biologics

First Author: Mei Kwan YIU

Co-Author(s): Mary HO, Wilson YIP, Alvin L. YOUNG, Wing YUNG

Purpose:

To evaluate unique clinical characteristics of paediatric uveitis in our locality and treatment outcomes especially the efficacy of biologics.

Methods:

This was a retrospective cohort.

Results:

37 paediatric uveitis cases involving 67 eyes were included. Male-to-female ratio was 1:1.3. Mean age of uveitis onset was 11±3.7 (4-18). 81.1% cases suffered from bilateral uveitis. 75.7% cases are chronic uveitis. Nearly half of the cases (40.5%) presented with anterior uveitis. The most common uveitis diagnosis in our cohort was namely idiopathic. Unlike studies from other populations, the associated systemic conditions in this mostly Chinese cohort were Behçet's disease (8.1%), tubulointerstitial nephritis and uveitis (8.1%) and HLA-B27 associated uveitis (8.1%). Steroid response was common phenomenon, observed in 40.5% of cases. The most common complication was posterior synechiae (45.9%), followed by cataract (37.8%), glaucoma (27.0%), band keratopathy (18.9%) and macular oedema (13.5%). 3/37 patients encountered either first attack of uveitis or flare after receiving COVID-19 vaccine. 54.1% of patients required systemic steroid for disease control. The majority required steroid sparing immunotherapy, including Methotrexate (43.2%), Mycophenolate Mofetil (24.3%), Cyclosporine A (8.1%), Azathioprine (5.4%) and Tacrolimus (2.7%). Resistant cases required biologics including tumour necrosis factor alpha inhibitors (Adalimumab 32.4%, Infliximab 2.7%) and interleukin-6 inhibitors (Tocilizumab 2.7%).

Conclusions:

Clinical presentation of local paediatric uveitis differs from that in Caucasian populations. According to our experience, Behçet's disease, tubulointerstitial nephritis and uveitis and HLA-B27 associated uveitis were more often encountered than Juvenile Idiopathic Arthritis associated uveitis. Our report evaluated efficacy of immunomodulatory therapy and biologics in controlling uveitis and reducing ocular complications.

Abstract No.: 200131

Poster No.: -P007 Panel No.: P007

Are all Hemorrhagic PVDs the Same? Analysis of Patient Factors in Determining Risk of Retinal Tear after Hemorrhagic PVD

First Author: Dhruv SETHI

Purpose:

While 17% of symptomatic PVDs present with retinal tears, presence of vitreous hemorrhage increases the rates of retinal tears to 70%. Prior studies have assessed risk factors of tear development in non-hemorrhagic PVDs. We analyzed lens status, age, and presenting visual acuity in hemorrhagic PVDs to stratify risk of retinal tears.

Methods:

Retrospective cohort study of patients diagnosed with acute hemorrhagic PVD between 2013 and 2023. Exclusion criteria included lack of follow up, lack of data in chart, pre or co-existing retinal pathology, and presence of systemic diseases with ocular involvement such as diabetes or hypertension.

Results:

166 eyes met inclusion criteria out of 2217 patients. In eyes with mean initial VA of 20/40 or better, 26% (31/120) presented with retinal tears whereas those with worse than 20/40 VA, 43% (20/46) had tears (p=0.039). 43% (38/88) of patients below age 65 had tears on presentation compared to 18% (14/78) of patients above 65 (p=0.005). Pseudophakic patients were less likely to have tears on presentation compared to phakic patients (9 and 36%, respectively) (p=0.002).

Conclusions:

Our data demonstrates that presenting visual acuity, lens status, and age of presentation during an acute hemorrhagic PVD are statistically significantly correlated to the presence of retinal tears. This is a novel contribution to the literature as it indicates that certain populations may have an increased predilection to develop tears and in clinical context, may benefit from closer observation versus intervention to prevent vision threatening complications including tears progressing to detachments or need for surgical management.

Abstract No.: 200148

Poster No.: -P007 Panel No.: P007

Characteristics of multimodal fundus imaging in patients with IRVAN syndrome

First Author: Hai-yan WANG

Purpose:

To observe and analyze the multimodal fundus imaging features in patients with IRVAN syndrome

Methods:

A retrospective study. From 2019 to 2024, 6 patients (11 eyes) diagnosed IRVAN syndrome in Shaanxi Eye Hospital were included in the study. Of all, there were 1 male and 5 females with the mean age of (31.67±12.91) years. All patients underwent examinations including BCVA, slit lamp microscopy, indirect ophthalmoscopy, color fundus photography, FFA/ICGA, OCT and OCTA.

Results:

Color photos showed optic disc aneurysms (ODAs) in six eyes, retinal aneurysms (RAs) in three eyes. OCT revealed vitreous high reflective dots and epiretinal membrane (ERM) on optic disc in all eyes, and macular ERM in three eyes. FFA showed ODAs and RAs in nine eyes, local arterial leakage in three eyes, local venous leakage in eight eyes, non-perfusion area (NPs) in 11 eyes, and retinal neovascularization in three eyes. ICGA showed ODAs and RAs in 5 eyes; with ODAs in 4 eyes and RAs in 5 eyes on simultaneous FFA. OCTA revealed NVD in 2 eyes, and ODAs in 8 eyes; RAs in 2 eyes with no NVD, ODAs in eight eyes and RAs in 5 eyes on simultaneous FFA. During OCTA follow-up, new aneurysms appeared at the bifurcation of arteries with an increasing angle between them and NP area enlargement on FFA.

Conclusions:

Multimodal imaging can demonstrate characteristics of IRVAN syndrome, enlargement of artery angles at arterial bifurcations may predict formation of aneurysms and progression.

e-poster Abstract No.: 200091

Long-term Sequelae of CMV retinitis: a review of macular vasculature on OCTA

First Author: Po Yin WONG

Co-Author(s): Guy CHEN, Carol CHEUNG, Mary HO, Lawrence IU, Andrew MAK, Brelen MARTEN, Gabriel YANG, Alvin L. YOUNG

Purpose:

To evaluate the OCTA features of macular vasculature in patients with history of CMV retinitis.

Methods:

Patients with history of CMV retinitis managed in the Medical Retina / Uveitis Clinic in Prince of Wales Hospital, Hong Kong from 1 January 2011 to 31 December 2020 were identified from clinical electronic database. Normal patients were also recruited for comparison. Retinal imaging acquisition including OCT & OCT-A were obtained prospectively by swept source OCT-A (Topcon DRI) on both eyes of each patient. Quantitative analysis was done to evaluate parameters of vascular density (VD), skeleton density (SD), foveal avascular zone (FAZ) and macular choroidal thickness (MCT)

Results:

There was no statistically significant difference in mean VD, SD, area of FAZ, mean macular RNFL and mean MCT between the affected eyes and unaffected fellow eyes in unilateral CMV retinitis and also eyes from the control.

Conclusions:

In conclusion, parameters from OCTA were similar between affected eyes and unaffected eyes in patients with history of CMV retinitis and from the normal control.

e-poster Abstract No.: 200182

Clinical efficacy of conbercept injection on neovascular age-related macular degeneration under different levels of inflammation

First Author: Bo FU

Purpose:

The aim of the study was to evaluate the efficacy and safety of intravitreal injection of conbercept inpatients with neovascular AMD with different levels of inflammation.

Methods:

A total of 120 consecutive patients with neovascular AMD who underwent intravitreal injection of conbercept (3 injections per month + pro re nata (3 + PRN)) were included and stratified based on the intraocular level of high-sensitivity C-reactive protein (hs-CRP). The level of inflammation was defined as low, medium orhigh, based on the concentration of hs-CRP prior to injection. Before and after conbercept injections, best-corrected visual acuity (BCVA) and central retinal thickness (CRT) were compared, respectively. Moreover, cytokine markers as well as the frequency of injections and adverse events (AEs) were measured.

Results:

There were significant differences in BCVA and CRT between low, medium and high tertiles. Compared to the baseline, improved BCVA was observed, and CRT significantly declined after operation. The AEs were most observed in high tertiles. A significant decrease in vascular endothelial growth factor (VEGF), interleukin (IL)-6 and IL-8 was observed after 1year.

Conclusions:

The effectiveness of conbercept on neovascular AMD varies depending on the level of inflammation, which could be achieved by administering different injection frequencies at different levels of inflammation. Furthermore, conbercept is associated with reducing the level of inflammatory factors (IL-6 and IL-8) after intravitreal injection, which suggests that suppressing inflammatory response might contribute to the clinical efficacy of anti-VEGF treatment. Our results provided a novel mechanism for conbercept inpatients with neovascular AMD.

e-poster Abstract No.: 200186

Internal limiting membrane peeling versus inverted internal limiting membrane flap in treating large macular hole: a review of literature

First Author: Shannon SO

Co-Author(s): Chi Lik AU

Purpose:

To compare the outcomes of internal limiting membrane (ILM) peeling and inverted internal limiting membrane flap for the treatment of large macular holes (MH).

Methods:

PubMed, Embase, Medline databases were systematically searched for published articles with the keywords ‘macular hole’ AND ‘internal limiting membrane peeling’ AND ‘versus’ AND ‘flap’. Systematic reviews and meta-analysis were excluded; however, their reference lists were screened for relevant studies. Only primary studies were included. Studies on MH ≤400μm, myopic, traumatic, or retinal detachment MH were excluded. Mean age of patients, male-to-female ratio in patient group, MH diameter and follow-up period were extracted from studies. Pre- and post-visual acuity (VA) and closure rates were re-calculated after grouping all study subjects from each primary study.

Results:

13 studies with a total of 1011 eyes were included. 546 eyes were in the peel group and 465 eyes were in the flap group. The mean pre-op VA in peel group was logMAR 0.961 and mean post-op VA in peel group was logMAR 0.610. The mean pre-op VA in flap group was logMAR 0.975 and the mean post-op VA in flap group was logMAR 0.562. The number of eyes successfully closed by peel and flap were 419 (76.7%) and 435 (93.5%) respectively. A Chi-square test was performed for the closure success rate. The chi-square statistic is 54.0873, and p-value <0.00001.

Conclusions:

Combining data from different studies after reviewing available literature, ILM inverted flap has a higher closure rate for large non-myopic, non-traumatic MH than ILM peeling alone.

e-poster Abstract No.: 200210

Unilateral Vaso-Occlusive Lupus Retinopathy: a Rare Ocular Manifestation of Systemic Lupus Erythematosus

First Author: Fadel ASKARY

Co-Author(s): Devi Azri WAHYUNI

Purpose:

This case report aims to describe unilateral vaso-occlusive retinopathy in a 31-year-old female patient with a history of SLE, a rare condition with a high risk of vision loss.

Methods:

N/A

Results:

A 31-year-old female patient with a history of SLE presented with complaints of blurred vision in her left eye that had occurred for one month. Examination revealed a left eye visual acuity of 1/60. Examination revealed hard exudates, cotton wool patches, and flame-shaped hemorrhages in the left retina, as well as macular edema in the left eye. The patient was diagnosed with vaso-occlusive retinopathy and central serous chori-oretinopathy (CSCR) of the left eye. Retinal vasculopathy in SLE is triggered by immune complexes that cause blood vessel occlusion. Risk factors include elevated levels of anti-phospholipid antibodies (APLA) and anti-dsDNA, which may increase the risk of thrombosis. Treatment includes systemic corticosteroids and cyclosporine, as well as topical diclofenac sodium eye drops. The use of hydroxychloroquine was suspended to prevent complications of toxic retinopathy. After one month, the patient's vision improved to 6/60, and the macular condition also showed improvement. Good management of SLE is expected to continue to improve the patient's vision

Conclusions:

This case highlights the importance of early recognition and appropriate management of ocular manifestations of SLE to prevent vision loss

e-poster Abstract No.: 200281

One trouble follows another--A case report of binocular diplopia complicated with outer retinopathy

First Author: Haibo WANG

Purpose:

By introducing a case of binocular diplopia complicated with outer retinopathy, we can deeply understand and master the principle of treatment of this kind of disease.

Methods:

A case of binocular diplopia complicated with outer retinopathy was reported.

Results:

The patient was female. Double vision with right eyelid ptosis for 1 week. Previous: Hypertension for 6 years. Ophthalmic examination: OD: 0.8,OS:1.0. fundus: circular pigment changes were found in the peripheral fundus. The peripheral visual field defect on both eyes. OCT shows loss of the EZ and thinning of the retinal layer in the affected areas Auto Fluoresence showed hyper fluorescence. MRI and MRA. Neostigmine tested positive. Chest CT indicated a occupying space, considering a thymoma. Pathological report: thymoma, type B1, local B2. Admission diagnosis: myasthenia gravis, thymoma, outer retinopathy of both eyes (cancer-related retinopathy). The thymoma was surgically rescined. After the operation, bromopyristine tablets were administered orally for symptomatic treatment. The symptoms of ocular diplopia were stable and outpatient follow-up was performed.

Conclusions:

cancer-associated retinopathy (CAR) belongs to paraneoplastic syndrome involving ocular retinopathy and is rare in clinic. In this case, the patient presented with binocular diplopia, which was considered to be caused by myasthenia gravis by thymoma, and the pathology revealed that the thymoma was malignant. At the same time, the patient presented with binocular outer retinopathy. Cancer-related retinopathy due to malignant thymoma was considered. It should be distinguished from other outer retinopathy such as AZOOR, syphilis, intraocular lymphoma, etc.