External Disease / Cornea, Pathology / Intraocular Tumours

P01 | Karunkulärer Nävus bleu

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Hintergrund: Konjunktivale Nävi sind häufige benigne okuläre Tumoren. Die zweithäufigste Lokalisation nach der bulbären Konjunktiva ist die Karunkel. Blaue Nävi sind seltene konjunktivale Nävi (< 1 bis 3%) und treten häufiger bei Patienten über 50 Jahren auf. Aufgrund ihrer superfiziellen Lage in der Substantia propria der Konjunktiva - im Gegensatz zur tieferen Lokalisation in der Dermis der Haut - fehlt der Tyndall-Effekt, der diese Nävi blau erscheinen lässt. Deshalb können konjunktivale blaue Nävi in Abhängigkeit von der Tiefe der Lage schwarz, braun, grau oder blau erscheinen und damit mit anderen pigmentierten konjunktivalen Läsionen, wie nävozellulären Nävi, rassisch bedingter Melanose, primär erworbener Melanose oder Melanomen, verwechselt werden.

Anamnese und Befund: Eine 52-jährige Patientin stellte sich mit einer seit 2 Jahren bemerkten und subjektiv grössenprogredienten runden Hyperpigmentierung in der Karunkel am linken Auge vor.

Therapie und Verlauf: Es erfolgte die vollständige Exzision der karunkulären Läsion in Lokalanästhesie. In der histologischen Untersuchung stellte sich die Läsion als blauer Nävus ohne dysplastische oder maligne Veränderungen dar. Die immunhistologische Färbung für MelanA, welche spezifisch für Melanozyten ist und ermöglicht diese von pigmentierten Makrophagen zu unterscheiden, zeigte positive, atypiefreie Melanozyten innerhalb der starken Pigmentierung. Der postoperative Verlauf gestaltete sich komplikationsfrei.

Schlussfolgerungen: Bei einer grössenprogredienten pigmentierten Läsion in der Karunkel kann es sich um einen benignen Nävus bleu handeln, der jedoch klinisch nicht von anderen melanozytären Läsionen der Konjunktiva unterschieden werden kann. Mit der gesicherten histologischen Diagnose ist die klinische Prognose exzellent.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology

P02 | Pituitary macroadenoma. Fooling the ophthalmologist before giving him the role of the whistleblower.

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Purpose: To describe cases diagnosed with pituitary macroadenoma during the follow-up of their primary ocular pathologies.

Methods: Charts of patients followed in the Centre for Ophthalmic Specialised care for diverse pathologies and having subsequently developed a pituitary macroadenoma were retrieved. The primary pathologies were noted. The delay of the diagnosis after sufficiently compatible perimetric signs were available was calculated and the evolution after the neurosurgical intervention was reported.

Results: In total, from 2003 to 2020, 16/14966 (0.1%) pituitary macroadenoma patients were recorded. In 10 patients the disease was noted in their history. In 6 patients (2 females, 4 males) (0.04%) macroadenoma occurred during the follow-up of primary ocular pathologies. Mean age at first presentation was 65.16 ± 8.52 years. Primary pathologies included amblyopia (1) glaucoma (2) cataract (4) and uveitis (2). Mean delay from first suspicious visual field signs to diagnosis was 125 ± 207.93 days. All patients underwent one surgical treatment with or without radiotherapy except one where a second intervention was required. All the cases have seen their visual field improve after surgical intervention. Mean preoperative Mean Defect (MD) was 13.43 ± 8.68 dB OD and 13.4 ± 5.07 dB OS. Mean postoperative MD was 8.2 ± 10.27 dB OD and 5.42 ± 4.12 dB OS.

Conclusion: Pituitary macroadenoma are prone to be missed or diagnosed with delay when ophthalmic patients are already followed for another pathology that prevents the clinician from diligently evoking the diagnosis. Despite profound visual field loss, visual recovery was almost complete in all six patients, indicating that even diagnostic delay did not preclude recovery in our series.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P03 | Peripheral inflammatory yellow exudative retinal Coats-like vitreoretinopathy misdiagnosed as acute retinal necrosis (ARN) in a retinitis pigmentosa patient after cataract surgery

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Purpose: To describe a case with Coat's like response after cataract surgery in a patient with Retinitis Pigmentosa misdiagnosed as acute retinal necrosis (ARN).

Methods: Observational case report.

Results: A patient with Retinitis Pigmentosa (RP) underwent cataract surgery that was complicated by macular oedema. Following sub-Tenon's injection of triamcinolone acetonide, evolution was initially favourable. However, 2 months later, after two sub-Tenon's injections, the patient complained again of floaters and a drop of visual acuity. Aqueous flare measured by laser flare photometry was increased and posterior segment examination showed vitreitis, posterior haemorrhages and a temporal inferior peripheral white-yellowish area in left eye. Serology (IgGs) for varicella-zoster virus (VZV) was slightly elevated and more so for toxoplasmosis. The whole clinical context strongly evoked ARN not excluding completely ocular toxoplasmosis. Valacyclovir and Clindamycin were introduced without benefit. When examining the extreme periphery of the right fellow eye, discreet yellow lesions were also detected rendering the infectious hypothesis less probable. A vitrectomy finally excluded infectious causes and the diagnosis of Coats-like exudative vitreoretinopathy in a RP patient was retained.

Conclusion: Increased flare despite 2 sub-Tenon's injection, the presence of micro-haemorrhages, and peripheral yellow retinal necrotic areas drew our attention away from a well-known albeit rare condition of Coats-like response in retinitis pigmentosa patients, a diagnosis which has to be considered in such circumstances.

Financial Interest: None: No commercial relationship
Grants: None

Cataract / Refractive Surgery / Contact Lens

P04 | Spontaneous delayed rotation of toric implantable collamer lens (TICL) four years after initial im-plantation: A case report

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Background: Postoperative rotation of TICL is a well-known but rare complication. Rotations typically occur within the first week. Causes include incorrect sizing, residual Healon in the anterior chamber and trauma. In the event of a significant rotation (>10°) an operative readjustment is usually needed.

Case description: A 30-year old patient underwent TICL implantation for high myopia and mild astigmatism in both eyes. The procedure was uneventful with an uncorrected visual acuity (UCVA) of 1.6 (Snellen) after 5 days. Follow-ups after 1 and 2 years were regular with a stable UCVA of 1.25 - 1.6. 4 years after the initial procedure, the patient noticed a spontaneous decrease in visual acuity in the left eye during a world-travel. He denied any trauma or high-velocity extreme sport. On examination, UCVA was decreased to 0.32 due to an TICL rotation of almost 90° from targeted 10° to 98°. Ultrasound Biomicroscopy showed no irregularities. Surgical TICL rotation was performed with a postoperative UCVA 1.25 (Snellen). The postoperative follow-up after 1 year showed a satisfactory result with a stable axis and a UCVA of 1.25 (Snellen).

Conclusion: This is the first report to reveal a delayed, massive postoperative TICL rotation four years after uneventful implantation. Due to the long time period between operation and rotation, this is a very unusual complication. Regular follow-ups for several years are recommended.

Financial Interest: None: No commercial relationship
Grants: None

Others

P05 | Validation of the Postnatal Growth and Retinopathy of Prematurity (G-ROP) Screening Criteria in a Swiss Cohort

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Background: Currently used screening criteria for retinopathy of prematurity (ROP) show high sensitivity for predicting treatment-requiring ROP, but low specificity; over 90% of examined infants do not develop ROP that requires treatment (type 1 ROP). A novel weight gain-based prediction model was developed by the G-ROP study group to increase the specificity of the screening criteria and keep ophthalmic examinations as low as possible. This retrospective cohort study aims to externally validate the G-ROP screening criteria in a Swiss cohort.

Methods: Data of 645 preterm infants in the ROP screening at Inselspital Bern from January 2015 to December 2019 were retrospectively retrieved from the screening log and analysed. The G-ROP screening criteria, consisting of 6 trigger parameters, were applied for infants with complete data. To determine the performance of the G-ROP prediction model for treatment-requiring ROP, sensitivity and specificity were calculated.

Results: Complete data was available for 322 infants that were included in the analysis. None of the excluded infants had developed type 1 ROP. By applying the 6 criteria in the G-ROP model, 214 infants were flagged to undergo screening: among these, 14 developed type 1 ROP, 9 type 2 ROP, and 43 milder stages of ROP. The sensitivity for predicting treatment-requiring ROP was 100% (CI, 0.785-1.00) and the specificity 41% (CI, 0.352-0.473). Implementing the novel G-ROP screening criteria would reduce ROP screening fundus examinations by around a third.

Conclusion: The overall prevalence of treatment-requiring ROP was low (2.15%). Previously published performance parameters for the G-ROP algorithm were reproducible in this Swiss cohort. Importantly, all treatment-requiring infants were correctly identified. By using these novel criteria, the burden of screening examinations could be significantly reduced.

Financial Interest: None: No commercial relationship
Grants: None

Glaucoma, Neuroophthalmology / Strabology

P06 | How electro-diagnostics can help differentiating ischemic optic neuropathy from normal tension glaucoma

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Case report: A 57-years old woman was referred with newly appeared relative scotoma, OS: Her Snellen visual acuity had been 1.2 @ near and distance. She suffered glaucoma, treated since years with Travatan (1xOU) and Timolol (1xOS).
Her visual field examination (Octopus, M2) revealed inferior altitudinal paracentral scotoma, OS. Pupillary responses were normal, no RAPD. An automated intraretinal segmentation of SD-OCT revealed a corresponding suspected thinning of the ganglion cell layer, OS. Fluorescein- and ICG angiography were unremarkable, OU. The RNFL-OCT shows also a normal pattern in the beginning.
The full-field ERG was in the range of normal compared to control group. MfERG amplitudes were centrally slightly reduced, OS. Pattern VEP P-100 amplitudes (7.5´ and 15´) were reduced and their corresponding latencies were slightly delayed (ca. 10ms). At this point neurologic testing of the patient was performed, which ruled out a demyelinating process. In addition, Aquaporin-4 and anti-MOG antibodies were negative. In the presence of pre-existing glaucoma and positive history of migraine attack, an underlying vascular dysregulation was postulated. However, dynamic vessel analyses (RVA, IMEDOS) revealed an unremarkable venous and arterial dilation to flicker of +6.2 and +5.9%, OS.

In summary: A combined electro-diagnostic approach enabled the diagnosis of ischemic optic neuropathy and ruled out a disturbed simultaneous vascular regulation.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology

P07 | A retrospective comparison of different intra- and postoperative treatment regimes to prevent infections after surgical correction of strabismus.

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Purpose: As studies have shown postsurgical polyvidone-iodine to be equal to postsurgical topical antibiotics we changed our care regime a few years ago. In order to promote and establish better patientcare, we now retrospectively analysed the files of our patients who underwent strabismus surgery to compare the influence of the postsurgical infection rate of these different regimes in a routine clinical setting.

Methods: In this retrospective and explorative study which was approved by the regional ethics committee, data from 40 patients who had undergone strabismus surgery (Group I: 20 with postsurgical topical Gentamicin immediately postoperatively and in the week following surgery; Group II: 20 with polyvidone iodine immediately postsurgical) was extracted from the files. We compared the efficiency of polyvidone-iodine given at the end of strabismus surgery to antibiotics given locally in the postoperative period to prevent post-surgical bacterial conjunctival infections as defined by purulent conjunctival secretion. Secondary parameters noted were conjunctival swelling and redness as well as other complications.

Results: Mean age of Group I was 49 years. This compared to a mean age of 44 years in group II. There was no case of purulent conjunctival secretion in either group. On the first postoperative day, Group I had 9 patients with swelling and redness of the conjunctiva, 1 with a Fuchs' Delle and 1 with a positive Tyndall sign. This compared to 9 patients with conjunctival swelling and redness in Group II. At the one week follow up 9 patients of Group I and 8 of Group II had conjunctival swelling or redness. At the 3 month follow up, those visual signs were only seen in one patient in either group. There were 2 reoperations and 7 patients with systemic illness in both groups.

Conclusion: The use of polyvidone-iodine did not result any bacterial infections, just as when topical Gentamicin was given. Thus topical polyvidone-iodine is a good alternative to topical usage of antibiotics after strabismus surgery with the added benefit of no risk of creating bacterial resistance to antibiotics. In addition, the postoperative healing period was comparable between the two groups. To further solidify our results more patients need to be included.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P08 | «Treat-and-Extend» Schema bei exsudativer altersbedingter Makuladegeneration: ein zweijähriges retrospektives Follow-up

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Hintergrund: Nach der Einführung eines „Treat-and-Extend“ (T&E) Schemas mit Aflibercept bei exsudativer altersbedingter Makuladegeneration (AMD) wurden naive Patienten mit Patienten verglichen, die mit einem «Pro-re-nata» (PRN) Schema vorbehandelt waren.

Patienten und Methoden: Die Ethikkommission der Ostschweiz hat die retrospektive monozentrische Studie bewilligt (EKOS 20/084, Projekt-ID: 2020-01193). 342 Augen von 303 konsekutiven Patienten wurden eingeschlossen, die zwischen Januar 2018 und Dezember 2019 in der Augenklinik des Kantonsspitals St. Gallen neu mit einem T&E Schema behandelt oder darauf umgestellt wurden. Die Geschlechterverteilung der behandelten Augen war 63.5 % (n = 217) weiblich und 36.5 % (n = 125) männlich. Das mittlere Alter betrug 82 Jahre (SD = 8.61 Jahre). Die Einteilung erfolgte in drei Gruppen: 1) naive Patienten (n=92), 2) Patienten mit ≤ 6 Vorbehandlungen mit einem PRN Schema (n=37), 3) Patienten mit > 6 Vorbehandlungen mit einem PRN Schema (n=213). Folgende Parameter wurden im Beobachtungszeitraum von 24 Monaten analysiert: die Visusentwicklung in ETDRS-Buchstaben, die Zahl der intravitrealen Injektionen, die Rezidivquote und die Dauer des letzten Behandlungsintervalles.

Ergebnisse: Im Beobachtungszeitraum von 24 Monaten zeigte sich in der Gruppe 1 eine statistisch signifikante Visusverbesserung von +1.47 EDTRS-Buchstaben, während es in der Gruppe 2 zu einem medianen Visusabfall von -2.95 EDTRS-Buchstaben und in der Gruppe 3 von -3.66 EDTRS-Buchstaben kam. Damit wies der Visusverlauf eine signifikante Differenz zwischen den drei Gruppen (Kruskal-Wallis test, p=0.018) auf. Die Gruppe 1 zeigte eine bessere Visusentwicklung als die Gruppen 2 und 3 (Wilcoxon rank-sum test, p=0.005), während diese untereinander keinen signifikanten Unterschied zeigten (Wilcoxon rank-sum test, p=0.92). Weiterhin konnte gezeigt werden, dass ein fortschreitendes Alter mit einem erhöhten Rezidivrisiko und damit mit einem erhöhten Behandlungsbedarf und einer schlechteren Visusentwicklung korrelierte.

Schlussfolgerungen: Die Behandlung mit Aflibercept in einem T&E Schema zeigt einen signifikant besseren Visusverlauf bei naiven Patienten als bei mit einem PRN Schema vorbehandelten Patienten. Parameter wie das Alter der Patienten oder die Anzahl der Vorbehandlungen haben zudem einen negativen Effekt auf den zu erwartenden Therapieerfolg.

Financial Interest: None: No commercial relationship
Grants: Keine

Glaucoma

P09 | 36-Month Outcomes of Combined Ab Interno Viscocanaloplasty (ABiC) in the Surgical Treatment of Open-Angle Glaucoma

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Introduction: Ab interno viscocanaloplasty (ABiC) derives from ab externo viscocanalostomy and involves the catheterization of Schlemm's canal with a flexible microcatheter through which viscoelastic material is injected to dilate the canal and its surrounding structures on 360°.The aim of this study was to analyze the safety profile and efficacy of ABiC through to 36 months post-operatively.

Methods: In this retrospective study carried out at a tertiary ophthalmology centre, all patients who underwent ABiC between January 2016 and January 2017 were retrospectively enrolled, and their medical records were analysed. Complete success was defined as a 36-month reduction in intraocular pressure (IOP) ≥ 20% from baseline with no concomitant medications. Qualified success criteria were identical, with no more medications than at baseline. When longer follow-up periods were available, mean IOP and medications were reported at the last visit.

Results: In all, 30 eyes of 25 patients were analysed, with a mean follow-up time of 42.3 ± 4.6 months. Mean IOP decreased from 25.9 ± 9.2 mmHg preoperatively to 13.8 ± 4.0 mmHg (-46.7%; $p < 0.001$) at the last visit. Concomitantly, the number of medications dropped from 3.4 ± 0.9 to 1.0 ± 1.2 (-70.6%; $p < 0.001$). Complete success at 36 months was achieved in 20% of eyes, and qualified success in 53%. Amongst eyes with a baseline MD < -9 dBs, 20% and 100% achieved complete and qualified success, respectively, and 66.7% of eyes that had previously undergone filtering surgery achieved both complete and qualified success, with a mean 3-year IOP of 10.7 ± 3.2 mmHg. A total of 14 eyes (46.7%) were considered surgical failure due to uncontrolled IOP, 8 of which (26.7%) required further filtering surgery. Sixteen adverse events were observed during the follow-up period, with IOP spikes > 30 mmHg during the first post-operative week being the most common complication (36.7%).

Conclusions: ABIC achieved a statistically significant reduction in IOP and anti-glaucoma medications through 3 years of follow-up, with a favourable safety profile. It may be a valid technique to allow long-term control of IOP in mild-to-severe open-angle glaucoma, including after failed filtering surgery.

Financial Interest: None: No commercial relationship
Grants: Non - Aucunes subventions.

Glaucoma

P10 | Retrospective Analysis of 12 months Glaucoma Implant Efficacy: XEN45 versus PreserFlo

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Purpose: Glaucoma surgery has seen a number of new implant devices lately, using various techniques for intraocular pressure (IOP) reduction. Two implants introduced during the past couple of years, XEN and PreserFlo, are both designed for controlled subconjunctival filtration. There are two independent ongoing Swiss multicenter studies which are set to retrospectively analyse the efficacy and safety of these two devices. In this particular study we analysed the data subset from Basel and report preliminary results of the retrospective comparison between these two methods.

Subjects and Methods: XEN45 implantation technique was introduced in Basel University Hospital in 2016, and PreserFlo in 2018. Operated patients were clinically followed up and their data retrospectively analysed from medical records. Only stand-alone procedures, without combined phacoemulsification, were considered in this analysis; the lens status however was neither an inclusion nor exclusion criterion. Further inclusion criteria were the diagnosis of open-angle glaucoma, no previous glaucoma surgery other than laser trabeculoplasty, and complete medical records during the 12 months follow-up. Data of first consecutive thirty operated patients with each technique, fulfilling the criteria, were included in the analysis. Primary outcome measure was the IOP reduction during a 12 month postoperative period, as well as the number of IOP-reducing drugs. The number of subsequent surgical interventions and complications / adverse events are descriptively reported.

Results: Patient age, gender, ophthalmological diagnosis and initial preoperative IOP were well balanced between the two groups. Postoperative IOP course was comparable between the two methods for the first 12 months. IOP measurements were taken preoperatively and then at first postop. day / week 1 / month 1 / months 3/6/12 respectively for PreserFlo vs. XEN45 (mmHg): 23.6 vs. 24.9; 9.0 vs.8.9; 11.4 vs. 10.6; 13.0 vs.18.3; 16.8 vs.15.1; 15.9 vs.15.0; 15,4 vs.14.5. IOP-reducing medications were also comparable between the two groups. Subsequent interventions were more frequent in the XEN (13) than in the PreserFlo group (7).

Conclusion: Both analysed methods demonstrate satisfactory intraocular pressure control within a 12 month postoperative period with practically no serious adverse events / complications, but with relatively high number of subsequent interventions, particularly in the XEN group.

Financial Interest: None: No commercial relationship
Grants: keine

External Disease / Cornea

P12 | Peripheral sterile corneal ring infiltrate after accelerated cross-linking- a case report

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Sterile corneal infiltrates have been described in case reports after accelerated collagen cross-linking in keratokonus. This case describes a 30 year-old male patient, who developed a circular, almost 360 degree, peripheral sterile corneal ring infiltrate at first postoperative day. He underwent epithelium off accelerated cross-linking due to progression of keratokonus. After establishing an anti-inflammatory therapy with steroid eye drops the infiltrate healed over three weeks without scar formation.
The development of a sterile infiltrate is a rare complication after accelerated collagen cross-linking. However, it is reported to be more common than infectious keratitis. This suggests the consideration of a prophylactic immunosuppressive therapy with steroid eye drops postoperatively in addition to the prophylactic antibiotic therapy.
Physician should be aware of this rare complication and begin topical steroid therapy immediately even without full epithelial healing. It is also important to differentiate from infectious keratitis. The immediate treatment would prevent further complications such as scar formation or excessive corneal melting.

Financial Interest: None: No commercial relationship
Grants: None

Glaucoma

P13 | XEN-Augmented Deep Sclerectomy: 6-Month Outcomes of a Novel Glaucoma Surgical Technique and Comparison with Non-Penetrating Deep Sclerectomy

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Introduction: Non-penetrating deep sclerectomy (DS) was shown to be as effective as trabeculectomy with a superior safety profile. However, DS can be technically difficult to master and requires frequent post-operative interventions. While XEN gel stents are not as technically demanding and exhibit a favorable safety profile, they are prone to subconjunctival fibrosis. A new technique, XEN-augmented deep sclerectomy (XEN-DS), was designed to draw on the strengths of both traditional DS and XEN gel stents to produce a safer and more effective surgical technique. The aim of this study was to evaluate the safety profile and efficacy of this novel glaucoma procedure.

Methods: In this retrospective study carried out at a tertiary ophthalmology centre, all patients who underwent XEN-DS between December 2005 and February 2020 were retrospectively enrolled. A severity-matched group of patients having undergone DS with the same surgeon over the same period was retrospectively enrolled. Success at 6 months was defined as an unmedicated intraocular pressure (IOP) of 15 mmHg or less, in conjunction with a relative IOP reduction from baseline of at least 20%.

Results: In all, 49 eyes of 43 patients were retrospectively included: 27 underwent DS and 22 underwent XEN-DS. Mean IOP in the DS and XEN-DS respectively decreased from 25.0 ± 7.9 mmHg and 30.0 ± 8.7 mmHg preoperatively to 11.8 ± 4.7 mmHg (-52.8%; $p < 0.001$) and 13.9 ± 4.4 mmHg (-53.7%; $p < 0.001$) 6 months postoperatively ($p = 0.375$). The number of medications concomitantly dropped from 3.4 ± 0.7 and 3.4 ± 0.7 to 0.3 ± 0.9 (-91.2%; $p < 0.001$) and none (-100.0%; $p < 0.001$), respectively ($p = 0.227$). Complete success was achieved in 63.0% of DS eyes and 72.7% of XEN-DS eyes. Laser goniopunctures were required in 6 eyes following DS (23.1%). Needling revisions were performed in 2 eyes (7.7%) of the DS group, and one in the XEN-DS group (4.5%). Postoperatively, 19 and 8 adverse events were observed in the DS and the XEN-DS groups respectively.

Conclusions: This study suggests that DS and XEN-DS have similar IOP-lowering potentials, but XEN-DS has a superior safety profile and lower rates of post-operative interventions at 6 months.

Financial Interest: None: No commercial relationship
Grants: None

Uveitis / Intraocular Inflammation

P14 | Vogt-Koyanagi-Harada-Syndrom, ein Patientenbericht

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Hintergrund: Das Vogt-Koyanagi-Harada (VKH) Syndrom ist eine seltene, bilaterale, multisystemische ophthalmologische Erkrankung, welche in Stadien verläuft. Es wurde erstmalig von dem Schweizer Alfred Vogt 1906 bei einem Patienten mit vorzeitigem Ergrauen der Wimpern und plötzlicher, beidseitiger Iridozyklitis beschrieben.
Klinisch präsentiert sich das VKH-Syndrom typischerweise mit einer granulomatösen Panuveitis mit Papillenschwellung, Panuveitis, exsudativer Amotio sowie Hautbeteiligungen und neurologischen Beschwerden.
Man nimmt an, dass es sich um eine Th-1 Zell-vermittelte Reaktion gegen Melanin-assoziierte Antigene handelt, wie diese z.B. im Auge, im Innenohr, im ZNS, den Haaren und der Haut zu finden sind. Das VKH-Syndrom wird häufiger bei stärker pigmentierten Individuen beobachtet. Eine frühe Diagnosestellung und rascher Beginn der Behandlung mit hochdosierten Corticosteroiden, sowie ggf. anderen steroidsparenden Immunsuppressiva im Verlauf ist wichtig, um eine Remission zu erreichen bzw. Komplikationen zu verringern.

Methoden: Fallbericht

Resultate: Wir beschreiben den Fall einer 46-jährigen, weiblichen Patientin europäischer Abstammung mit einer zu Beginn eher untypischen klinischen Präsentation, der Diagnosefindung sowie dem aktuell schwankenden Verlauf mit persistierendem Makulaödem und Papillenschwellung unter zweifacher immunmodulatorischer Therapie sowie St.n. zweimaliger Ozurdex Implantation beidseits.

Fazit: Das VKH-Syndrom ist zwar eine seltene Erkrankung, aber ein wichtiger Grund für einen akuten beidseitigen Visusverlust. Es ist wichtig, als OphthalmologIn bei einer Panuveitis an dieses Krankheitsbild zu denken und eine sofortige Steroidtherapie zu beginnen, um einen möglichst gutartigen Verlauf zu erzielen. Mit diesem Case Report möchten wir das Krankheitsbild näherbringen und anhand eines aktuellen Patientenbeispiels den Verlauf und die Therapie erläutern.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P15 | Recurring Corneal and Conjunctival Dysplasia; Report of a Case.

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Background: Epithelial dysplasia is categorized as conjunctival/corneal intraepithelial neoplasia which is a precancerous lesion. The lesion usually developed at the limbal region of the interpalpebral conjunctiva. Main risk factors include ultraviolet light exposure, human papillomavirus (HPV) infection and immunosuppression (HIV/AIDS).

Here, we report a case of recurrent conjunctival and corneal intraepithelial neoplasia.

History and Signs: A 66 years-old man presented with one-month history of gradual visual disturbance and redness in his right eye. In his ocular medical history, the patient was previously subjected to excision of a conjunctival lesion in the right eye. The brush cytology has shown epithelial cells with mild dysplasia. Thus, a biopsy has been performed and confirmed the diagnosis of mild conjunctival intraepithelial dysplasia. A surgical excision without adjuvant therapy has been made. In his general medical history, the patient was known for a HIV infection treated with antiviral therapy.
Ophthalmic examination revealed a white, gelatinous, plaque-like interpalpebral conjunctival lesion with diffuse corneal epithelial invasion in a geographical pattern.
Anterior segment optical coherence tomography showed hyperreflective, thickened epithelium. His visual acuity was 0.8 in his right eye.

Therapy and outcomes: The patient was treated for the second time with superficial keratectomy and surgical excision of the conjunctival lesion. Excisional biopsy revealed a carcinoma in situ which is characterized by a complete thickness replacement of the surface epithelium by abnormal epithelial cells that lack normal maturation. Few months later, during a routine check-up, a new recurrence occurred with this time a partial involvement of the corneal epithelium. A topical chemotherapy with Mitomycin (MMC) 0,02% for a duration of 4 weeks has been initiated.

Conclusion: Hereby we present a rare case of recurring corneal and conjunctival dysplasia in an immunocompromised patient, which progressed to carcinoma in situ.
Different treatment methods have been proposed ranging from surgical excision to topical chemotherapy alone. The therapy of choice is individualized and determinated by side-effects profiles of these chemotherapeutic agents, patient factors and the histopathologic features.
In our case, chemotherapy with MMC had the advantage of treating the entire ocular surface.

Financial Interest: None: No commercial relationship
Grants: None

Glaucoma, Others

P16 | The Financial Burden of Healthcare and its Impact on Access to Eye Care for Glaucoma Patients in Switzerland

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Purpose: In order to fulfil the principles of universality and equality, Switzerland has made it compulsory for all its residents to take out private health insurance. Yet, Switzerland has the second highest health expenditure per capita in the world, and inequality in access to healthcare are frequently reported. The aim of the present study was to explore the financial burden of healthcare on glaucoma patients in Switzerland.

Methods: In this prospective study, primary data were collected from 12 private ophthalmology clinics in Switzerland. A web-based questionnaire was used to assess the impact of the cost of health insurances and medical consultations on patients' ophthalmic health and psychological wellbeing. Measures were made on modified 10-point Likert scales. Every patient who attended an appointment at one of the participating clinics on randomly selected dates in October 2020 was offered voluntary enrolment.

Results: In all, the surveys from 54 glaucoma patients were analysed. Their mean age was 67.0 ± 9.4 years, 51.9% were female and 81.5% were Swiss nationals. Overall, 40.7% of respondents only had a basic insurance, 55.6% had a private insurance, and the remaining 3.7% had no Swiss insurance. At the time of the survey, 85.2% of responders had reached their annual deductible amount, and 7.4% did not know. Of all responders, 55.5% considered their insurance plan too expensive, while 25.9% considered its price was fair, and 18.5% were unsure. Similarly, 25.9% considered ophthalmology consultations too expensive, while 33.3% considered their prices were fair, and 44.7% were unsure. Of all surveyed patients, 14.8% had previously postponed or cancelled a medical appointment because of financial hardships, and 29.6% frequently felt stressed because of medical or insurance bills. Basic health insurances and high annual deductible amounts moderately correlated with the likelihood of cancelling medical appointments due to financial difficulties ($r = 0.52$ and $r = 0.46$, respectively). The latter was also associated with a higher self-reported glaucoma severity ($r = 0.41$) and a higher likelihood of missing subsequent appointments ($r = 0.46$).

Conclusions: The present research highlights the impact of the financial burden of healthcare and health insurances on glaucoma patients' follow-up and psychological wellbeing in Switzerland. This suggests that lower deductibles may contribute to reducing health inequalities and improving glaucoma monitoring.

Financial Interest: None: No commercial relationship
Grants: Aucune.

Others

P17 | The Role of Patient Preferences for Doctors' Attires in Swiss Ophthalmology Practice

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Purpose: The subject of doctors' attires have been debated for years and is intrinsically subjective. Yet, several studies have shown that it bears significant implication for the doctor-patient relationship and plays a key role in patients' trust and satisfaction. However, to date, no studies have studied patients' preferences in Swiss ophthalmology practice. The aim of the present study was, therefore, to identify patients' preferences for doctors' attires in the private ophthalmology setting in Switzerland.

Methods: This was a prospective study based on primary data collected from 12 private ophthalmology clinics in French-speaking Switzerland. A specifically designed web-based patient experience questionnaire was used to assess patients' preference in terms of doctors' outfits and their overall satisfaction with their care. For the former, patients were provided with illustrations of different outfits, all represented both for male and female doctors. For the latter, patients were requested to rate their satisfaction on modified 10-point Likert scales. Every patient who attended an appointment at one of the participating clinics on randomly selected dates in October 2020 was offered voluntary enrolment into the study.

Results: In all, 118 surveys were completed and analysed. The mean age of respondents was 57.8 ± 18.0 years, 59.3% were female and 71.2% were Swiss nationals. Overall, 84.7% preferred their ophthalmologist to wear a white coat, as opposed to formal business attire (5.1%), scrubs (5.1%) or casual cloths (5.1%). Amongst those who responded a white coat, 52.0% preferred their doctors to wear it over formal clothes, 32.0% over casual clothes, and 16.0% over scrubs. The correlation with the uniform policy of the clinic they attended was weak (r = 0.07). Patients with university degrees, patients over 65-year-old, and Swiss patients had a greater preference for white coats (92.6%, 88.9% and 85.7% respectively). In all patients, the doctor attire correlated moderately with their overall satisfaction (r = 0.49). The correlation was strong amongst Swiss patients (r = 0.65).

Conclusions: The present research shows that Swiss patients attending private ophthalmology clinics have a strong preference for white coats worn over formal outfits. This finding is particularly relevant as doctors' attires significantly contribute to shaping patients' experience of care and overall satisfaction.

Financial Interest: None: No commercial relationship
Grants: Aucune.

Retina Vitreous

P18 | Metabolic long-term monitoring of transcorneal electrical stimulation in retinitis pigmentosa

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Purpose: Transcorneal electrical stimulation (TES) is a new therapeutical approach for retinitis pigmentosa (RP). With progression of RP, degeneration of photoreceptors results in lower oxygen consumption of the retina. Retinal oximetry (RO) is a non-invasive method to analyse oxygen saturation in retinal vessels and has shown promising short-term results as a therapy monitoring tool for TES. The aim of our study was to measure the long-term effects of TES on RO parameters over a period of 3 years.

Methods: A total of 18 eyes of 9 subjects (5♀ 4♂) suffering from RP were examined at baseline, six months and 3 years after TES (OkuStim®). TES was performed for 30 minutes once a week at 200% of the individual phosphene threshold, simultaneously on both eyes. The oxygen saturation was examined at baseline and following TES therapy with the oxygen saturation tool of the Retinal Vessel Analyser (RVA; IMEDOS Systems UG, Jena, Germany). The global oxygen saturation parameters (in %), within 1.0–1.5 optic disc diameters from the disc margin, in retinal arterioles (A-SO2) and venules (V-SO2) were measured and their difference (A-V SO2) was calculated. In addition, we recorded the diameters in the main arterioles (D-A) and venules (D-V). ANOVA-based linear mixed-effects models were employed for statistical analysis using MATLAB®.

Results: 3 years after TES-treatment both the mean A-SO2 (from 96.35 +/- 12.76% to 100.89 +/- 5.87%, p=0.15) and the V-SO2 increased slightly (from 62.20 +/- 11.55% to 64.55 +/- 8.24%, p=0.77). The A-V SO2, which corresponds to the oxygen consumption of the retina, presented also with a slight increment from 34.15 +/- 9.68% at baseline to 36.23 +/- 7.71%, however without reaching statistical significance (p=0.27). TES also had no influence on the vascular diameter parameters, D-A and D-V (p>0.7).

Conclusion: Our long-term observations indicate that TES therapy in RP presents might lead to a slight increment in oxygen consumption of the retina. However, a larger cohort and/or longer duration may be needed to adequately power a follow-up study and to confirm this trend reflecting a possible benefit of TES for RP.

Grants: None

Retina Vitreous

P19 | Simultaneous management of rhegmatogenous retinal detachment and aphakia with vitrectomy, silicone oil tamponade and retropupillary iris-claw intraocular lens implantation in patients with Marfan Syndrome

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Purpose: To report on 4 cases of simultaneous management of rhegmatogenous retinal detachment (RRD) and aphakia with vitrectomy, silicone oil tamponade and retro-pupillary iris-claw intraocular lens (Artisan lens, Ophtec, Boca Raton, Fla.) implantation in patients with Marfan Syndrome

Methods: This is a retrospective interventional case series review of 4 of Marfan Syndrome patients presenting a RRD associated with aphakia operated at Jules Gonin Eye Hospital between 2019 and 2020.

Results: All eyes had a RRD at presentation. Ages at presentation were 20 years, 30 years, 32 years, and 31 respectively.
All patients had history of extraction of dislocated lens during childhood. None of the patients had a previous posterior vitrectomy. All patients had records of measurements for IOL calculation by optical biometry (IOL Master®, Zeiss) prior to the RRD development. All patients underwent 23G vitrectomy, peripheral iridotomy and retro-pupillary iris-claw intraocular lens. No intraoperative complications were encountered.
All patients had silicone oil tamponade one of which required heavy silicone oil. Silicone oil was removed 3 months following primary surgery. All 4 patients had a minimum 9-month follow-up.
The single-surgery anatomic success rate was 100%.
All patients had a visual acuity of at least 0.63 at the last follow-up. (1.25, 1.0, 0.8 and 0.63 respectively). The targeted refractive results were accurately achieved in all four cases postoperatively.
One patient showed moderate pigment deposition on the Artisan lens that has been successfully managed using Tano's diamond dusted brush during silicone oil removal. The Artisan lens remained clear post-operatively (9 months follow-up). One patient presented ocular hypertension 2 weeks after surgery presumably steroid induced that was successfully managed conservatively.

Conclusion: Simultaneous management of aphakia with retro-pupillary iris-claw intraocular lens implantation in patients with Marfan Syndrome presenting a retinal detachment could prevent post-operative complications acting as a barrier to silicone oil or gas tamponades entering in the anterior chamber and merits consideration in these cases.

Financial Interest: None: No commercial relationship
Grants: none

Others

P20 | Frequency of eye diseases in residents of nursing homes– 1–year results of a novel telemedicine service in Switzerland

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Purpose: Ophthalmic care of elderly persons with limited mobility is often organizationally demanding and stressful for the affected individuals. Difficult access can lead to underuse of medical care, visual impairment, injurious falls and low quality of life. We established a service, including a basic ophthalmological examination carried out by trained paramedical personnel at nursing homes. We assess visual acuity, eye pressure, and the outer eye with eyelid, conjunctiva, cornea, and iris, lens, optic nerve as well as the retina. All examination findings are recorded electronically. The interpretation is carried out remotely by board certified ophthalmologists using our telemedicine platform. Recommendations are recorded in a doctor's letter. This study summarizes the frequency of findings of treatable eye diseases after the first year of operation in participants who dropped out from regular ophthalmological control.

Methods: Participants' clinical characteristics, frequency of service utilization and findings were extracted from the system and analysed.

Results: Of 1946 residents approached, 540 (27.7%; 1080 eyes) signed up for the service. A complete examination was possible in 412 persons (813 eyes) and partially possible in the remaining 128. Examined participants mean age was 83.9 years (SD 9.7), and were predominantly female (69.8%). The majority had a diagnosis of dementia (54.5%) and 20.2% had diabetes mellitus requiring treatment. The median care level (ranging from 0-12) was 7 (interquartile range 6-9), corresponding to a care need of 121-140 min/day. The mean best-corrected decimal visual acuity was 0.55 (SD 0.24). For 164 eyes (15.2%) the current spectacle correction was insufficient. An untreated cataract was present in 145 eyes (13.4%), 89 eyes (8.2%) were receiving glaucoma treatment and 7 eyes had a decompensated glaucoma. 276 eyes (25.6%) had dry AMD,12 eyes (1.1%) wet AMD and 24 eyes (11.0%) among patients with diabetes showed signs of diabetic retinopathy. Other pathologies were uncommon.

Conclusion: Residents of nursery homes, who are unable to attend regular ophthalmological control, show various treatable ophthalmologic conditions including cataracts, glaucoma and retinal pathologies. Screening using the novel telemedicine service allows identification of treatable conditions and careful planning and referral of patients to appropriate clinics having the necessary infrastructure for this particular population.

Grants: None

Retina Vitreous

P21 | Spontanes Peeling epiretinaler Membranen durch hintere Glaskörperabhebung

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Hintergrund: Die epiretinale Gliose ist eine meist idiopathisch gebildete, avaskuläre, fibrozelluläre Membran die sich der Netzhautoberfläche auflagert und diese mit der Zeit in Falten ziehen kann.
Eine spontane Lösung der epiretinalen Membran kann in seltenen Fällen beobachtet werden.

Methoden: Fallbericht
Wir berichten über eine gesunde, zum Zeitpunkt der Fallschilderung 52-jährige Patientin, die sich erstmals 2005 auf Grund einer Myopie zur Routinekontrolle in unserer Ambulanz vorstellte. Es fanden sich klare optische Medien und ein altersentsprechender intraokulärer Befund. Die Sehschärfe betrug cc 1,0 bds. Bei den regelmäßigen Kontrollen in den folgenden Jahren konnte immer wieder ein altersentsprechender gesunder Befund erhoben werden.
Im März 2019 jedoch berichtete die Patientin eine zunehmenden Visusminderung auf dem rechten Auge. Der Visus betrug 0,6. Alle optischen Medien zeigten sich weiterhin klar, jedoch fand sich eine deutliche Glaskörperadhäsion mit Verstreichen der fovealen Senke und eine dezente epiretinale Gliose im OCT. Es wurde gemeinsam mit der Patienten beschlossen die weitere Entwicklung abzuwarten.
Bei einer notfallmäßigen Vorstellung im November mit „Blitzen“ fand sich die epiretinale Membran der Glaskörpergrenzmembran anheftend und scheinbar in den Glaskörperraum gezogen. Die foveale Senke konnte noch nicht wieder ausgemacht werden.
5 Wochen später erfolgte eine erneute Vorstellung mit 3 plötzlich aufgetretenen „schwarzen Punkten“. Funduskopisch fanden sich 3 große Floater sowie eine völlig gelöste Traktion und „verschwundene“ epiretinale Membran im OCT.

Ergebnisse: In den weiteren Kontrollen kam es zu einer Visusnormalisierung bis auf 1,0 und die Makula zeigte sich regelrecht konfiguriert und alle optischen Medien klar.
Der zentrale große Floater wurde von der Patientin noch immer berichtet, allerdings steht sie einer Floaterektomie sehr zurückhaltend gegenüber, sodass die nächste Kontrolle für den Mai 2021 geplant wurde.

Diskussion: Eine spontane Trennung und Abhebung der epiretinalen Gliose ist möglich, jedoch sehr selten und zwangsweise von einem Residuum im Glaskörperraum im Sinne eines großen Floaters begleitet.
Eine Visusrekonstitution ad integrum ist möglich, allerdings erscheint die Operation der Glaskörperadhäsion bzw. der epiretinalen Membranen weiterhin in Zusammenarbeit mit dem Patienten anhand des klinisches Befundes.

Financial Interest: None: No commercial relationship
Grants: Keine

Others

P22 | Efficacy, durability, and safety of faricimab in diabetic macular edema (DME): one-year results from the phase 3 YOSEMITE and RHINE trials

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Purpose: Data from the phase 2 BOULEVARD trial and preclinical models suggest that dual inhibition of the angiopoietin-2 and VEGF-A pathways with faricimab, the first bispecific antibody designed for intraocular use, may reduce inflammation and vascular leakage, promote vascular stability, and improve outcomes beyond anti-VEGF monotherapy for DME. The phase 3 YOSEMITE and RHINE trials were designed to compare the efficacy, durability, and safety of faricimab with aflibercept in patients with DME.
Methods: YOSEMITE (NCT03622580) and RHINE (NCT03622593) are identical, randomized, double-masked, active comparator–controlled, 100-week, phase 3 trials of faricimab in treatment-naïve and previously anti-VEGF–treated patients with center-involving DME. Patients were randomized 1:1:1 to faricimab 6.0 mg every 8 weeks (Q8W) after 6 initial Q4W doses; faricimab 6.0 mg per personalized treatment interval (PTI) after 4 initial Q4W doses; or aflibercept 2.0 mg Q8W after 5 initial Q4W doses. The PTI algorithm is a protocol-driven regimen based on the treat-and-extend concept, using prespecified BCVA and CST criteria to adjust treatment intervals at active dosing visits. Noninferiority, followed by superiority in treatment-naïve patients and then the overall population, was assessed separately for each faricimab arm against aflibercept. The primary efficacy endpoint was mean change in BCVA from baseline averaged over weeks 48, 52, and 56. A key secondary endpoint was the proportion of patients with ≥ 2-step ETDRS-DRSS improvement from baseline; other endpoints included the proportion of patients gaining ≥ 15 ETDRS letters from baseline, change in CST from baseline, and the proportion of patients in the PTI arm on Q4W, Q8W, Q12W, or Q16W dosing at 1 year. Safety was assessed by the incidence and severity of ocular and nonocular adverse events.
Results: In BOULEVARD, faricimab Q4W demonstrated superior vision gains and greater improvements in diabetic retinopathy severity at week 24, and showed potential for extended durability in a 16-week off-treatment observation period, when compared with ranibizumab Q4W. YOSEMITE and RHINE are ongoing trials, with year 1 results to be presented at the meeting.
Conclusions: YOSEMITE and RHINE evaluate the efficacy, durability, and safety of faricimab Q8W or per PTI, a protocol-driven regimen based on treat-and-extend, in patients with DME.

Grants: F. Hoffmann-La Roche Ltd. (Basel, Switzerland) provided support for the study and participated in the study design; conducting the study; and data collection, management, and interpretation. Third-party writing assistance was provided by Karina Hamilton-Peel, PhD, CMPP, of Envision Pharma Group and funded by F. Hoffmann-La Roche Ltd.

Retina Vitreous, Uveitis / Intraocular Inflammation

P23 | CNV in two paediatric patients secondary to focal choroidal excavation

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Purpose: Focal choroidal excavation (FCE) is an OCT diagnosis of a concave configuration of choroid without a posterior staphyloma or scleral ectasia, in a patient with good visual acuity. FCE is mostly unilateral, but bilateral cases have also been reported. It is associated with pachychoroid features and it might be complicated by CNV, which can be located within the excavation or adjacent to the excavation. The reported prevalence of FCE in children is low. This report describes the clinical course and treatment response of CNV secondary to FCE in two children aged 14-years.

Methods: The history, examination, imaging and systemic investigations are presented for both patients, together with the evolution of the clinical course from diagnosis to the present time.

Results: 1. Age: Patient 1: currently 14 years (aged 11 at diagnosis). Patient 2: 14 years
2. Duration of follow up: Patient 1: 3 years. Patient 2: 3 months
3. Presentation: Patient 1 presented with blurred vision. Patient 2 was asymptomatic. The CNV was diagnosed by an optician on routine examination
4. Both patients had a macular CNV adjacent to an FCE clinically, on SD-OCT and FFA. Patient 1 had an additional ipsilateral FCE inside the vascular arcade. The fellow eye was normal in both patients with no FCE or CNV
5. Systemic investigations for an inflammatory aetiology were negative in both patients
6. Both patients were treated with Intravitreal Avastin under GA (UK non-NICE compliant CNV protocol) which resulted in regression of the CNV. Patient 1 has had multiple recurrences and was given the benefit of empirical adjunctive immunosuppression, as a potential retinal sparing measure following a period of prolonged deterioration of vision during the 2nd recurrence of CNV
7. Clinical Course: Patient 1 had a recovery of visual acuity from 6/36 to 6/12 after the first Avastin Injection. In the first two years, there were 3 relapses treated with adjunctive steroids. Empirical Methotrexate added to treatment possibly reduced further recurrences. Currently stable with 6/19 vision. Patient 2 had established fibrosis in the CNV at presentation with associated FCE. No improvement following Avastin

Conclusion: FCE is a rare cause of idiopathic CNV in children and these membranes generally responds well to anti-VEGF therapy, if treated early. The FCE may increase in size and depth with recurrent CNV. Adjunctive immunosuppression may be of benefit to limit retinal damage from CNV associated with FCE.

Financial Interest: None: No commercial relationship
Grants: None

Others

P24 | Nicht-organische Sehstörungen bei Kindern und Jugendlichen

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Hintergrund: Funktionelle Sehstörungen stellen bei Kinder und Jugendlichen eine wichtige aber auch herausfordernde Differentialdiagnose dar. Charakteristisch ist die Diskrepanz zwischen der Symptomatik und den objektiven Befunden. Ziel unserer Arbeit war die Analyse der jungen Patienten, die aufgrund der Diagnose 'funktionelle Sehstörungen' an unserer Klinik betreut wurden.

Patienten und Methoden: Es erfolgte eine retrospektive Datenanalyse: Alter < 18 Jahren, Diagnose 'funktionelle Sehstörung' 2011 - 2020. Anamnestische und klinische Daten wurden aus der Patientenakte extrahiert. Zusätzlich wurden die Eltern bzw. die Patienten mittels eines Fragebogens nach den aktuellen Beschwerdebildern kontaktiert. Die Studie wurde von der kantonalen Ethikkommission Zürich bewilligt.

Resultate: Es wurden insgesamt 92 Patienten identifiziert, wobei eine Analyse bei 53 % (49/92; 32 weiblich, 17 männlich) bei vorliegendem Consent erfolgen konnte. Das Alter betrug 3 bis 18 Jahre (median 10.5 Jahre) mit einem follow- up von 1 bis 58 Monate (median 7 Monate). Die häufigsten Symptome waren bilaterale Visusminderung (55%) und/oder Verschwommensehen (18%) mit Kopfschmerzen (35%), Motilitätsschmerz (14%), Photophobie (4%), Schwindel (4%) und Unwohlsein (2%).
Eine Reduktion des Fern- (22/49 bilateral, 9/49 unilateral) und Nahvisus (24/49 bilateral, 3/49 unilateral) dokumentiert. Die subjektive Visusminderung war in 20% der Patienten bei der Testung nicht mehr nachweisbar. Eine psychologische Belastung war in 13/49 Patienten dokumentiert. Befeuchtende Augentropfen (18/49), Brillenordination (15/49) oder keine Therapie (20/49) wurde empfohlen. Eine subjektive und/oder objektive Besserung bestand beim follow up in 49% (24/49).
Der Fragebogen wurde in 86% beantwortet: keine vollständige Remission der visuellen Symptomatik (10/42), Remission innerhalb 1 Woche (14/41), 1 Monat (3/41), 2-6 Monate (8/41), 1 Jahr (6/41). Es lag keine Korrelation zwischen der Dauer der visuellen Symptome und dem Alter bei Beginn oder dem Geschlecht vor. Die Beratung an unserer Klinik wurde als 'unterstützend und hilfreich' in 31/42 Patienten angegeben.

Fazit: Die Studie zeigt auf, dass nicht-organische Sehstörungen bei Kindern und Jugendlichen eine Ausschlussdiagnose darstellt, welche eingehende Untersuchungen bedarf, um eine organische Ursache auszuschliessen. Die psychosoziale und psychologische Komponente sollte trotz geringem Vorkommen bei der Anamneseerhebung nicht vernachlässigt werden.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P25 | Changes in Retinal Blood Flow during Valsalva-Maneuvre

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Purpose: This study's purpose is to identify and evaluate possible quantitative changes in retinal and choriocapillary blood flow utilizing OCT-A imaging in study subjects during the Valsalva-Maneuver.

Methods: Healthy probands were enrolled in the study and OCT-A imaging with a ZEISS PlexElite 9000 on one eye was performed. Probands could decide whether they wanted to be scanned on the left or right eye. OCT-A images were acquired before the Valsalva-Maneuvre and 5 seconds after beginning the Valsalva-Maneuvre. The acquired images were segmented and underwent projection removal using algorithms supplied by the manufacturers. Analysis of vessel density (VD) and vessel length density (VLD) was performed on superficial (SCP) and deep capillary plexus (DCP) slabs using ImageJ. ImageJ was also used for analyzing flow voids (FV) in the choriocapillary slabs.

Results: 10 (8 right, 2 left) eyes of 11 (5m, 6f) healthy probands were included. Pre-Valsalva, VD and VLD were 0.428(+/-0.291) and 17.871mm−1 (+/-2.22mm−1) in the SCP and 0.423(+/-0.0213) and 23.850 mm−1(+/-1.023 mm−1) in the DCP. Pre-Valsalva, FV were measured at 19.686(+/-1.959). During the Valsalva-Maneuvre, VD and VLD in the SCP were 0.417(+/-0.024) and 17.376mm−1(+/-2.007mm−1), and in the DCP 0.426(+/-0.221) and 23.944mm−1(+/-1.021mm−1) respectively. FV post Valsalva was 20.440(+/-2.062). A Wilcoxon-signed-rank test revealed no significant changes in any of the observed parameters.

Conclusion: We couldn't observe any significant changes in the VD, VLD or FV. This might be due to autoregulatory processes in the blood vessels of the eye. Due to the small sample size, confidence intervals are comparatively large. Further study with more probands might yield different results.

Financial Interest: None: No commercial relationship
Grants: None

Cataract / Refractive Surgery / Contact Lens, Glaucoma, Retina Vitreous

P26 | Two surgical approaches for intraocular lens subluxation: Pars plana vitrectomy versus core vitrectomy with lens exchange

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Purpose: To compare the efficacy and safety of core vitrectomy and pars plana vitrectomy for lens exchange in patients with intraocular lens subluxation.

Methods: This is a retrospective study conducted at one eye center (Talacker Augen Zentrum Zürich) in Zurich, Switzerland. We reviewed 124 eyes with subluxated intraocular lens undergoing lens exchange carried out by two surgeons between 03/2016 and 12/2019 (45 months). Lens exchange with either core vitrectomy or pars plana vitrectomy was compared. Intraocular pressure (IOP) and best-corrected visual acuity (BCVA) were analyzed preoperatively and at 5 time points up to 12 months after lens exchange. Data on postoperative complications were collected.

Results: 124 eyes with intraocular lens subluxation were referred for lens exchange. 59 (48%) eyes received core vitrectomy and 65 (52%) eyes received pars plana vitrectomy with lens exchange. Glaucoma was more frequent in the core vitrectomy group (78%) compared to the pars plana vitrectomy group (32%) ($p < 0.001$).
In the core vitrectomy group 19 (32%) eyes presented with visual impairment, 17 (29%) eyes presented with high IOP alone and 23 (39%) eyes presented with both at the same time prior to surgery. Mean preoperative IOP in the core vitrectomy group decreased from 22.4±9.2mmHg to 14.7±3.1mmHg 12 months after surgery ($p < 0.001$). Mean BCVA changed from 0.40±0.41logMAR preoperatively to 0.32±0.37logMAR at 12 months postoperatively ($p = 0.598$) in the core vitrectomy group.
In the pars plana vitrectomy group 44 (68%) eyes presented with a change in vision, 7 (11%) eyes presented with high IOP alone and 14 (22%) eyes presented with pressure elevation and visual impairment at the visit prior to surgery. Mean preoperative IOP in the pars plana vitrectomy group decreased from 20.9±8.3mmHg to 15.1±3.5mmHg at 12 months after lens exchange ($p < 0.001$). Mean BCVA in the pars plana vitrectomy group was 0.57±0.62logMAR preoperatively and 0.22±0.35logMAR 12 months postoperatively ($p < 0.001$).
Postoperative pressure decompensations occurred more frequently in the core vitrectomy group (20%) compared to the pars plana vitrectomy group (6%) ($p = 0.018$). There was no statistically significant difference for postoperative cystoid macular edema ($p = 0.055$), anisometropia ($p = 0.986$) and high astigmatism ($p = 0.362$).

Conclusion: Core vitrectomy and pars plana vitrectomy with lens exchange are equally efficient and safe in the management of intraocular lens subluxation.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P27 | Full-field stimulus threshold testing and the relation to the oxygen metabolic retinal function in retinitis pigmentosa.

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Purpose: The aim of our study was to evaluate retinal function with (white light) dark-adapted full-field sensitivity threshold testing (FST) and find possible correlations with metabolic function measured with retinal oximetry (RO) in patients with retinitis pigmentosa (RP).

Methods: In this prospective observational study BASEC 2020-00122, FST and RO measurements were performed on 66 RP eyes (33 subjects, 12♀ 21♂) aged between 18 and 80 years (mean 43.2y). Main outcome parameters were FST thresholds using the Diagnosys Espion system with the ColorDomeTM LED full-field stimulator (Diagnosys LLC, Lowell, MA) as well as the main RO parameters: the mean arterial (A-SO2; %), venular (V-SO2; %) oxygen saturation, their difference (A-V SO2; %), and the corresponding mean diameters of the peripapillary retinal arterioles (D-A; µm) and venules (D-V; µm) recorded with the oxygen saturation tool of the Retinal Vessel Analyser (RVA; IMEDOS Systems UG, Jena, Germany). In addition, semi-automated kinetic perimetry (V4e, III4e, I4e, III3e isopters, Octopus 900®, Haag-Streit AG Bern, Switzerland) was performed and included in the ANOVA-based linear mixed-effects models analysis calculated with MATLAB®.

Results: Neither the oxygen saturation parameters A-SO2 (p=0.998), V-SO2 (p=0.595) nor the A-V SO2 (p=0.546) which represents the oxygen consumption of the retina showed significant correlations with the FST. Also, when correlated with the diameters of the peripapillary retinal arterioles (p=0.713) and venules (p=0.193) the FST showed no significant associations. However, when compared systematically with the visual field areas of the V4e, III4e, I4e, III3e-isopters, FST measures showed a significant positive correlation (p=0.028).

Conclusion: In contrast to standardized visual field parameters, white full-field sensitivity threshold testing appears not to correlate with retinal oxygen metabolic function measured with retinal oximetry in patients with RP, suggesting that the two examinations may capture unrelated aspects of the retinal pathological process. However, FST showed a significant association with standardized visual field testing parameters and may, therefore, offer an alternative outcome measure for interventional trials.

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Cataract / Refractive Surgery / Contact Lens

P28 | Genauigkeit der Refraktionsergebnisse nach Implantation torischer Intraokularlinsen

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Zweck: Dies ist eine Fallserie von 64 Augen bei denen im Zuge der Katarakt Operation eine monofokale, torische Intraokularlinse (Oculentis LS-313) implantiert wurde. Ziel war es, die Abweichung des Restastigmatismus nach der Implantation einer Torischen IOL zu analysieren.

Methode: Retrospektive Fallanalyse der Refraktiven und Biometrischen Daten bei Katarakt Patienten.
Die astigmatischen Werte wurden für die statistische Analyse in Powervektoren transformiert um Unabhängigkeit der Achsenlage zu erreichen. Verglichen wurde der erreichte postoperative Refraktive Astigmatismus mit dem bestehenden Kornealen Astigmatismus. Die Rotationsstabilität wurde objektiv mit einem Aberrometer (iTrace) gemessen und als absoluten Wert wiedergegeben.

Resultate: Von den 64 Augen waren 25 weiblich und 39 männlich im Alter von 66.6 ± 8.8 Jahre (Mittelwert ± Standartabweichung). Der sphärische Wert der implantierten IOL war +19.21 ± 4.91 dpt (Stärkebereich +0.86 bis +28.50 dpt) und der Torus war +2.51 ± 1.38 dpt (Stärkebereich +0.75 bis +7.69 dpt).
Der beste korrigierende präoperative Visus in LogMAR war 0.23 ± 0.12 und wurde durch die Operation auf 0.03 ± 0.01, $p \leq 0.001$ verbessert. Der Korneale Astigmatismus der Patienten betrug -2.01 ± 1.08 dpt (Stärkebereich von –0.88 bis -5.81 dpt). Die Transformation in Powervektoren ergeben für den Vektor J0 (astigmatimus rectus & inversus) einen Wert von 0.29 ± 1.00 dpt und für J45 (astigmatimus obliquus) 0.04 ± 0.48 dpt. Postoperativ wurde der Vektor J0 signifikant um 0.43 ± 1.0, $p = 0.001$ abgeschwächt. Bei den obliqui zeigte sich eine Abschwächung von 0.05 ± 0.06 dpt, $p = 0.43$ welche nicht signifikant war. Postoperativ waren die subjektiv gemessenen Astigmatismen bis auf zwei Ausreisser (-0.54 und -0.68) innerhalb von -0.50 dpt.
Die gemessene Verdrehung der IOL-Torus relative zur Kornealen Achse war 5.27° ± 4.3°. Die maximale Verdrehung aller IOL ergab einen Restastigmatimus von 0.88 dpt.

Diskussion: Die Plattenhaptik der Oculentis LS-313 zeigt sich als sehr Rotationsstabil. Die Voraussagbarkeit und Genauigkeit der Implantation Achse und Stärke ist sehr hoch. In diesem Patientengut musste keine IOL nachrotiert werden. Die höchste Abweichung von der Soll-Achse ergab einen Astigmatischen Fehlwert von 0.88 dpt .
Bei 97% der implantierten IOL's war der Restastigmatimus innerhalb von -0.50 dpt.

Financial Interest: None: No commercial relationship
Grants: None

Cataract / Refractive Surgery / Contact Lens

P29 | Does one drop Diclofenac have an effect in pain reduction after topography-guided transepithelial surface ablation?

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Purpose: To report the efficacy of postoperative Diclofenac eye drops for pain reduction in patients undergoing topography-guided transepithelial surface ablation.

Methods: Retrospective, consecutive case series of patients undergoing topography-guided transepithelial surface ablation for refractive myopia treatment using a 1KHz excimer laser. After treatment, a soft bandage contact lens was placed and patients were instructed to use oral NSAID if needed, and topical anaesthetic drops only in very painful situations. Patients who applied other analgetics were excluded. If both eyes were available, one eye was chosen randomly. Patients were divided into 3 groups. Group 1 did not receive any Diclofenac drop, Group 2 received one Diclofenac drop postoperatively (day 1) and Group 3 received postoperatively (day 1) and on the day after treatment (day 2) one drop of diclofenac. Postoperative pain was self-assessed by patients per eye daily for the consecutive first four days (day 1 to 4) after the treatment using the visual analogue scale (VAS). We compared VAS with respect to the use of additional oral or topical treatment as well as VAS with regards to the total amount of ablated tissue (< 50 µm, 50-100 µm, ≥ 100 µm) among the groups.

Results: We enrolled 163 eyes of 163 patients (55.0% female) with mean age of 31.3 years (SD± 6.6; range 21-68). We excluded 16 patients who applied other additional analgetics. Group 1 comprised 35 eyes (21%), Group 2 21 eyes (13%) and Group 3 107 eyes (66%). Median pain score (VAS) was 5 (Range 0, 10) in Group 1, which was significantly higher than in Group 2 (median 1, , range 0, 7) and Group 3 (median 1.5, range 0, 7) on day of surgery ($p < 0.0001$). Percentage of patients using additional oral NSAID on the day 1 and 2 was significantly higher in Group 1 (69%/83%) when compared to Group 2 (24%/43%), respectively Group 3 (31%/49%) ($p < 0.001$ day 1, $p=0.001$ day 2). Also, the percentage use of topical anaesthetic drops was higher on the day 1 and 2 in Group 1 (20%/40%) when compared to Group 2 (5%/5%) and 3 (5/10%) ($p=0.012$/$p=0.002$). No correlation was found between pain sensation and maximum ablation depth (Spearman correlation $p > 0.05$).

Conclusion: The instillation of one drop diclofenac after topography-guided transepithelial surface ablation reduced subjective pain sensation according to VAS and decreased the need for additional topical anaesthetic drops or oral NSAID.

Financial Interest: None: No commercial relationship
Grants: None

Pathology / Intraocular Tumours

P30 | 'De novo' appearance of a choroidal melanoma during 5 years' follow-up for CHRPE

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Purpose: To present an unusual case of 'de novo' choroidal melanoma whose appearance was incidentally documented on serial color fundus pictures.

Methods: Report of a case and review of Pubmed/Medline databases from 1988 to 2021, using as search words 'de novo' AND 'choroidal melanoma'.

Results: In 2014, a 46-year-old female was incidentally found to present a congenital hypertrophy of the retinal pigmented epithelium (CHRPE). Being informed of its minimal risk of malignant transformation into RPE adenocarcinoma, she solicited periodic fundus examinations, including color fundus photography. In 2019, a second, grey-brown, lesion was discovered in the adjacent nasal choroid, with a thickness of 1.6 mm on B-scan ultrasonography, compatible with a choroidal melanoma. A retrospective analysis of the fundus pictures illustrated the appearance, with exponential growth, of this 'de novo' choroidal melanoma. Conservative brachytherapy with a ruthenium plaque was proposed.
A literature search revealed only 2 similar cases, the first reported in 1988, before the era of panoramic fundus photography, and the second in 2015, from a pre-existing 'presumed freckle'.

Conclusion: To the best of our knowledge, this is the first photo-documented de novo development of a peripheral choroidal melanoma.

Grants: None

Retina Vitreous

P31 | Sectoral Optical Atrophy after Stereotactic Radiotherapy for neovascular Age-related Macular Degeneration: a case report

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Purpose: To investigate optic neuropathy in the sense of a radiation optic neuropathy in eyes adjunct treated with low dose stereotactic radiation therapy (SRT).

Methods: Case report of a 68-year-old Caucasian male with suspicion of neovascular AMD in the left eye. Adjunct SRT was performed after 21 intravitreal injections of ranibizumab following a treat-a-extend regimen (TER) unsuccessful of achieving a dry retina. Parameters which have been evaluated over 10 years included: Spectral-Domain Optical Coherence Tomography (SD-OCT), fluorescein angiography (FA), indocyanine-green angiography (ICG), angio-OCT and perimetry examinations.

Results: Six months after SRT subretinal fluid (SRF) disappeared and relatively dry retinal conditions were maintained until today with only some subtle SRF to return at times, due to which the patient is kept in treatment plan, following a treat and extend regimen. The retina had not only been dry but the interval could be extended up to 12 weeks. After almost two years of therapy, the intervals were slowly shortened again to 4 weeks and ranibizumab was substituted for aflibercept. Treatment was kept on a 4 weeks-interval always showing an incomplete absorption of SRF. After 4 years, for the first time again, dry retinal conditions could be obtained. Since then, intervals are kept between 5-6 weeks, not extendable any higher. The current best-corrected visual acuity (BCVA) counts 20/63 Snellen chart
36 months after SRT sectoral atrophy of the optic disc has been noticed. Morphologically the atrophy was untypical for glaucoma. OCT images showed a reduced ganglion cell layer nasal inferior to the fovea, where SRT treatment was applied. Regarding follow-up images it is evident, that retinal atrophy started at one point, continued and then stabilized after 36 months post-SRT with a ganglion cell layer thickness of ca. 8-9 □m (central ring). Our patient showed a decreased superficial and deep vascular plexus density depicted on angio-OCT images, confirming retinal ischemia in the same part of the posterior pole. Optic disc analysis showed a correlating thinning of nerve fibers in the temporal inferior part of the optic disc. A performed perimetry confirmed a scotoma in the nasal upper quadrant.

Conclusion: To conclude we can state, that optical atrophy preceding retinal ischemia or retinal injury due to SRT is a side effect that hasn’t been taken into consideration until now.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P32 | Keratoconus in a patient with Pseudoxanthoma elasticum

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Purpose: To report a case of Pseudoxanthoma elasticum (PXE) that displayed clinical and tomographical signs of keratoconus.

Report of the case: A 64-year-old female with histologically confirmed PXE, diagnosed 12 years previously was referred to our clinic because of abnormal findings in both corneas. She had been under treatment of a retina specialist because of the presence of choroidal neovascularization (CNV) secondary to Angioid streaks and had received anti-vascular endothelial growth factor (anti-VEGF) therapy to control the CNV over the last 12 years. The best-corrected distance visual acuity (CDVA) was < 0.1 in the right eye and 0.32 in the left eye. The subjective refractions of right and left eyes were -8.25sph -2.50cyl @ 101° and -6.00sph -1.25cyl @ 73°, respectively. Slit-lamp examination revealed no direct signs of ectasia. Fundus examination showed vital optic discs (papilla) a C/D ratio of 0.2 and a macular scar in both eyes. Scheimpflug corneal tomography revealed irregular astigmatism typical for keratoconus in both eyes with the thinnest point of the cornea being 464 µm in the right eye and 501 µm in the left eye, and maximum keratometry values (Kmax) of 55.1 D in the right eye and 46.8 D in the left eye. Follow-up exams showed stability of the corneal findings and the patient was prescribed rigid contact lenses, which improved vision from 0.1 to 0.4 in the right eye and from 0.32 to 0.8 in the left eye.

Conclusions: PXE is a disease affecting collagen, including the sclera and the cornea. Keratoconus is characterized by the weakening and thinning of the corneal stroma. Its pathogenesis appears to involve a complex interaction of both genetic and environmental factors. Our clinical ocular examination showed that the patient not only developed choroidal neovascularization due to PXE, but also keratoconus. We wish to highlight that collagen disorders may affect not only the retina, but also other parts of the eye, and call for vision care professionals to remain vigilant for secondary pathologies that lie elsewhere in the eye. Any patient with noninflammatory connective tissue disease who presents for an eye examination should be carefully examined for the presence of keratoconus.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P33 | Biomechanical characterization of a COL5A1 -haploinsufficient mouse model of classic type Ehlers-Danlos syndrome with tensile extensometry and OCT elastography

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Purpose: To quantify biomechanical properties in a col5A1-based mouse model for classic type Ehlers-Danlos syndrome (EDS) and to compare two different measurement approaches suited for murine corneal mechanical characterization.

Setting/Venue: Laboratory of Ocular Cell Biology, Center for Applied Biotechnology and Molecular Medicine, University of Zurich, Zurich, Switzerland OPTIC team, Computer Vision Laboratory, ETH Zurich, Switzerland

Methods: A total of 14 eyes of a col5A1-haploinsufficient mouse model (col5A1het) and14 eyes of wild-type littermates (wt) were analyzed by optical coherence elastography(OCE) and 2D stress-strain extensometry. Quasi-static OCE was conducted non-invasively during ambient pressure modulation by -3 mmHg. Corneal displacements were analyzed by phase-difference processing. 2D extensometry measurements consisted of a pre-conditioning cycle, followed by a stress-relaxation test and finally arupture test.

Results: Compared to wt corneas, col5A1het corneas had a thinner corneal thickness(125+-11 vs 148+-10 micrometer, "p < 0.001"). and short-term elastic modulus in het corneas was significantly increased in OCT measurements (506+-88 vs 430+-103 kPa,p=0.023), and. the same trend was observed in stress-strain extensometry (30.7+-12.1kPa vs 21.5+-5.7, p=0.057). In contrast, in stress relaxation tests, col5A1het corneas experienced a stronger relaxation (55% vs 50%, p=0.010). The two distinct behaviors indicate increased short-term stiffness and reduced long-term stiffness in het corneas.

Conclusions: A reduced expression of COL5A1 in cornea seems to predominantly affect the viscoelastic properties of the tissue. The results presented here support and rationalize the counterintuitive clinical reported findings, in which even thinner corneas with potential alterations in the structure of collagen manage to maintain a normal topographic pattern.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P34 | High-fluence accelerated epi-off corneal cross-linking provides corneal strengthening similar to the Dresden protocol

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Purpose: To quantify CXL induced changes in corneal biomechanics achieved by optimized ultraviolet-A (UVA) fluence, intensity and exposure time.

Methods: Three hundred fresh enucleated porcine eyes were divided equally into 6 groups for analysis. All samples underwent epithelial debridement and soaking with riboflavin 0.1% solution for 20 minutes. CXL was performed using 5 different epithelium-off protocols: S-CXL (intensity in mW/cm2 * time (minutes); 3*30), A-CXL (9*10) [total fluence: 5.4 J/cm2], A-CXL (9*13’20’’), A-CXL (18*6’40’’) [total fluence: 7.2 J/cm2, A-CXL (18*9’15’’) [total fluence: 10 J]. Control corneas were treated similarly and not irradiated. Young’s modulus of 5-mm wide corneal strips was used as an indicator of corneal stiffness.

Results: All irradiated groups had significantly higher Young’s modulus than controls ($p < 0.05$): with a stiffening effect of 133% S-CXL (3*30), 122% A-CXL (9*10), 120% A-CXL (9*13’20’’), 114% A-CXL (18*6’40’’) and 149% A-CXL (18*9’15’’). The new accelerated epi-off protocol A-CXL (18*9’15’’) had the highest stiffening effect among all our study groups compared to controls. Elastic modulus at 5% strain (from 1 to 5% strain) showed a significant difference between A-CXL (18*9’15’’) and three other accelerated protocols: A-CXL (9*10) ($p=0.01$), A-CXL (9*13’20’’) ($p=0.003$) and A-CXL (18*6’40’’) ($p=0.0001$) respectively.

Conclusions: We identified a high-fluence epi-off clinical protocol using A-CXL (18*9’15’’) that provides a significantly more stiffening effect than any other accelerated protocols and is indistinguishable from the Dresden protocol while accelerating irradiation time from 30 to 9 minutes. This new protocol might become a new standard in epi-off CXL treatments.

Grants: This project has been funded by the Light for Sight Foundation, Zurich, Switzerland

External Disease / Cornea

P35 | Effect of repeated riboflavin application during CXL on corneal biomechanics

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Purpose: To evaluate the impact of applying riboflavin repeatedly during corneal cross-linking (CXL) on the corneal biomechanical strength of ex vivo porcine corneas.

Setting/Venue: Laboratory for Ocular Cell Biology, Center for Applied Biotechnology and Molecular Medicine, University of Zurich, Zurich, Switzerland and ELZA Institute,Dietikon/Zurich, Switzerland

Methods: Sixty-six porcine corneas with intact epithelium were divided into 3 groups and analyzed. All corneas were pre-soaked with an iso osmolar solution of 0.1%riboflavin in PBS ("riboflavin solution"). Corneas in Groups 1 and 2 were irradiated with a standard epi-off CXL (S-CXL) UV-A irradiation protocol (30 minutes, 3 mW/cm2).Corneas in group 3 served as a no irradiation control. Corneas in group 1 received riboflavin solution during S-CXL irradiation (CXL-PBS-Ribo); corneas in group 2 received only iso osmolar PBS (CXL-PBS). Immediately afterwards, 5-mm wide cornealstrips were prepared, and elastic modulus and stress after relaxation were measured.

Results: Significant differences in stress-strain extensometer were found between the control and S-CXL-treated groups (1 and 2), however no significant difference was observed between groups 1 and 2 (120% and 118.5%; p=0.999).

Conclusions: Compared with applying isosomolar PBS to keep the cornea hydrated during CXL, the application of riboflavin solution does not affect the corneal biomechanical stiffening achieved with standard epi-off CXL.

Financial Interest: None: No commercial relationship
Grants: None

Orbit / Lids / Lacrimal System

P36 | Histologie des Floppy Eyelid Syndroms

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Hintergrund: Wir berichten über die histopathologische Untersuchung eines Oberlides bei Floppy Eyelid Syndrom.

Kasuistik: Ein 43-jähriger Patient stellte sich mit chronischen Beschwerden einer Blepharitis und Konjunktivitis ohne Besserung auf diverse antibiotische und antientzündliche Therapien bei uns vor. In der klinischen Untersuchung zeigten sich eine massive Laxizität und Verdickung der Lider, eine beidseitige chronische follikuläre Konjunktivitis sowie eine Ptosis rechts. Wir stellten die Diagnose eines Floppy Eyelid Syndroms. Die konservative Therapie brachte keine genügende Besserung. Nach chirurgischer Versorgung mittels Oberlidverkürzung und lateraler Kanthopexie rechts wurde das exzidierte Präparat histologisch aufgearbeitet. Es zeigte sich ein deutlich verdicktes Lid mit Verdickung des Bindehautepithels, parapapillärer Hypertrophie und einer chronischen Begleitkonjunktivitis mit einigen Henle'schen Krypten. Dazwischen fanden sich Ansammlungen von eosinophilen Granulozyten. Die Meibom'schen Drüsenläppchen waren rarifiziert, die Drüsenausgänge erweitert. Der Befund ist histologisch mit einem Floppy Eyelid Syndrom vereinbar.

Schlussfolgerung: Wir zeigen ein charakteristisches klinisches Beispiel eines Floppy Eyelid Syndroms mit dazugehörender histopathologischer Aufarbeitung.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P37 | Keratoconus screening in pre-school children using high resolution OCT-based anterior segment tomography

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Purpose: Since the development of corneal cross-linking, early treatment has become important in the pre-school population (aged 2 to 5 years) to stop the disease at its earliest stages. Accordingly, early detection is key. In this age group, children can not usually sit still long enough to allow for precise image capture. In addition, the nature of image capture in current Placido-based and Scheimpflug technologies makes reliable imaging in this age group challenging. Here, we describe a successful and reliable approach for keratoconus screening in pre-school children using high-resolution OCT-based anterior segment tomography.

Methods: Five children between the age of 28 and xx months presented with either a positive family history for keratoconus or with high degrees of astigmatism, as measured using skiascopy. High resolution OCT-based anterior segment tomography (MS-39, CSO Italia, Scandicci, Italy) was performed in all cases to determine keratoconus susceptibility.

Results: Current topographical and tomographical systems show distinct weaknesses when used in pre-school children aged 2 to 5 years: Placido-based topographers have the advantage of rapid capture but go along with intense light, which leads to eyelid closure and/or blinking. Furthermore, these systems only provide anterior curvature information. Scheimpflug-based devices give more complete topographical information, but they need approximately 2 seconds for image capture, which is too long in this age group. High-resolution OCT-based anterior segment tomography allowed for rapid capture of tomographical and topographical data of sufficient quality to unambiguously assess the corneas of children in this age group.

Conclusions: With the introduction of high-resolution OCT-based anterior segment tomography, screening of at-risk pre-school children becomes realistic. Early screening and detection of keratoconus may open alleys for early treatment using corneal cross-linking, when deemed appropriate.

Grants: None

External Disease / Cornea

P38 | Corneal Cross-linking at the Slit Lamp

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Purpose: To describe a new surgical technique where corneal cross-linking (CXL) (to treat corneal ectasias) and photo-activated chromophore for keratitis-CXL (PACK-CXL) are performed while the patient is seated in an upright position at the slit lamp.

Methods: Topical anesthesia is applied in the waiting room, 10 minutes before the procedure.Once in the office or procedure room, eyelids and periorbital areas are disinfected with chloramphenicol and the patient is seated at the slit lamp. Epithelial debridement is performed with a cotton swab soaked in freshly prepared 40% ethanol, using 70 seconds of tapping, followed by gentle pressure to remove the epithelium. The patient is placed in the supine position for riboflavin application for 10 minutes. Stromal thickness is assessed using ultrasound pachymetry after 5 and 10 minutes. Finally, the patient is returned to the slit lamp to receive ultraviolet irradiation.

Results: CXL at the slit lamp is an easy-to-perform technique that substantially reduces the infrastructure needed to perform CXL and PACK-CXL procedures.

Conclusions: A significant advantage of allowing CXL treatment at the slit lamp is that CXL technology can now be used in clinics that do not have easy access to an operating room infrastructure. Slit-lamp CXL can also reduce procedure costs by eliminating the technical fees related to the use of an operating room, making this treatment not only more accessible for patients but also affordable.

Grants: None

External Disease / Cornea

P39 | The Forked Cornea and the Steroid Dilemma - A Case Report

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Purpose: Traumatic central corneal injuries caused by non-sterile foreign objects pose a therapeutic challenge. An immediate steroid therapy scheme can prevent dense corneal scarring but reduces the immune response against suspected pathogens. We report a case of presumed infectious corneal injury that has been treated with topical steroids since initial presentation.

History and Signs: An 8-year old boy presented at the emergency centre after being pricked incidentally by a disposable plastic fork which was contaminated with saliva and food residues. The clinical examination revealed a central, long-distance laceration deep in the stroma. To ensure smooth wound adaption, a bandage contact lens was placed on the cornea and topical antibiotics were started. Topical steroids were immediately established to prevent deep corneal scarring. The boy was monitored at short intervals and checked for early signs of corneal infection. The follow-up after six months showed a good reattachment of the lamellar injury and only a subtle corneal scar. As a result, the visual acuity outcome was 0.64 uncorrected and 1.0 (-1/-0.25/99°) best-corrected, respectively.

Conclusion: In central traumatic corneal injuries with non-sterile foreign bodies, it may be worth taking the risk of early steroid therapy to prevent extensive corneal scarring.

Keywords: traumatic corneal injury, non-sterile foreign body, topical corticosteroid treatment

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P40 | Central vein occlusion after SARS-CoV-2 infection

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It is already known that in the context of a SARS-CoV-2 infection micro thrombi can occur in small capillary vessels. Post-mortem in particular, thrombi have been found in the choriocapillaris. Clinically, there is probably also an association between central vein occlusion and SARS-CoV-2 infection. In the present case, retinal central venous occlusion was described in a patient with COVID infection. The 37 year old patient was treated in the “Bella Vista Clinic” in Speicher. Therapy with Bevacicumab (Avastin, Roche) and Papaverine (Paveron, LINDEN) intravenous with parabulbar injections of Betamethason was initiated. Even if this is not the guideline-based therapy for macular edema in central venous occlusion, complete visual rehabilitation occurred. In accordance with the previous observations of microthombi in choroidal vessels of patients who died of COVID, a thrombotic event in the venous system of the optic disc region can be assumed as the cause. Furthermore, it has been shown that endothelial cells affected by the virus can be edematous thickened constricting the vessel lumen. Vascular inflammation was probably successfully treated with the retrobulbar steroid injections. It is also possible that the systemic effect of Papaverine on vascular smooth muscle (relaxation) has a positive effect. Both the exact mechanism of central retinal vein thrombosis and its therapeutic possibilities remain speculative and need to be investigated in larger case series.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P41 | Behandlung von Hornhautneovaskularisationen und irregulärem Astigmatismus mittels Hornhautgefässkauterisation, und Kontaktlinsen-Anpassung Abstract

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Hintergrund: Hornhautneovaskularisationen mit irregulären Astigmatismus benötigen häufig eine Hornhauttransplantation (DALK oder PKP), die wiederum aufgrund der Vaskularisation risikobehaftet ist. Wir berichten von einem erfolgreich visuell rehabilitierten Patienten, der mittels Gefässkauterisation und Kontaktlinsenanpassung rasch wieder arbeitsfähig wurde.

Anamnese und Befund: Ein 58-jähriger LKW-Fahrer stellte sich mit einer korrigierten Sehschärfe von 1.0 rechts und 0.20 links vor. Biomikroskopisch fanden sich tiefliegende diffuse Hornhautstromanarben bei Hornhautneovaskularisationen in beiden inferioren Quadranten bis zum optischen Zentrum. Ätiologisch war eine tiefstromale Keratitis unklarer Ätiologie (wahrscheinlich herpetischer Genese) fünf Jahre zuvor vorausgegangen.

Therapie und Verlauf: Das Vorderabschnitt-OCT des linken Auges zeigte eine starke ausgeprägte Narbe mit Beteiligung des tiefen Stromas, kompensatorische Verdickung des Epithels auf 220 µm und irregulären Astigmatismus in der tomographischen Analyse. Aufgrund der Hornhautvaskularisation in allen vier Quadranten des linken Auges, wurde eine Gefässkauterisation durchgeführt, die zur kompletten Obliteration der Gefässe führte. , Nach Anpassung formstabiler Kontaktlinsen konnte eine visuelle Rehabilitation auf einen Visus von 0.7p ermöglicht werden.

Diskussion: Dieser Fall veranschaulicht die Komplexität des Managements von Patienten mit ausgeprägten Hornhautvaskularisationen und stark irregulärem Astigmatismus,. Die Behandlung der kornealen Neovaskularisation und Narben ist problematisch. Eine Hornhauttransplantation ist oft die einzige erfolgreiche Behandlung, jedoch mit einem erhöhten Abstossungsrisiko. Vor der Transplantation sollten Alternativen versucht werden, speziell wenn wie im beschrieben Fall der Visus mehr durch den irregulären Astigmatismus als die Narben beeinträchtigt ist.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology, Retina Vitreous

P42 | Importance of early electrophysiology in spasmus nutans

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Background: To underline the importance of early electophysiological examination in clinical practice even when the ophthalmological findings are normal.

Case presentation: A 16-month-old boy with spasmus nutans was referred to an ophthalmological exam. The initial eye examination revealed nystagmus and head nodding compatible with spasmus nutans as well as a hyperopia. At the age of 3 years, a reliable visual acuity testing confirmed low visual acuity. In addition parents reported increased light sensitivity and a better orientation in the dark. An electroretinogram (ERG) was pathologic. A genetical test revealed a homocygotous variant in CNGB3-gene, leading to the diagnosis of achromatospia.

Conclusion: Patients can have multiple pathologies- and on the other side, there may be overlapping signs as the nystagmus seen in spasmus nutans as well as in achromatopsia. With genetic treatment becoming available, it is advisable to apply ERG early as results may be in better in early treatment.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology, Retina Vitreous

P43 | Morphology of serous retinal detachment in morning glory optic disc anomaly in a patient before and after treatment with systemic carboanhydrase inhibitors

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Morning glory optic disc anomaly (MGODA) is a rare congenital defect of the optic nerve head. Ocular complications may include strabismus, reduced visual acuity, retinal detachment and it may have systemic associations like cerebral tissue and cerebral vascular malformations. Retinal detachment in MGODA occurs in 38% of the cases, which is thought to be associated with an abnormal communication between the subretinal and subarachnoid or vitreous compartment.
In the present case, we observed the morphology of the central retina in an adult with MGODA associated serous macular detachment and following carboanhydrase inhibitor supported resolution. A 57-year-old woman with vision loss was diagnosed with a serous macular detachment in the right eye with a MGODA and was treated with systemic carboanhydrase inhibitors. Optical coherent tomography (OCT), fundus autofluorescence (FAF) as well as visual acuity and visual field, were performed at diagnosis and at the follow-up of the unilateral peripapillary serous retinal detachment. The large detachment associated with MGODA showed tendency to resolution at 4 weeks, confirmed on OCT and FAF. Despite morphologic improvement at follow-up and improvement in visual acuity, FAF still showed irregularity compared to the fellow healthy eye. In contrast to the OCT examination, which is very helpful to assess the extent of the neurosensory detachment, the FAF imaging offers an additional tool for follow-up of retinal involvement in this disorder. In addition, the application of carboanhydrase inhibitors showed to be a valid therapeutic option in patients with MGODA-associated serous macular detachment.

Financial Interest: None: No commercial relationship
Grants: None

Uveitis / Intraocular Inflammation

P44 | Remission of Birdshot Chorioretinopathy following autologous hematopoietic stem cell transplantation

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Purpose: To describe the first documented case of a patient in which a birdshot chorioretinopathy (BCR) was successfully treated up to this day by an autologous hematopoietic stem cell transplantation (AHSCT) performed following the diagnosis of a lymphoma.

Method: In 1998, a 46-year-old male patient was diagnosed with a BCR. Immunosuppressives were initiated including systemic and intravitreous corticosteroids, methotrexate, azathioprine, tumor necrosis factor alpha inhibitors and mycophenolic acid derivatives. None of these agents were effective. The only medication that helped was cyclosporine under which the patient developed a chronic kidney failure. In 2017, a diffuse large B-cell lymphoma was diagnosed and a chemotherapy followed. 2019 a recurrence of the cancer was diagnosed. Chemotherapy with an AHSCT was carried out. The lymphoma is in remission up to the current day. Cyclosporine was paused in February 2020. Since then and for the first time in over twenty years, the patient has been free of ophthalmological complaints or active BCR lesions without taking immunosuppressives.

Result: We present the first documented case of a patient with BCR whose disease is successfully in remission without immunosuppressive therapy following an AHSCT. He had a strenuous course of immunosuppressive therapy for over twenty years and lost most of his vision. No therapy was effective except for cyclosporine, which lead to a chronic kidney failure. Due to a recurrent lymphoma, the patient had to undergo an AHSCT.

Conclusion: Patients suffering from BCR usually need a long-standing therapy of immunosuppressive agents. It often takes different approaches until the right drug regimen has been found. If encountered and established long term, adverse events due to immunosuppression are common.
AHSCT following high-dose chemotherapy is used for patients with autoimmune diseases like systemic sclerosis or multiple sclerosis which are resistant to conventional therapies. The hypothesis is that with a high dose chemotherapy, autoaggressive T-Cells get destroyed and from the transplanted stem cells a new, self-tolerant immune system is constructed. Studies support the strong notion that BCR is a T-cell-mediated autoimmune disease. In the case of our patient, the stem cell transplantation treated BCR up to this day. AHSCT has not been considered so far in the treatment of aggressive and therapy resistant BCR, but in this case has been a very successful therapeutic option.

Financial Interest: None: No commercial relationship
Grants: None

Glaucoma

P45 | Two-year outcome of surgery in glaucoma patients

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Purpose: To evaluate the two-year surgical treatment outcome in glaucoma patients.

Methods: A retrospective, single-center interventional study was performed on 54 eyes of 54 patients suffering glaucoma, including: POAG (26 eyes), PEX (20 eyes), pigment dispersion (3 eyes) and secondary glaucoma (5 eyes). Eyes with uncontrolled intraocular pressure (IOP) or signs of glaucoma progression despite medical treatment were included to undergo either trabeculectomy (TE), XEN implantation, combined TE with phacoemulsification (TE+IOL) or XEN implantation with phacoemulsification surgery (XEN+IOL). Primary efficacy outcome was the mean IOP reduction. Secondary outcome was the mean reduction in the number of medications. The data were compared at baseline vs.1 day, 1 week, 1-, 3-, 6-, 12- and 24 month following surgery. For statistical evaluation, ANOVA-based linear mixed-effects models were performed with SPSS®.

Results: The mean IOP reduction in a 2-year follow-up was 30.31% (22.17 vs. 15.45mmHg, $p < 0.001$). The mean number of anti-glaucoma medications was reduced from 2.87 to 0.58 ($p = 0.001$), where TE alone or combined surgeries showed a trend to be more effective than the isolated XEN surgery. Transient IOP hypotony on first postoperative day occurred in PEX patients following TE surgery ($p = 0.024$). At six-month, PEX patients with isolated XEN surgery showed transient IOP increase, whereas those having had combined TE+IOL surgery showed the lowest IOP within the PEX group but also compared to other glaucoma patients ($p < 0.026$).

Conclusions: After 2 years, all performed glaucoma surgeries achieved a significant reduction in IOP and the number of antiglaucoma medications.

Financial Interest: None: No commercial relationship
Grants: None

Others

P46 | Port Delivery System With Ranibizumab (PDS) for nAMD: Updated Data From the Archway Phase 3 Trial

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Purpose: The Port Delivery System with ranibizumab (PDS) is an investigational drug delivery system for the continuous intravitreal delivery of a customized formulation of ranibizumab. The Archway trial is evaluating the safety and efficacy of the PDS for neovascular age-related macular degeneration (nAMD).

Methods: Archway (NCT03677934) is an ongoing, phase 3, randomized, active treatment–controlled trial. Eligible patients had nAMD diagnosed within 9 months of screening and were responsive to anti–VEGF treatment. Patients were randomized 3:2 to treatment with the PDS with ranibizumab 100 mg/mL with fixed 24-week refill-exchanges (PDS Q24W) or intravitreal ranibizumab 0.5 mg injections every 4 weeks (Ranibizumab Q4W). The trial evaluated the noninferiority (NI) and equivalence of the PDS Q24W versus Ranibizumab Q4W on the primary endpoint of best-corrected visual acuity (BCVA) change from baseline averaged over weeks 36/40 (NI margin, –4.5 letters; equivalence margin, ±4.5 letters).

Results: In Archway 248 patients with PDS Q24W and 167 with ranibizumab Q4W were treated. Data show extended results through ≥48 weeks of follow-up, covering 2 complete refill-exchange intervals for PDS patients. Change in adjusted mean BCVA score from baseline averaged over weeks 44/48 was 0.0 and +0.2 letters in the PDS and Ranibizumab Q4W arms, respectively. Results showed NI of PDS to monthly treatment, with a difference (95% CI) of –0.2 (–1.8, +1.3) letters between arms. Adjusted mean center point thickness change from baseline results were consistent from the primary analysis through week 48. 98.4% and 94.6% of PDS patients did not receive supplemental ranibizumab treatment during the first or second refill-exchange intervals, respectively. The mean duration of treatment was 77.9 and 78.5 weeks in the PDS and ranibizumab Q4W arms, respectively. The total number of treatments, including initial fill, refill-exchanges, and supplemental injections, was 3.9 (PDS) versus 19.5 (ranibizumab Q4W). The PDS ocular safety profile was generally unchanged from the primary analysis. Systemic safety findings were comparable across arms.

Conclusions: Even after week 44/48, PDS Q24W treatment resulted in vision outcomes that were noninferior to ranibizumab Q4W arms. During 78 weeks, patients in the PDS arm received ~5x fewer ranibizumab treatments than patients in the ranibizumab Q4W arm. The PDS was generally well tolerated, with a favorable benefit-risk profile.

Grants: F. Hoffmann-La Roche Ltd. (Basel, Switzerland) provided support for the study and participated in the study design; conducting the study; and data collection, management, and interpretation.

Uveitis / Intraocular Inflammation

P47 | Multimodal Imaging-findings and their course under therapy in two patients with ocular syphilis

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Purpose: To describe multimodal imaging features and their course under treatment in two cases with ocular syphilis.

Methods: Two cases with newly diagnosed ocular syphilis were followed up under therapy for 24 and 13 months respectively. The diagnosis was confirmed with positive serologic tests in both patients. Color photographs, fundus autofluorescence and optical coherence tomography (OCT) were obtained in each case on each visit. Fluorescein angiography was performed at the beginning as well as on final visits in both cases. Indocyanine green angiography was performed only in first case on the initial visit.

Results: Both patients had bilateral ocular involvement. At initial presentation, they were 53 and 67 years old, respectively. None of them had innate or acquired immune deficiency. Both cases had vitreous inflammation and only the first case had anterior segment involvement in form of endothelial precipitates. Best corrected visual acuity (BCVA) on initial visit was 0.8 in right eye and 0.1 in left eye in first case, 0.8 and counting fingers in second case respectively. Posterior segment examinations showed yellowish placoid outer retinal lesions in both eyes in the first case and optic disc swelling in both eyes as well as blot shaped hemorrhages on left eye in the second case. Fluorescein angiography showed progressive hyperfluorescence in the area of the lesion in both cases as well as Hot Disc- and vasculitis-signs in second case. Indocyanine green angiography detected a hypofluorescent spots corresponding to the lesions. OCT performed in the area of the lesion revealed loss of the external limiting membrane, disruption of the inner segment/outer segment band and nodular thickening of the RPE. The patients were followed up in frequent manner in the first month after initiation of antibiotic and anti-inflammatory treatment. Anterior segment and vitreous inflammation disappeared rapidly. Outer retinal abnormalities on OCT imaging were recovered gradually with almost complete restoration of the involved layers. Visual acuity increased. Finally, both patients were free of inflammation, had normal fundus appearance, almost normal OCT as well as fluorescein angiography findings and BCVA 1.0 in both eyes.

Conclusion: Since patients with ocular syphilis have wide diversity of clinical manifestations it is very challenging for ophthalmologists to diagnose them. Multimodal imaging technic may help forehand diagnosis and proper treatment.

Financial Interest: None: No commercial relationship
Grants: Keine Zuschüsse

Cataract / Refractive Surgery / Contact Lens

P48 | Femtosecond Assisted cataractoperation and implantation of a bifocal IOL in a case of anterior lenticonus in Alport syndrome

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Purpose: To present a case of bilateral femtosecond-laser-assisted cataractsurgery (FLACS) in a patient (42 year old male) with severe anterior lenticonus and cataract, due to Alport syndrome.

Methods: The Victus (Technolas, Bausch and Lomb) femtolaser platform was used to perform the capsulotomy (5mm of diameter) and the fragmentation of the nucleus. An Oculentis bifocal (MF20) IOL was implanted in both eyes. Both operations were uneventful.

Results: Preoperatively BCDVA was 0.3 and 0.5 and the Spherical Equivalent (SEQ) -17.0 dpt and -12.0 dpt in the right and left eye accordingly. 6 weeks postoperatively the UCDVA was 0.9 and 0.8, UCNVA was Jaeger 3 in both eyes and binocular UCNVA was J1 with an SEQ of -0.125 dpt and +0.5 dpt in the right and left eye accordingly.

Conclusions: FLACS was a secure option in this case with an anterior lenticonus and cataract, due to Alport syndrome and was performed without complications. The implantation of the bifocal IOL led to a high uncorrected visual acuity for far and near distance. Patient satisfaction was also very high with this procedure!

Theme:
Femtolaser-Assisted Cataract Surgery (FLACS)

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P49 | Evaluation of non-invasive automatic ocular surface analyzer for dry eye diagnosis in patients with dry eye disease and control subjects

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Purpose: 40% of patients with dry eye disease (DED) do not seek medical care at all. Therefore, easy access to a DED diagnostic tool in a paramedical setting would have the chance to improve patients' burden. However, no single gold standard symptom or sign correlating with the extent of multifactorial DED has been established, which still makes diagnostic approaches challenging. The aim of this study was to compare diagnostic performance of a non-invasive, automated ocular surface analyzer (IDRA, SBM Sistemi, Turin, Italy) to routine clinical diagnostic tests for DED diagnosis in symptomatic DED patients and control subjects.

Methods: 68 eyes of 35 symptomatic DED patients (Ocular Surface Disease Index [OSDI] ≥ 13) and 66 eyes of 34 healthy subjects (OSDI < 13) were assessed prospectively for clinical signs and symptoms of DED. Medical history, slit lamp examination for signs of DED (fluoresceine tear film break-up time, corneal staining grading score), ocular surface analyzer measurements and Schirmer's test were analyzed in both groups.

Results: Non-invasive first break-up time, tear meniscus height, lipid layer thickness, meibomian gland deficiency, fluoresceine break-up time and corneal staining grading were different between symptomatic DED patients and the control group (4.62 ± 0.87 sec vs. 7.56 ± 3.17 sec, 0.19 ± 0.08 mm vs. 0.22 ± 0.05 mm, 86.21 ± 12.85 nm vs. 92.01 ± 8.42 nm, 47.46 ± 14.80 vs. 27.31 ± 12.70, 5.75 ± 2.54 sec vs. 10.53 ± 2.88 sec and 1.99 ± 1.22 vs. 0.30 ± 0.55, respectively). Diagnostic accuracy analyzed by receiver operating characteristics with the area under the curve (AUC) was best for fluoresceine break-up time, non-invasive first break-up time and meibomian gland deficiency (0.90, 0.87 and 0.86, respectively). When the diagnosis of DED was made based on non-invasive first break-up time, sensitivity was 88% and specificity was 74% with a cutoff set at 5.31 sec. When the diagnosis of DED was made based on meibomian gland deficiency, sensitivity was 82% and specificity was 77% with a cutoff set at 33.75.

Conclusion: The non-invasive, automated ocular surface analyzer showed similar diagnostic accuracy as compared to routine clinical diagnostic tests. The analyzer holds the potential of an easy-to-access diagnostic tool in the primary care or paramedic setting to detect DED and improve the access to DED treatment.

Patient: 61-year-old female patient examined at day 1 after uncomplicated phacoemu

Financial Interest: None: No commercial relationship
Grants: None

Cataract / Refractive Surgery / Contact Lens

P50 | Rare foreign body in anterior chamber following cataract surgery: about an eyelash

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Purpose: finding a cilium in the anterior chamber is a rare condition that has been reported in few cases following cataract surgery or penetrating eye injury. We describe an eyelash trapped in the anterior chamber after uneventful cataract surgery and discuss on a hypothetic migration mechanism.

Patient: 61-year-old female patient examined at day 1 after uncomplicated phacoemulsification procedure in the right eye. Clinical status showed 20/20 visual acuity, normal IOP and little inflammation in the anterior segment. Slit lamp examination revealed a cilium in the anterior chamber, partially trapped in the paracentesis. The cilium was removed the following day and no long-term complications were observed.

Discussion: The presence of an intraocular eyelash is a rare surgical condition following cataract surgery. The reaction induced by the cilium in the eye is variable from no inflammation to severe endophthalmitis. In our case, faulty removal of the operating field at the end of surgery induced inflow of used water that flooded the eye's surface. This could explain how a cilium may have entered the eye through fresh incision.

Conclusion: Intraocular eyelash after surgery is a rare complication and can lead to postoperative endophthalmitis. Thorough eyelid draping and operating field removing minimize the risk of such events, and therefore reduce the rate of postoperative endophthalmitis. Immediate observed intraocular eyelash after surgery should be promptly removed.

Financial Interest: None: No commercial relationship
Grants: None

Uveitis / Intraocular Inflammation

P51 | Successful Treatment and Long-Term Stabilisation of a 32-Year-Old Patient with Uveitic Vogt-Koyanagi-Harada (VKH) Presentation with Topical Corticosteroid Monotherapy

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Vista Klinik

Background and Aim: Vogt-Koyanagi-Harada disease (VKH) is a multisystem disease which can affect the eyes, inner ear, the skin and the meninges of the central nervous system. Its most common first presentation is a bilateral diffuse uveitis. This is the second phase in a common development that can be divided into a prodromal, acute uveitic, convalescent and chronic recurrent stage.

Case Presentation: A 32-year old male patient of Indian origin presented with a decrease in vision and uveitis intermedia since one month in a private practice and was referred to our clinic. The OCT revealed bilateral exudative detachment of the central retina. Fundus pictures showed a typical Sunset Glow Fundus. In the fluorescein angiography a papillary hyperfluorescence (hot disc) could be observed. Additionally, cutaneous findings were sharply limited hypopigmentated lesions on both arms. Other inflammatory pathology could be excluded. Altogether, the clinical presentation fulfilled the criteria for an incomplete (without neurologic symptoms) Vogt-Koyanagi-Harada disease, which could further be confirmed by a blood test.

Conclusion: We managed to successfully treat and stabilize a 32-year-old patient with uveitic Vogt-Koyanagi-Harada (VKH) presentation with topical corticosteroid monotherapy. Oral corticosteroids, which are currently thought to be an essential component of initial treatment, haven't been used. Topical steroids (Pred Forte 1% drops hourly and Ultracortenol lotion at night) were initially applied for 2.5 months until a complete regression of the macular oedema could be proven in OCT. Pred Forte 1% could then be reduced step by step during the next 6 months while the situation was found to be stable in OCT check-ups. After these 6 months, the medication has been reduced to one drop of Pred Forte 1% every second day. The patient has been using this medication for the past 4 years and proved to be stable.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology

P52 | Melanopsin activation in healthy humans from flash VEPs

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Purpose: The melanopsin photoreceptive system mediates non-visual light-based responses such as circadian entrainment and pupil light reflex. Even in absence of rods and cones, melanopsin-expressing retinal ganglion cells (mRGCs) can signal light information to the brain. Animal studies suggest however that melanopsin can influence the primary visual pathway via its synaptic contacts in the lateral geniculate nucleus. On electroencephalography (EEG) of blind humans with intact mRGCs, blue light exposure results in modulation of occipital alpha power, presumably from melanopsin interaction with rods and cones. It remains unclear if melanopsin activation impacts the visual evoked potential (VEP).

Methods: We recorded VEPs with 128-channel EEG in 30 healthy volunteers (age mean±SD:27.4±3.9yrs). Three different series of light flash stimuli having 630nm (red) or 445nm (blue) wavelength and intensity ranging from 0.00003 to 150cd/m2 were presented. Dark adaptation was used to sensitize rods. Light stimuli were pre-selected for preferential activation of M-L cones with red lights, rods with dim blue lights and melanopsin and S-M cones with bright blue lights. Each stimulus was repeated 10 times. The first melanopsin-activating light stimulus (150cd/m2 blue) was considered a dark-adapted response (DA-mel) compared to subsequent responses considered as light-adapted (LA-mel). We averaged and analyzed VEP amplitude and latency of the positive (P1) peak at an occipital electrode (Oz) as well as the global field power (GFP).

Results: VEP P1 amplitudes to DA-mel were larger and latencies were shorter compared to all other VEPs (LA-mel, cones and rods). VEP P1 amplitude of LA-mel was equivalent to the VEP of brightest cone stimulus (red 30cd/m2). For GFP between 91 and 149ms after light stimulus, a significant difference was found between DA-mel and brightest cone stimulus conditions.

Conclusion: Under photopic conditions, melanopsin activation did not alter the VEP, as compared to M-L cone activation to brightest stimulus. Under dark adaptation, the shorter latency of VEP from bright vs dim blue light stimulation suggests a melanopsin influence on rod and cone activity. The interaction of melanopsin, rods and S-M-L cones may be synergistic or antagonistic, depending on the light conditions.

Financial Interest: None: No commercial relationship
Grants: None

Glaucoma

P53 | Uveales Effusionssyndrom, Myopisierung und bilateraler sekundärer Winkelblock als Erstmanifestation eines systemischen Lupus erythematodes (SLE)

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Hintergrund: Winkelblockglaukome bei Patienten mit asiatischer Herkunft sind relativ häufig, jedoch ist die Manifestation eines Winkelblockes im Rahmen einer systemischen Erkrankung selten.

Fallpräsentation: Zuweisung einer 40-jährigen asiatischen Patientin mit beidseitigem Winkelblock, wobei sich der Augendruck trotz topischer und systemischer Drucksenkung und YAG-Laseriridotomie kaum senken liess. Vorbekannte leichte Myopie beidseits.
Ophthalmologische Befunde bei Erstuntersuchung: Visus OU korrigiert 1.0 (Myopie ca -6), Augendruck OD 31 und OS 32mmHg, vorderer Augenabschnitt OU mit ausgeprägter Lid- und Bindehautchemosis, Vorderkammer flach, Iridotomie offen, Pupille rund, spielend, Linse klar. Fundus: OU Papille vital, randscharf, 0.5 exkaviert, Makula mit Pigmentverschiebung, Netzhaut anliegend. Makula-OCT OU initial mit Netzhautfalten, im Verlauf zentral zusätzlich subretinale Flüssigkeit. Papillen-OCT unauffällig.
Bei atypischer Manifestation eines beidseitigen akuten Winkelblockes einer myopen Patientin zusammen mit obengenannten zusätzlichen okulären Auffälligkeiten erfolgte ein systemischer Work-up: das Labor zeigte eine erhöhte Kreatininkinase und Myoglobin, das CT Thorax / Abdomen zeigte bilaterale Pleuraergüsse, Aszites, Perikarderguss und eine Lymphadenopathie ohne Hinweise auf eine Neoplasie. Die Elektroneuromyographie war hinweisend auf eine Myopathie. Immunologisch lagen hochtritrig antinukläre und antizytoplasmatische Antikörper vor.

Beurteilung: Im Zusammenhang mit den systemischen Befunden handelt es sich hier um ein choroidales Effusionssyndrom mit Augendruckerhöhung und Myopisierung von circa 5 Dioptrien bei Polyserositis mit kardiopulmonaler Dekompensation im Rahmen eines systemischen Lupus erythematodes.
Eine systemische sowie topische Therapie wurde gestartet (Methylprednisolon, Azathioprin, Rituximab, Furosemid; resp. Cosopt, Alphagan, kurzfristig Diamox).
Dank der systemischen Therapie erholte sich die Augensituation vollständig (Tensio normal, Normalisierung der Refraktion, vollständige Resorption der Ödeme und der subretinalen Flüssigkeit).

Schlussfolgerungen: Ein uveales Effusionssyndrom mit bilateralem sekundärem Winkelblock und Myopisierung kann eine Erstmanifestation eines systemischen Lupus erythematodes sein. Dabei besteht meist systemisch eine Polyserositis und Nephropathie. Hochdosierte Steroide und eine immunsuppressive Therapie sollten sofort begonnen werden.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P54 | Acute vision loss and dermal necrosis after nose filler

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Purpose: Hyaluronic acid based dermal fillers are commonly used in aesthetic medicine to enhance and contour facial features. Intravascular injection especially in non-surgical rhinoplasty and subsequent occlusion of retinal vessels are a very uncommon complication associated with blindness.

Methods: We discuss a case of a 47-year old woman admitted to the emergency department at University Hospital Zurich (Switzerland) experiencing acute onset of blindness in the left eye minutes after elective subcutaneous injection of calcium-hydroxylapatite-based filler (Radiesse) for straightening the nasal bridge.

Results: Acute vision loss occurred on the left eye after injection with late onset cutaneous necrosis in the left periocular and frontal area. CT-scan and MRI showed filler particles within the orbita. Anterior segment with posterior synechia of the pupil, flare in the anterior chamber. Fluorescence-angiography showed choroidal ischemia and leakage of the retinal vessels in the late frames. The OCT-scan did not show signs of reduced perfusion or ischemia performed 4 hours after injection.

Conclusions: Total or partial occlusion of the central retinal artery and surrounding blood vessels by particles of intravascular calcium-hydroxylapatite particles from aesthetic procedures are a severe complication and therapeutic approaches are scarce.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P56 | Simple Limbal Epithelial Transplantation (SLET), a simple surgical procedure to manage ocular surface conjunctivalization related to a vernal keratoconjunctivitis.

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PURPOSE: To report modified SLET technic used to cure conjunctivalization related to chronic vernal keratoconjunctivitis.

METHOD: A 27-year-old woman underwent SLET in her left eye for unilateral limbal stem cell deficiency with a subtotal conjunctivalization of the cornea related to chronic vernal keratoconjunctivitis. Medical history included chronic allergies located in her eyes. No systemic or local treatment. At her first evaluation she exhibited past ocular allergy with chronic photophobia and reactional ptosis in her left eye. Preoperative best corrected visual acuity was 0.8 in her right eye and 0.04 in her left eye. At the slit lamp, inferior corneal scare in the right eye and subtotal conjunctivalization with heterogeneous fluorescein staining in the left eye were observed. Corneal sensitivity was normal in both eyes. Intraocular pressure was 12 and 13 respectively in the right and left eye. Conjunctiva was normal. Surgery included limbo conjunctival sample harvested from the right eye. Preparation of the SLET: the sample was cut in ten pieces and fix to the surface of the cornea using fibrin glue. bandage soft contact lens was placed at the end the procedure. Patient was followed during 11 months, assessed for stable corneal epithelialization, reduction of corneal vascularization, recovery of corneal transparency and visual acuity with or without corrections.

RESULTS: Corneal epithelialization was stable after 11 months, no corneal neovascularization was observed, transparency was recovered with residual local scares. Non corrected visual acuity was 0.08 and best corrected visual was 0.12.

CONCLUSIONS: SLET is a simple and efficient technic to manage complicated cases like subtotal conjunctivalization related to chronic vernal conjunctivitis. This technic can be proposed to treat unilateral limbal stem cell deficiency of other etiologies.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P57 | Structural, microvascular and functional findings associated with fovea plana

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Purpose: To analyze structural, microvascular and functional changes associated with fovea plana.

Methods: A retrospective case series was performed on 6 patients between the age of 10 and 65 years (2 female, 6 male) with a clinical picture of fovea plana. Ophthalmic evaluation included: best-corrected visual acuity (BCVA), clinical, fundus photographic, optical coherence tomography, optical coherence tomography angiography, fluorescein angiographic and electrophysiological findings.

Results: Two patients had monolateral and four patients bilateral fovea plana. BCVA ranged from 0.32 to 0.8, with a spherical error ranged from -4.0 to +14.0 dpt. Posterior segment changes included elevated papillomacular retinal folds (1 patients, 2 eyes); uveal effusion syndrome (1 patients, 2 eyes); crowded optic discs (2 patients, 3 eyes). OCTA imaging of the superficial- (SFZ), intermediate- (IFZ) and deep foveal avascular zone (DFZ) confirmed absence or marked reduction of the capillary-free zone as follows: in 7 eyes (SFZ), 9 eyes (IFZ), 4 eyes (DFZ) and 5 eyes (SFZ), 3 eyes (IFZ), 8 eyes (DFZ), respectively. Visual evoked responses as well as those recorded from mfERG and ffERG were normal to slightly reduced.

Conclusion: A wide variety of clinical, microvascular and electrophysiological findings may be accounted in patients with fovea plana. In the presence of structural and microvascular alterations but almost unaffected function, an underling preserved photoreceptors in patient with a clinical picture of fovea plana, might be supposed.

Financial Interest: None: No commercial relationship
Grants: keine

Pathology / Intraocular Tumours

P58 | Métastase choroïdienne maculaire d'un adénocarcinome de bas grade du rectum

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Introduction: Les métastases choroïdiennes sont les tumeurs malignes intra-oculaires les plus fréquentes dans la population adulte. Les néoplasies menant le plus couramment à ces métastases incluent les cancers mammaires (45%), pulmonaires (25%), et plus rarement les carcinomes du tractus gastro-intestinal (4%), dont le rectum est un site primaire moins probable (< 0.5%). Au fond d'œil, les métastases choroïdiennes apparaissent en général sous forme de masses blanchâtres sous-rétiniennes (94%), associées à un décollement exsudatif (73%). Leur traitement est multidisciplinaire et dépend de l'état général du patient, du nombre et de la localisation des lésions.

Anamnèse et examen médical: Une femme de 35 ans, avec un diagnostic récent d'adénocarcinome rectal de bas grade, se plaint d'un scotome rapidement progressif à l'œil gauche. L'acuité visuelle est de 1.0 aux deux yeux. Au fond d'œil, on note une lésion non pigmentée au pôle postérieur. L'OCT maculaire montre un bombement choroïdien avec du liquide sous-rétinien. Neuf jours plus tard, la vision de l'œil gauche a chuté à 0.5, avec une augmentation de la lésion (H = 2.1mm à l'US) et du liquide sous-rétinien. Une angiographie panoramique (HRA 150°) au vert d'indocyanine ne met pas en évidence d'autres lésions bilatéralement. À la fluorescéine, de multiples pin-points apparaissent à la surface de la lésion. Ces éléments sont évocateurs d'une métastase unique, rapidement évolutive de la choroïde de l'œil gauche. La localisation maculaire écarte la possibilité d'une biopsie transvitréenne.

Prise en charge: Le PET-CT du corps entier ne trouve pas de néoplasie primaire autre que la tumeur rectale connue et objective deux métastases hépatiques. Une radiothérapie ciblée de la choroïde postérieure gauche est initiée (photons de X: 10 x 3 Gy) ainsi qu'une réduction par radio-chimiothérapie (type FOLFIRINOX) néoadjuvante, en vue d'une chirurgie de la tumeur primaire. Trois mois plus tard, l'acuité visuelle a récupéré jusqu'à 1.0, avec une cicatrice tumorale plane au fond d'œil.

Conclusion: Les cancers rectaux sont rarement à l'origine de métastases choroïdiennes. Notre cas illustre la possible croissance agressive d'une telle lésion, nécessitant un diagnostic et prise en charge multidisciplinaire rapides. Une radiothérapie par photons, dont le volume cible est guidé par l'examen ophtalmologique, est souvent le traitement de choix.

Financial Interest: None: No commercial relationship
Grants: None

Glaucoma

P59 | Oxygenation in glaucoma patients: Influence of age and oxidative stress

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Purpose: To evaluate retinal oxygenation in glaucoma patients and to compare it with that of healthy controls.

Methods: Retinal vessel oxygen saturation was measured in 46 eyes of 34 Caucasian individuals with primary open angle glaucoma (POAG) and in 21 eyes of 17 age-matched controls using the oximetry tool of Retinal Vessel Analyser (RVA: IMEDOS Systems UG, Jena, Germany). The mean oxygen saturation of the major arterioles (A-SO2) and venules (V-SO2), as well as the corresponding arterio-venular difference (A-V SO2), were calculated. Glaucomatous damage was assessed by Optical Coherence Tomography (Carl Zeiss Meditec, Dublin, CA, USA) and static automated perimetry (Octopus, program G2/ standard strategy: Haag-Streit International, Köniz, Switzerland). In addition, we calculated the mean retinal oxygen extraction (O2-E) per micron of nerve fibre layer thickness, O2-E [µm/%] by dividing the mean retinal nerve fibre layer (RNFL) thickness with the mean A-V SO2.

Results: In glaucoma patients, A-SO2 and V-SO2 values were significantly increased and their difference decreased, when compared to controls ($p < 0.017$; linear mixed-effects model). Whereas V-SO2 and A-V SO2 were not influenced by age, the A-SO2 was severely reduced and the O2-E significantly increased in elderly glaucoma patients, than in younger glaucoma patients ($p= 0.003$, correspondingly $p= 0.004$). Also, higher O2-E in glaucoma patients correlated negatively with the neuroretinal rim area ($p < 0.019$), and positively with the mean defect of the visual field ($p= 0.012$).

Conclusion: The presented structure-metabolic approach suppose that ganglion cells axons in glaucomatous eyes are influenced by aging and are probaly more exposed to oxidative stress, which seems to contribute to progression of glaucomatous damage.

Key words: glaucoma - optic nerve damage - retinal vessel oxygen saturation – oxygen exposure

Financial Interest: None: No commercial relationship
Grants: Margarita G. Todorova was partially supported by unrestricted grant by OPOS (Stiftung Ostschweizerische Pleoptik- und Orthoptik- Schule).

Uveitis / Intraocular Inflammation

P60 | Atypical Bilateral Fuchs Uveitis in a HLA-A29-Positive Patient: a Challenging Diagnosis

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PURPOSE: The aim of this report is to describe the characteristics of a patient presenting an atypical bilateral Fuchs uveitis and the procedures needed to rule out the differential diagnosis.

BACKGROUND: Fuchs uveitis syndrome (FUS) is a chronic, typically unilateral, mild inflammatory disorder involving the anterior segment and vitreous, with insidious onset and low-grade activity. This syndrome can have a significant impact of a patient's quality of life, and the diagnosis is based on clinical findings as no confirmatory laboratory tests are available. In the literature, FUS is described as monolateral in 90% of cases.

CASE DESCRIPTION: We describe the case of a 45-year-old melanoderm female patient, presented to our clinic with a bilateral mild loss in visual acuity (0.7 decimals), presence of diffuse stellate keratic precipitates, mild flare and minimal cells reaction in the anterior chamber, severe vitreous haze and cells. Bilateral iris atrophy and monolateral iris nodules were observed. Intraocular pressure was normal, as well as the crystalline lenses. No anterior or posterior synechiae were noticed. Fluorescein and indocyanine green angiography, as well as macular optical coherence tomography were unremarkable for both eyes, excluding a posterior uveitis. After extensive systemic workup, other uveitis entities were ruled out, the only finding was the positivity for HLA-A29. An oral steroid treatment has been administered without any clinical improvement. The clinical presentation, the absence of any identifiable systemic etiology and the non-responsiveness to steroid treatment lay for the diagnosis of bilateral FUS.

CONCLUSION: This case report shows a rare finding of bilateral FUS. This atypical presentation has an important clinical relevance in order to acknowledge clinicians of the possibility of these findings, with the goal to prevent erroneous diagnosis and unnecessary treatments.

Financial Interest: None: No commercial relationship
Grants: aucun

Cataract / Refractive Surgery / Contact Lens, Retina Vitreous

P61 | Acute Serous Retinal Detachment After the Same Operating Session of Uncomplicated Cataract Surgeries: A Case Series

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Purpose: To report 4 cases of acute serous retinal detachment (ASRD) after the same operating session of uncomplicated cataract surgeries.

Methods: In this case series, data of patients who developed an ASRD after an uncomplicated phacoemulsification with IOL implantation during the same operating session were collected. Diagnosis was made at the first post-operative day, when all patients had a very low best corrected visual acuity (BCVA) despite of a good aspect of the anterior segment, without significant keratopathy and with only trace cells in the anterior chamber. Spectral domain optic coherence tomography (SD-OCT) revealed a serous retinal detachment with subretinal fluid accumulation in the macular area. Patients received parabulbar injection of 40 mg/ml triamcinolone in addition to usual post-operative topical treatment of 0.1% dexamethasone and 0.3% netilmicin eyedrops. Patients were examined postoperatively at day 1, 3, 7, and 1 month. BCVA and central foveal thickness (CFT) measured by a SD-OCT were evaluated. A relationship between demographics, preoperative ocular conditions, systemic diseases, parameters of surgery and the development of ASRD was analysed.

Results: After a single operating session of 10 uneventful cataract surgeries, operated by the same expert surgeon, at day 1 post-operative an ASRD was detected in 4 patients (3 male, 1 female; mean age 71 ± 4.1 years). At the first post-operative day, mean BCVA was 0.05 ± 0.1 decimals, and all eyes had serous retinal detachment. At the following controls, BCVA improved and CFT reduced significantly. At day 7, BCVA was at least 0.8 decimals in all eyes, with complete reabsorption of subretinal fluid. At 1 month, mean BCVA was 0.90 ± 0.05 decimals and no eye had recurrence of serous retinal detachment. No relevant data were found on other parameters investigated.

Conclusions: Acute serous retinal detachment is a rare event that can occur after uncomplicated phacoemulsification, that in our cases resolved in a few days without recurrence.

Financial Interest: None: No commercial relationship
Grants: None

Pathology / Intraocular Tumours, Retina Vitreous

P62 | Bilateral juxtapapillary optic disc hamangiomas featuring von Hippel-Lindau disease

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Case report: A 24-year-old Thai male presented for a second opinion due to an increasing visual deterioration of 0.4 on the left eye. His visual acuity of counting fingers in the left eye was documented as being stable and due to amblyopia since childhood.
His ophthalmic examination showed large reddish lesions occupying both optic discs with surrounding exudative retinal detachment on the right side. In addition, midperipheral bilateral retinal hemangiomas were documented on multimodal imaging. Fluorescein angiography confirmed a severe non-perfused retina, more affected on the right side. At this stage, a suspicion of associated von Hippel-Lindau disease necessitated further general check-up and genetic testing. These revealed a cerebral solitary Hämangioblastoma as well as multiple pancreatic and kidney cysts. Due to concomitant bilateral peripheral retinal ischemia, a laser coagulation was performed.
Any surgical procedures of the reactive peripapillary and macular epiretinal fibroplasia were not initiated due to the restricted prognosis, no further signs of activity of the disease and stabilization of the visual acuity.

Discussion: This case demonstrates the crucial role of ophthalmologists in diagnosing patients with VHL, as such patients may develop multiple tumors with an endophytic growth pattern. Any surgical treatment of the secondary reactive epiretinal gliosis and consecutive serous retinal detachment have previously shown unfavorable outcomes. Contrarily, laser coagulation of the non-perfused retina, as probably due to alternated, via juxtapapillary optic disc hamangiomas, blood flow, has confirmed in our case to stabilize the visual outcome.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous, Uveitis / Intraocular Inflammation

P63 | An off-label application of anti-VEGF in a post-traumatic Irvine-Gass syndrome: a case report

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Case report: A 67-year old man presented with loss of vision in the left eye (0.2). His ophthalmic history revealed status following posttraumatic cataract surgery due to severe contusio bulbi in the left eye.

Ophthalmoscopy examination showed pseudophakia with slight decentration of the IOL due to post-traumatic iridodialysis, cyclodialysis as well as an iris defect at 12 to 3 o'clock position. Posterior segment finding revealed a macular edema in the left eye. Fluorescein angiography confirmed the diagnosis of an Irvine Gas syndrome associated with reconstructive post-traumatic cataract surgery due to lens displacement.
Four weeks after a bevacizumab intravitreal injection, visual acuity was restored (0.8) and macular thickness reduced from 714µm to 231 µm. These findings remained stable after a triple monthly bevacizumab application but also at three- and six months follow-up.

Discussion: Following secondary post-traumatic measures, an intravitreal bevacizumab appears to be an effective treatment for Irvine Gas Syndrome. The latter might be considered, as a possible off-label treatment in cases of iris-lens diaphragm injuries, zonular dehiscence and IOL decentration, where a possible anterior segment displacement of the Dexamethasone Posterior-Segment Drug Delivery System may result in anterior segment complications, IOP elevation or insufficient posterior segment delivery.

Financial Interest: None: No commercial relationship
Grants: None

Orbit / Lids / Lacrimal System

P64 | Cystadenoma: a rare orbital finding

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Background: Cystadenomas are benign cystic tumors that predominantly affect the pancreas, the ovaries and the salivary glands. A serous and a mucinous form can be differentiated. We present a case of an orbital cystadenoma, which is a unique histological finding with only singular previous reports in the literature.

History and signs: A 52-year old patient was referred to our clinic by his general physician after the incidental finding of a cystic transformation of the left lacrimal gland in a MRI scan. The patient was free of any symptoms and the clinical examination showed no special findings. The patient though had an extreme form of cancer phobia and demanded the tumor excision to rule out malignancy.

Therapy and outcome: Total excision of the tumor was performed via lateral orbitotomy. A part of the lacrimal gland that was free of tumor tissue was not removed for rest function of tear production. Histology showed cystadenoma.

Conclusion: Orbital findings of cystadenoma are extremely rare. Thus there are no existing guidelines regarding follow-up. As in mucinous cystadenoma of the pancreas malignant transformation has been described we suggest a radiological follow-up.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P65 | A case of paracentral acute middle maculopathy (PAMM) associated with cilioretinal artery occlusion.

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Purpose: To present a multimodal imaging of a paracentral acute middle maculopathy in a patient with cilioretinal artery occlusion

Methods: we present the iconography (SDOCT, VF, OCT-A, Microperimetry) of a patient who presented a paracentral acute middle maculopathy after an episode of cilioretinal artery occlusion

Case report: A 57 years-old woman consulted our center for an episode of amaurosis fugax in her left eye. BCVA was 1.0, IOP was 12mmHg. Spectral domain Optical Coherence Tomography (SD-OCT) and visual fields (VF) were normal. Fluorescein and Indocyanine angiography (FA,ICG) showed no perfusion delay. Nevertheless, the patient was urgently sent for a complete check of the carotids and vascular system. The echo-doppler of the left carotid showed 65% of occlusion and a treatment with aspirin was suggested by the angiologist to the GP. After 2 weeks the patient consulted the emergency department of the hospital with symptoms of blurred vision of the left eye. A FA was performed and showed a cilioretinal artery occlusion of her left eye. The patient was sent to the neurology department for further investigation. After 15 days of hospitalization, she consulted us again for further analysis, this time being under double anti-platelet therapy. BCVA was 0.9, IOP was 12mmHg. Fundus examination showed a yellowish area inferonasal of the macula corresponding to the area of cilioretinal perfusion. VF showed a paracentral superior-temporal scotoma. SD-OCT demonstrated an area of atrophy of the inner retina in the infero-nasal area and a hyperreflective zone in the internal nuclear layer (INL), corresponding to PAMM.

Conclusion: PAMM is a relatively recently described entity, which is strictly a SD-OCT finding, with unknown etiology, supposedly due to a sequel of retinal hypoperfusion. Our case confirms this hypothesis as PAMM was a sequel of cilioretinal artery occlusion.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P66 | Long-term Efficacy of Intravitreal Anti-VEGF Therapy for Choroidal Neovascularization in a Case of Fundus Flavimaculatus (FFM)

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Purpose: To report a case of choroidal neovascularization (CNV) in a young male with fundus flavimaculatus (FFM) and the outcome of intravitreal ranibizumab treatment.

Methods: A 40-year-old man was referred to our Department complaining about blurred vision and metamorphopsia in his left eye (OS) for 6 weeks. Clinical examination and multimodal imaging (multicolor photography, SD-OCT, near infrared-, autofluorescence-imaging, and fluorescein and indocyanine angiography presented typical signs of FFM and in addition to that a subfoveal hemorrhage, RPE detachment, an occult subfoveal neovascular membrane (type 2), and associated fluid deposition OS. A PRN regimen of anti-VEGF treatment with ranibizumab (0.5 mg in 0.05 ml) was commenced. So far the follow-up covered a period of 4 years.

Results: The patient received overall 8 injections of ranibizumab during follow-up (baseline, months 1, 2, 6, 9, 29, 30, 31). BCVA improved from baseline 0.4 to 0.8 at month 3 and was 0.63 after 4 years. Subretinal fluid and hemorrhage completely disappeared until month 3, while detachment of the RPE with underlying dense material persisted. Three episodes of minor recurred subretinal fluid were observed during follow-up (at months 6, 9, and 29). Each time visual acuity decreased to 0.3 and improved after anti-VEGF injection of 0.8 or 0.63, respectively. During the last 17 months of observation no anti-VEGF injections were necessary.

Conclusion: So far very few cases of FFM with subretinal CNV receiving anti-VEGF therapy have been reported and mainly presented poor functional and structural outcome. In this case functional improvement could be achieved and maintained for a follow-up period of 4 years under a PRN regimen applying ranibizumab.

Financial Interest: None: No commercial relationship
Grants: None

Pathology / Intraocular Tumours

P67 | Valsalva-induced spontaneous suprachoroidal hemorrhage: a case report and review of the literature

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Purpose: To report a rare case of spontaneous suprachoroidal hemorrhage (SSCH) and review the literature.

Methods: Case report and systemic review of PubMed/Medline databases from 2003 to 2020. Patients that developed SSCH with a history of previous intraocular surgery were excluded.

Results: An 82-year-old male patient with no known ocular pathologies or surgical history was referred with acute ocular pain and decreased vision in the right eye (BCVA: 0.6 with hyperopic correction) following a Valsalva maneuver. General history included chronic heart failure and coronary artery disease, treated with antithrombotic and antihypertensive drugs. Dilated fundus examination revealed a posterior red-brown choroidal mass, with a thickness of 1.5 mm on B-scan ultrasonography, and which was not visible on fluorescein or ICG angiography. On B-scan OCT, the lesion was located under the choroid. The diagnosis of a SSCH was evoked, and the patient was observed. Five months later, BCVA was 1.0 uncorrected, with a normal-appearing fundus.
In a literature review, eight cases of SSCH following an episode of increased intrathoracic pressure were identified, including our patient. M/F ratio was 1:1 with a mean age of 64 years. All cases presented systemic pathologies: 6/8 had cardiovascular (CV) disease and 2/8 asthma. All patients presented with a unilateral SSCH: 5/8 in the right eye and 3/8 in the left eye. The location of the hemorrhage was in the posterior pole (3/8), in the periphery (3/8) or unspecified (2/8). Only 2/8 patients showed ocular comorbidities (glaucoma, extrafoveolar scarring). Complications were noted in 4/8 cases (acute angle closure glaucoma, choroidal detachment, retinal detachment with vitreous hemorrhage, high intraocular pressure). One case underwent enucleation due to recurrent SSCH with angle closure glaucoma and intractable pain, one case went into phthisis following a drainage of the SSCH through a sclerotomy, one case had a vitrectomy due to residual vitreous hemorrhage and one case received acetazolamide. Spontaneous resolution of the hemorrhage was observed in the other 4 patients. In 6/8 cases, vision recovered over a mean period of 10 weeks.

Conclusion: SSCH following Valsalva maneuver in eyes with no history of ocular surgery or trauma is extremely rare, and has been associated with advanced age, CV disease and asthma. In severe cases (2/8) the eye was lost, while the majority of cases (6/8) recovered, presenting a good visual prognosis.

Financial Interest: None: No commercial relationship
Grants: None

Others, Retina Vitreous

P68 | Metabolic, structural and functional alterations in patients with inherited diseases of the retina

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Purpose: The presented retinal vessel oximetry (RO) data on patients suffering inherited retinal dystrophy (IRD) confirm the fundamental role of oxygen metabolism in the pathogenesis of IRDs.

Methods: The retinal vessel oximetry was performed with the oxygen saturation measurement tool of the Retinal Vessel Analyser (RVA; IMEDOS). The oxygen saturation in all four major peripapillary retinal arterioles (A-SO2; %) and venules (V-SO2; %) were measured and their difference (A-V SO2; %) was calculated. The data were compared with the structural and functional findings in IRD subgroups and to controls.

Results: IRD patients revealed altered metabolic function: compared to controls, but also within subgroups. Retinitis pigmentosa patients (RP) could be differentiated from controls and other IRDs, by means of increased V-SO2 and A-SO2, but also decreased A-V SO2. As the highest amount of oxygen is used by retinal photoreceptors, a reduction in retinal oxygen demand with secondary increase in oxygen saturation values, could explain the metabolic alteration in IRDs.In agreement, changes in A-V SO2 correlated well with the structural alterations, assessed by OCT. The macular thickness and the IS/OS line of RP patients were thinner and correlated with the reduction in A-V SO2. Within RP group, the SO2 correlated also to the functional alterations: increased V-SO2 correlated with reduced amplitudes of the ffERG. In the peripheral retinal zones, the evaluated parameters correlated with the mfERG: increased V-SO2 and A-SO2, and reduced A-V SO2 correlated with reduced N1 and N1P1 amplitudes.
Within the RP significant interactions were found between the RNFL thickness and the SO2 and the retinal diameters, indicating a different relationship, when compared to controls and other IRDs. Thus, degeneration of the photoreceptors with secondary neurovascular remodelling seems to be a causative factor of the increased retinal vessel saturation in RP, possibly due to reduced oxygen consumption. Subdividing our RP patients depending on the clinical appearance of macular oedema (ME), we found that increased SO2, narrower retinal vessels, and more disrupted IS/OS lines were linked to the clinical appearance of ME.

Conclusion: Clearly demonstrated through the combined metabolic-structural-functional approach, a prediction model could be proposed with identification of individuals at risk for developing IRD and more precisely of those suffering more altered metabolic function.

Financial Interest: None: No commercial relationship
Grants: None

Pathology / Intraocular Tumours

P69 | Ciliary body melanocytoma with extrascleral extension

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Purpose: We would like to report an unusual case of a choroidal melanocytoma with sudden onset extrascleral extension through an emissary vessel and presenting as a pigmented subconjunctival mass lesion.

Methods: A 30-year-old caucasian female patient presented with a sudden onset of a brown pigmented lesion of the superior bulbar aspect of the left globe. Observation with sequential photographic follow-up was done for a year. Ultrasound biomicroscopy showed a homogenous, slightly raised subconjunctival mass with a scleral defect and an intraocular part arising from the proximal ciliary body. Since there was a change in morphology during the observational period, excisional biopsy of the extrascleral part using a no-touch-technique was done.

Results: Histopathology showed a tumor consisting of heavily pigmented monomorphous cells suggestive of melanocytoma. There were no malignant changes noted.
One year following partial excision there has been no relapse and no sign of growth of the intraocular part of the tumour.

Conclusion: Ciliary body melanocytomas are a rare entity. After histopathological confirmation of the diagnosis sequential follow-up with ultrasound biomicroscopy should be considered. In absence of growth or complications we feel that more radical treatment with possible visual loss can be avoided in these cases.

Financial Interest: None: No commercial relationship
Grants: None

Cataract / Refractive Surgery / Contact Lens, External Disease / Cornea

P70 | Combined penetrating keratoplasty with implantation of a scleral-fixated iris prosthesis intraocular lens in a patient with corneal graft decompensation, aniridia and aphakia.

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Purpose: To describe the surgical technique of combined penetrating keratoplasty (PKP) with implantation of scleral-fixated iris prosthesis intraocular lens (IOL) in a patient with corneal graft decompensation, aniridia and aphakia.

Methods: We describe the surgical management of a 78-year-old male patient with a history of bilateral penetrating keratoplasty for keratoconus 30 years ago and cataract surgery in the right eye (RE), who had a trauma of the RE with consequent corneal graft dehiscence, aniridia and aphakia. One year after the traumatism, the corneal graft was decompensated and the patient was complaining for decreased vision and severe light sensitivity. A repeat PKP combined with implantation of an iris prosthesis with IOL power (MIOL-Iris, Model C1, +18.5D, Reper-NN Ltd, Russia, Ophtec, The Netherlands) was performed.

Results: There were no intraoperative or early postoperative complications. The clinical course until the 4th postoperative month will be presented.

Conclusion: Corneal pathology that requires PKP combined with aniridia and aphakia, can be effectively managed with a single surgical operation.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P71 | Use of Radiofrequency Diathermy for the Treatment of Chronic Corneal Neovascularization with Lipid Keratopathy.

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Purpose: To present the use of radiofrequency diathermy for the management of chronic resistant corneal neovascularization with lipid keratopathy.

Methods: A 29-year-old female patient presented for the management of corneal neovascularization with lipid keratopathy following a contact lens-related bacterial keratitis. Since the lesion was affecting the visual axis and was refractory to conventional treatment, we decided to proceed with radiofrequency diathermy (Klöti, Oertli®, Switzerland) under local anesthesia.

Results: There were no intraoperative or early postoperative complications and until the 2nd postoperative month there were no corneal vessels discernable. The lipid deposits were slowly but progressively regressing and best corrected visual acuity remained stable at 0.63 (decimal scale).

Conclusion: Radiofrequency diathermy seems to represent an effective and safe minimally invasive treatment for chronic resistant corneal neovascularization with lipid keratopathy.

Financial Interest: None: No commercial relationship
Grants: None

Uveitis / Intraocular Inflammation

P72 | The double-edged sword of anti-tumor necrosis factor-alpha (Anti-TNF-α) agents: a case of lethal tuberculosis primo-infection during the Anti-TNF-α treatment course

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Purpose: To report a case under anti-TNF-α immunosuppressive treatment for systemic and ocular vasculitis, who presented a severe complication because of the anti-TNFa treatment.

Methods: Images of a case with intraocular involvement associated with systemic vasculitis treated with anti-TNF-α agent.

Case: A 69-year-old patient treated with azathioprine for an undefined systemic vasculitis (μ-PAN) was sent for decreased vision. The Left eye was lost due to central retinal artery occlusion. He presented a decrease of VA and visual field restriction in his right remaining eye. VA was 0.4; IOP was 16 mmHg; Flare was 9.7 ph/ms, Fundus examination revealed a superior venous occlusion, disc pallor infero-temporally and disc oedema superior-nasally. Visual fields presented a superior scotoma. Microperimetry showed an inferior scotoma (228/560) Fluorescein angiography showed inferior ischaemic disc hypofluorescence and compensatory superior hyperfluorescence as well as superior venous occlusion and a macular oedema. SD-OCT demonstrated a cystoid macular oedema. The patient was firstly treated with IV methylprednisolone (500 mg during 3 days) and then with Prednisone 40mg and increased azathioprine (225 mg/day. Because of worsening of the retinal status, Infliximab was added after exclusion of latent tuberculosis by a negative IGRA test, which had a good effect. The patient visited his country in the Middle- East for two months. Upon his return his general condition had deteriorated and he was diagnosed with inaugural advanced miliary pulmonary tuberculosis. His disseminated tuberculosis was finally lethal. It is not sufficient to exclude contact Mycobacterium Tuberculosis but caution has to be kept during the whole treatment period. A summary of the principal side-effects and contra-indications of anti-TNF-α agents will be presented and illustrated.

Conclusion: Anti-TNF-α agents are valuable tools to achieve effective immunosuppression but must be used with caution and closely monitored as complications can be deleterious and life-threatening.

Financial Interest: None: No commercial relationship
Grants: None

Others

P73 | Effect of protective measures on the risk of the SARS-CoV-2 infection among Eye Clinic staff members

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Purpose: Switzerland was strongly affected by the SARS-CoV-2 pandemic with one of the highest incidences in Europe in April 2020. Due to the close working distance with patients a particularly high risk of infection has been reported among ophthalmologists and eye clinic staff members. The aim of the study was to assess the effect of protective measures on the risk of the SARS-CoV-2 infection among employees in a large public eye hospital.

Methods: Standard precaution measures were taken, such as no hand-shaking, use of operating-face masks for all employees and patients, protective plastic shield on slit lamps and diagnostic devices. Only patients with no signs of SARS-CoV-2 disease and normal body temperature were seen during the study period. Specific anti-SARS-CoV-2 IgG antibody titers were measured in health care workers at the end of April 2020 (1st test phase) and in January 2021 (2nd test phase). The prevalence of SARS-CoV-2 IgG antibody titers among ophthalmic staff with a daily patient contact was compared to staff members with no patient contact (such as laboratory staff, cleaning staff and desk personal) and to the staff in external private eye care clinics. A structured questionnaire helped to identify risk factors of a SARS-CoV-2 infection.

Results: 155 employees with a daily patient contact in the 1st test phase, 148 in the 2nd test phase and 107 employees with no patient contact in the 1st test phase, 93 in the 2nd test phase were included. The SARS-CoV-2-prevalence in employees with a daily patient contact was with 0% in the 1st phase and 7.4% in the 2nd phase not significantly higher than the prevalence in the control group with no patient contact (0.9% in the 1st phase, 8.6% in the 2nd phase, p=0.8). Furthermore, physicians were not at significantly higher risk of SARS-CoV-2 infection compared to technicians, nurses and desk personal. Also, risk of infection in ophthalmic staff in the large public hospital was comparable to private eye care clinics. Prevalence in employees with a private exposition to a SARS-CoV-2 was significantly higher than in employees with an occupational exposition (25% vs. 5.13%, p=0.01).

Conclusion: Above mentioned precaution measurements are effective in preventing transmission of SARS-CoV-2 infection in eye hospitals. The risk of SARS-CoV-2-infection is higher after exposition to a SARS-CoV-2-positive person in a private context, thus unprotected, than at the workplace, where precaution measures are taken.

Financial Interest: None: No commercial relationship
Grants: keine

External Disease / Cornea, Uveitis / Intraocular Inflammation

P74 | Ocular surface disease associated with dupilumab for atopic disease: clinical characteristics, treatment and outcomes.

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Purpose: Dupilumab is the first approved biologic treatment for atopic dermatitis. It is a monoconal antibody that blocks the IL-4 and IL-13 pathways. Conjunctivitis is the most common side effect reported.
We describe here the clinical characteristics, treatment and outcomes of patients with ocular surface disease induced by dupilumab.

Method: Consecutive case series of patients treated in our institution for dupilumab-induced surface disease between January 2020 and March 2021. Charts were retrospectively reviewed and demographics, clinical characteristics of ocular surface disease, treatment and outcomes were reported.

Results: Eight patients (4 male) with a mean age of 42 (29-64) were evaluated. Mean time between dupilumab introduction and ocular symptoms development were four months (3weeks-8 months). No patient had history of vernal or atopic keratoconjunctivitis, but three patients had seasonal allergic conjunctivitis. Patients complained of red eye (100%, n=8), itchiness (100% n=8), ocular burn (75%, n=6) and photophobia (88%, n=7). The most common clinical signs were conjunctival injection (n=8), papillary reaction and superficial punctate keratopathy (n=6). One patient presented with Trantas dots. First line treatment with lubricants was unsatisfactory in all patients. Second line treatment with a short term course of corticosteroid drops was successful in four patients. A steroid-sparing agent (cyclosporine 2%) was successfully used in three patients. None of the patients stopped dupilumab because of the ocular side effects.

Conclusion: This case series provides insight into the commonly presenting ocular signs and symptoms associated with ocular surface disease induced by dupilumab. Most of the patients were successfully treated. Long term topical steroids instillation can be avoided with topical steroid sparing agent such as cyclosporine 2%.

Financial Interest: None: No commercial relationship
Grants: None

Uveitis / Intraocular Inflammation

P75 | Susac syndrome: a case series

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Purpose: Susac syndrome is an immune-mediated occlusive microvascular endotheliopathy. It is characterized by a triad of branch retinal artery occlusion, encephalopathy and low-frequency sensorineural hearing loss.

Methods: Retrospective case series of patients seen at our institution for Susac syndrome between 2005 and 2020. Demographics, clinical characteristics, treatment and outcome were reported.

Results: Four patients (2 males) were included in the study. According to the newly published diagnostic criteria, 3 patients had a definite and one patient had a probable Susac syndrome (distinctive ophthalmological and ear involvement without cerebral involvement). Mean age at onset was 29 years old (range 24-33). The first symptoms were neurological in 3 patients and ophthalmological in 1 patient (visual field impairment). All four patients complained also of hearing loss. Initial ophthalmological status revealed a normal (10/10) visual acuity (VA) in all patients. One patient presented a unilateral quadrantanopsia. There was neither anterior chamber nor vitreous inflammation. Gass plaques (defined as yellow-white plaques found in the arteriolar wall away from arterial bifurcations) were present on fundus examination in all patients. Fluorescein angiography revealed arteriolar vascular leakage in the absence of other signs of intraocular inflammation in all patients. Initial treatment consisted in intravenous corticosteroid (CS) pulse therapy in the 3 definite Susac and of high dose oral CS in the probable Susac. Additional therapy consisted of azathioprine in two patients and intravenous immunoglobulins plus mycophenolate mofetil in the two others. The last two patients additionally needed cyclophosphamide pulse therapy in order to control the disease. Remission without treatment was achieved in three patients after a mean time of 7 years (2, 7.5 and 11.5 years respectively).

Conclusion: Susac syndrome is a rare disease with characteristic ophthalmological manifestation. Gass plaques should be looked for in young patients presenting with acute neurological symptoms and/or hearing loss. Prompt recognition of the disease and treatment can avoid long term disabilities.

Financial Interest: None: No commercial relationship
Grants: None

Glaucoma

P76 | Minimalinvasive Glaukomchirurgie (MIGS): 2-Jahres-Ergebnisse der Kanaloplastik ab interno (AbiC)

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Hintergrund: Die Kanaloplastik ab interno (AbiC) ist die einzige minimalinvasive Glaukomchirurgie (MIGS)-Technik ohne verbleibendes Implantat. Ziel dieser Studie ist die Langzeitwirksamkeit dieser neuen chirurgischen Technik zu evaluieren.

Material und Methoden: Für diese retrospektive Kohortenstudie wurden die Daten von 25 Augen von 23 Patienten ausgewertet, die bei einem alleinigen Offenwinkelglaukom einer AbiC (6 Augen) und bei einer zusätzlich vorhandenen Katarakt einer kombinierten Katarakt-AbiC-Operation (19 Augen, „Phakokanaloplastik ab interno“) unterzogen wurden. Bei den postoperativen Nachkontrollen wurde der intraokulare Druck (IOD), die Anzahl der noch notwendigen drucksenkenden Medikamente sowie die Komplikationen, die mit dem chirurgischen Verfahren einhergingen, ermittelt.

Ergebnisse: Der IOD sank von durchschnittlich 20,24 mmHg ±5,92 (n=25) auf 10,64mmHg ±2,77 (n=25, $p < 0,001$), 12,55 mmHg ± 3,33 (n = 22, $p < 0,001$) und 13,67 mmHg ± 2,15 (n = 21, $p < 0,001$) bei der 1-Tages-, 1-Jahres- und 2-Jahres-Kontrolle. Im Vergleich zum Ausgangswert bedeutet dies eine IOD-Reduktion um 47,4, 37,9 und 32,5 %. Der durchschnittliche, präoperative Bedarf an lokaler IOD-senkender Therapie lag bei 1,92±1,04 Medikamenten und reduzierte sich auf 0,05±0,23 nach 2-jähriger Nachbeobachtung. 80% der behandelten Patienten benötigten keine weitere Therapie. Bei 5 Augen (20%) erfolgte eine weitere medikamentöse oder chirurgische Behandlung. Als chirurgische Komplikationen wurden ein Hyphäma bei 5 Augen (20%) sowie eine lokalisierte periphere Descemet-Abhebung bei 1 Auge (4%) ohne Spätfolgen dokumentiert.

Schlussfolgerung: Eine alleinige oder mit Kataraktoperation kombinierte AbiC erwies sich als sichere und effektive MIGS-Technik mit guter Langzeitregulation des IOD und geringem Risikoprofil.

Financial Interest: None: No commercial relationship
Grants: keine

Cataract / Refractive Surgery / Contact Lens, Others

P77 | An Experimental Model of Primary Hydrophilic Intraocular Lens Calcification and Secondary Amplification of Trace Crystal Nuclei Formation in these IOLs

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Purpose: Calcifications are a bothersome and undesired complication in eyes with hydrophilic intraocular lenses (hIOLs). They occur in different lens types and could be explained in some cases by contamination of IOLs with chemical components. In the majority of observed cases the pathophysiology of hIOL lens calcification remains obscure. The use of intraocular endotamponades, especially at the end of DMEK procedures, seems to induce the formation of calcification on/in hIOLs. hIOL calcifications consist mainly of hydroxyapatite (Ca5(OH|(PO4)3). It is the aim of this report to present an experimental model of in-vitro hydroxyapatite crystal formation in hIOLs.v

Methods: Following the description of Watanabe et Akashi (2006) on the electrophoretic synthesis of hydroxyapatite in hydrogels and a suggestion of Britz et al. (presentation DGII 2010) an electrophoretic system was constructed and experimentally used to produce hydroxyapatite crystal formation in hIOLs. The anodic compartment was charged with CaCl2 and the cathodic with Na2HPO4 (both 40 mmol/L). Calcifications of hydrophilic intraocular lenses were stained with Alizarin Red.v

Results: After a relative short electrophoretic incubation time of only 24 hours hIOLs presented Alizarin Red positive crystal formation. The extent of crystal formation in these lenses resembled the natural development of crystals in susceptible lenses that occurred after months or years. IOL calcification was, similar to clinical cases, found slightly below the lens surface and less extensively at the lens surface. Hydrophilic intraocular lenses that were preconditioned to develop hydroxyapatite crystal seed formation could easily be identified by electrophoretic incubation, even if the seeds were optically not relevant and could not be detected by slit lamp biomicroscopy.

Conclusion: The described electrophoretic in-vitro incubation model is capable to produce hydroxyapatite crystal formation in hydrophilic intraocular lenses in-vitro similar to clinical opacification of these lenses in time lapse motion. In addition this technique allows the rapid amplification of otherwise difficult to detect seed crystals and is therefore a valuable tool in the elucidation of hydrophilic lens calcification development.

Financial Interest: None: No commercial relationship
Grants: None

Pathology / Intraocular Tumours

P78 | Isolierte retinale Astrozytome

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Hintergrund: Retinale Astrozytome (auch astrozytäres Hamartom genannt) sind benigne Tumore der Netzhaut beziehungsweise der Papille, die fast immer asymptomatisch sind und daher meist als Zufallsbefund in einer Routineuntersuchung diagnostiziert werden. Sie können einzeln, multipel und auch bilateral auftreten. Histologisch bestehen sie aus Gliazellen mit basalem Gefässnetz im Bereich der inneren Netzhautschichten und verdecken häufig die Netzhauthautgefässe. Sie können sich als «flauschig» oder «maulbeerartig» darstellen, wobei letztere einer zystischen Degenerationen des Tumors entspricht. Differentialdiagnostisch muss abgeklärt werden, ob eine Assoziation mit dem Tuberösen Sklerose Komplex oder der Neurofibromatose Typ 1 besteht. Der Nachweis eines rein isolierten Auftretens fordert den Ausschluss anderer Organmanifestationen.

Fallbeschreibung: (1) Ein 7- jähriger Patient wurde mit Bitte um Abklärung eines unklaren vitreoretinalen Prozesses am linken Auge zugewiesen. Anamnestisch gab er zu jeder Zeit Beschwerdefreiheit an und der Visus war bestkorrigiert 1,0. Funduskopisch zeigte sich peripher superior ein weisslich- gelblicher Tumor mit teils zystischen Veränderungen und zentraler Verkalkung. Es lagen keine Netzhautablösungen oder retinalen Blutungen vor. (2) Ein 12-jähriger Patient stellte sich ebenso nach Zuweisung vor, welcher in der funduskopischen Untersuchung des linken Auges eine gelblich-weisse, semi- transparente «maulbeerartige» Läsion im unteren Papillenbereich aufwies. Der restliche Fundus und der Fundus des rechten Auges waren altersentsprechend unauffällig, der Visus war mit eigener Korrektur 1,25. Die Mütter beider Patienten verneinten Pigmentauffälligkeiten an den Extremitäten (Cafe au lait-Flecken), «white spots» oder frühkindliche Krämpfe. Aufgrund des Vorkommens im Rahmen der oben genannten Systemerkrankungen wurde eine neurologische und kinderärztliche Abklärung empfohlen, welche bei beiden Patienten unauffällig blieb.

Schlussfolgerung: Retinale Astrozytome vom «maulbeerartigen» Typ ist anhand seines typischen Aspektes leichter zu erkennen als Astrozytome vom «flauschigen» Typ. Klinisch stellen sie sich fast immer inaktiv dar. Zur ersten Einschätzung können Fragen bezüglich Hauterscheinungen oder neurologischen Auffälligkeiten in der ophthalmologischen Sprechstunde wegweisend sein. Eine interdisziplinäre Abklärung der betroffenen Patienten ist zu empfehlen.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P79 | How to supply VEGF to the ocular surface

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Purpose: VEGF-A, the most abundant subtype of the VEGF-family in the eye, plays an important role in corneal homeostasis, due to its ability to mediate corneal nerve repair. Repeated intravitreal anti-VEGF injections were shown to significantly reduce the corneal nerve density, which might negatively affect corneal homeostasis and lead to dry eye disease. Currently, there are two effective modalities to treat dry eye while supplying VEGF to the ocular surface: serum eye drops (SED) and eye drops manufactured from plasma rich in growth factors (PRGF). Purpose of this study is to evaluate the VEGF-A concentration in SED and PRGF eye drops for treating dry eye disease.

Methods: Ten healthy volunteers donated blood on two separate occasions, 2-8 days apart. Thus, a total of 20 blood samples were processed to obtain both SED and PRGF. Concentrations of VEGF-A were quantified by a Simple Plex™ platform run in triplicate.

Results: The VEGF concentration in SED and PRGF was very similar between the 2 blood samples drawn from one individual donor but showed substantial interindividual variability. However, in all 20 samples, VEGF concentrations were substantially higher in SED samples (238.7±146.6pg/mL) compared to PRGF samples (67.4±46.3pg/mL). Based upon analysis of variance (ANOVA) model for the measured concentrations with fixed effects for specimen (SED vs. PRGF) and subject, the mean difference between SED and PRGF concentration was 168.1pg/mL (95% confidence interval: [142.4, 193.9], $p < 0.001$).

Conclusion: Our study showed that the VEGF concentration was higher in SED than in PRGF. This is an important finding, particularly for a potential treatment of dry eye disease in patients with neuropathic eye disease, especially in patients that received repeated anti-VEGF intravitreal injections, or in patients with Sjögren's disease, where the level of VEGF in tears might be pathologically decreased. VEGF might be needed to restore the ocular surface homeostasis. Although growing evidence has shown that VEGF-A plays an important role in the corneal homeostasis, only a randomized prospective clinical trial will show, whether supplying VEGF to the ocular surface might successfully overcome the problem of corneal neuropathy in these patients. For this purpose, based on our results, an undiluted SED should be preferred over a PRGF due to the higher content of VEGF-A.

Financial Interest: None: No commercial relationship
Grants: keine

Pathology / Intraocular Tumours

P80 | Adenoma of the nonpigmented ciliary body

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Purpose: We would like to report an unusual case of a nonpigmented ciliary body adenoma diagnosed incidentally during phacoemulsification.

Methods: A 59-year-old male patient underwent uncomplicated cataract surgery. Intraoperatively, a whitish mass lesion causing anterior dislocation of the iris was noted. Ultrasound biomicroscopy revealed a well circumscribed round tumour of the pars plicata of the ciliary body exhibiting an irregular high internal reflectivity. Incisional biopsy was performed for diagnosis.

Results: Histopathology showed adenoma of the nonpigmented ciliary body. There were no malignant changes noted.
One year follow-up with ultrasound biomicroscopy has shown no growth and the patient retains full vision without any complications.

Conclusion: Ciliary body adenomas are an uncommon entity and might pose a differential diagnostic challenge. Fine-needle aspiration biopsy or incisional biopsy can be done to establish a diagnosis. After histopathological confirmation of the diagnosis sequential follow-up with ultrasound biomicroscopy should be considered. These tumours should be sequentially monitored for growth or complications.

Financial Interest: None: No commercial relationship
Grants: None

Orbit / Lids / Lacrimal System

P81 | Large hemorrhagic extrascleral ciliary body melanoma recurrence treated with trans-arterial embolization and coiling followed by exenteration

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Purpose: We would like to report the use of trans-arterial embolization as therapeutic option to treat hemorrhagic orbital tumours.

Methods: A 59m year-old male patient who suffered from a systemically metastasized, large extrascleral uveal melanoma recurrence of the left eye presented with active hemorrhage from the tumour. He had undergone proton beam irradiation for an epithelioid ciliary body melanoma four years prior to presentation and was lost to follow-up.
Magnetic resonance angiography showed vascularization of the lesion via the ophthalmic and maxillary artery. Selective trans-arterial embolization of the tumour was done with polyvinyl alcohol microparticles followed by coiling of the supplying arteries. The bleeding stopped after 2 days and the tumour started to become necrotic. As tumour removal was the primary wish of the patient at this point in time, exenteration was carried out a week later without significant blood loss, intra- or postoperative complications.

Results: Histopathology showed uveal melanoma of the ciliary body with large extrascleral extension and optic nerve avulsion. Lymphangiomatosis and haemangiomatosis carcinomatosa was appreciated in the specimen. Socket healing was adequate, and the patient reported improved quality of life. He refused systemic palliative treatment and died 3 months after the intervention.

Conclusion: Stopping the bleeding and lessening the tumor burden was significant for the quality of life of this patient. This was successfully achieved with the combination of TAE and exenteration while minimizing surgical morbidity.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology, Uveitis / Intraocular Inflammation

P82 | The Importance of Neuroimaging in Intermediate Uveitis

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Augenklinik Wettingen

Purpose: To report a patient who suffered of chronic intermediate uveitis with rare recurrences. Many years after onset and regular follow-up/treatment of the intraocular inflammation, an MRI study of the brain confirmed multiple disseminated T2 high signal lesions throughout the subcortical white matter.

Methods : Single case report and review of literature

Results: A 32-year-old male initially presented with a non-infectious intermediate uveitis in the absence of neurological symptomatology. A thorough work up at a tertiary centre was inconclusive, he was then treated successfully for five years using topical and subtenonal steroids. In order to reduce steroid treatment, biologicals were considered. Repeat detailed questioning revealed paresthesia of the upper extremities. MRI of the central nervous system was performed primarily to rule out demyelinating disease. The MRI showed clear evidence of demyelination with diagnostic, prognostic and therapeutic sequelae.
Disseminated encephalomyelitis (MS) can affect the eyes and visual system in a number of ways, demyelinating optic neuropathy and ocular motility disorders relating to brain stem lesions being the most commonly recognized. Whilst the association of MS with uveitis has long been established, the incidence of uveitis in MS patients is 1%, as well as 1% of patients in uveitis clinics having MS as a systemic association of their ocular inflammation. Most often, the demyelinating disease occurs in intermediate uveitis. However, anterior or panuveitis may also present, mostly with granulomatous features.
Furthermore, ocular and neuro-inflammatory activity may present asynchronously.

Conclusion: This case demonstrates the importance of repeated search for neurological symptoms in patients with intermediate uveitis to rule out MS.

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea, Orbit / Lids / Lacrimal System, Others

P83 | Red Eye: Traveling leading to Conjunctival Gadfly Myiasis

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Purpose: To report a case of sheep gadfly infestation as an unusual cause of marked conjunctival inflammation which may present in returning travellers.

Methods: Review of patient chart and literature

Results: A 73 year old female recently returned from a recreational visit to Turkey presented to our clinic with ocular discomfort and redness of her left eye. Examination confirmed a marked unilateral conjunctivitis with otherwise normal ocular examination findings attributable to infestation with a single live larva of type Oestrus ovis, also known as sheep gadfly. Removal of the organism and topical combination treatment with steroids and antibiotics resulted in rapid resolution of clinical signs and symptoms.
Oestrus ovis infestation may present as unilateral conjunctival inflammation yet can be a challenging diagnosis to make. Careful medical and travel history taking, coupled with awareness of the epidemiology and life cycle of the sheep gadfly are key to making the diagnosis, which may not be obvious on cursory clinical examination, even with everted conjunctivae. The clinician should also be aware of associated lacrimal/naso-lacrimal manifestations and complications of this infestation.

Conclusion: Conjunctival inflammation with a history of recent traveling in regions to which Oestrus ovis is endemic should alert the ophthalmologist to the possibility of gadfly larvae, a careful search for which should be undertaken.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P84 | Stumpfes Bulbustrauma

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Einleitung: Eine Patientin stellte sich vor mit einer Prellung des linken Auges durch eine Schranktür. Seither sei das Sehen schlecht und das Auge schmerzhaft. Anamnestisch war vor Jahren eine Netzhautablösung operiert worden sowie eine Katarakt-OP durchgeführt worden.

Befund: Fernvisus rechts 1,0 links Handbewegungen. Augeninnendruck rechts 16, links 8 mmHg. Vorderabschnitt rechts reizfreie Pseudophakie, links etwas Blut in der Vorderkammer, eine subluxierte IOL ist erkennbar, der Glaskörperraum ist eingeblutet. Im Ultraschall sieht man eine Glaskörperblutung und anliegende Netzhaut.

Prozedere: Zur Exploration wird in ITN die Bindehaut 360 Grad eröffnet und die Sklera auf Rupturstellen inspiziert. Unter einer ausgeprägten fibrotschen Mmebran ist eine Cerclage erkennbar. Das Auge erscheint intakt, die Fibrose um die Cerclage wird belassen. Weiter mit 23 G ppV, Entfernen des Blutes und Entbinden subluxierten IOL. Inspektion: Die Papille ist vital und randscharf, die Cerclage dellt, alte Lasernarben. Temporal hat sich ein Cerclageende in das Augeninnere gebohrt. Eröffnen der Fibrosemembran über der Cerclage, Durchtrennen der Cerclage und vorsichtiges Entbinden. Wasserdichtes Übernähen des Skleradefektes, Endolaser in diesem Bereich, Ando-Iridektomie und Silikonöltamponade.

Weiterer Verlauf: Es zeigte sich ein zufriedenstellender Befund mit einem Visus von 0,5 am linken Auge. Eine Ölablassung und Artisanlinsenimplanation ist geplant.
Fazit: Unter einem fibrosierten Cerclageband kann sich eine Skleraruptur verbergen.

Financial Interest: None: No commercial relationship
Grants: keine

Retina Vitreous

P85 | The assessment of a Python-based application for the labeling of fundus image quality

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Aims: Machine learning (ML) is playing an emerging role in ophthalmic diagnostics and decision making. In order to provide sufficient data for the training of ML algorithms, correctly labeled ground truth data are inevitable. In this pilot study we assessed the performance of graders with different backgrounds in the labeling of retinal fundus image quality.

Methods: A Python-based tool was developed for the labeling of fundus image quality in three categories: good (G), adequate (A) and insufficient for grading (I). We enrolled 6 subjects in our pilot study. A pdf tutorial was presented to all graders with detailed description of image quality requirements based on four characteristics: focus, illumination, image field definition and artefacts. We randomly selected 200 images from a pool of 17'000 already labeled images (110/G, 60/A, 30/I). We timed the performance of all graders and assessed the accuracy of the grading. The participants were asked to give a feedback after completion.

Results: The median time for the labeling task was 991.4 sec (711.9 to 1756.7 sec). The median time necessary for the first 50 images (79.8 sec, 170.3 to 469.3 sec) was higher compared to that required for the last 50 images (209.9 sec, 156 to 328.3 sec). The median accuracy in the three groups was 72.5% (59 to 80%), 43% (27 to 73%) and 100% (80 to 100%) for the G, A and I labels, respectively. The median time needed for the decision making per image in the three groups was 4.4 sec (0.7 to y 46.7), 4.9 sec (0.1 to 47.2 sec) and 1.8 sec (0.4 to 46.4 sec) for the G, A and I labels, respectively. The feedback of the participants was positive regarding the labeling task and the tool itself, with remarks concerning ambivalent grading of image characteristics and the option of zooming.

Conclusion: Our Python-based tool seems to be a simple yet possibly efficient solution for the labeling of fundus images according to image quality with a relatively quick learning curve. This has the potential to serve for the democratization of ML-applications among medical personnel, such as residents and even persons with non-medical background as in the case of crowdsourcing. However, the variability of labeling results and the feedback of the study participants points towards the need for thorough training preceding the assignment for image labeling.

Grants: None

Neuroophthalmology / Strabology

P86 | Clinical outcome and visual function after minimally invasive neurosurgery (MIN)

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Problemstellung: In einer aktuellen Serie von 60 Fällen mit minimal invasiver, neurochirurgischer (MIN-) Evakuation von intra-cerebralen Blutungen (ICB) fanden sich in 6 Fällen okzipitale Lokalisationen. Dies ermöglichte, das funktionelle Ergebnis mit ophthalmologischen Messmethoden postoperativ sowie im Verlauf zu evaluieren und zu dokumentieren.

Material und Methode: Zeitnah peri-operativ wurden, soweit möglich, Visus, 30°-Gesichtsfeld, die peri-papilläre retinale Nervenfaserschichtdicke (RNFL) und der Fundus untersucht. Bei 3 Patienten lagen GF-Befunde vor. Vier erwachsene Patienten (42, 61, 71, 73 Jahre alt), und ein Kind (2 Monate jung) wurden in der Augenklinik untersucht. Eine 82jährige Patientin konnte nach schwerem Allgemeinverlauf erst im häuslichen Umfeld, mehrere Monate nach der Reha untersucht werden.

Ergebnisse: Das Blutungsvolumen lag zwischen 30–125 ml, in 0–1 cm Tiefe zur Oberfläche. Es wurden 4 MIN-Kraniotomien (1–3 cm) und 1 Bohrloch zur Evakuation verwendet. Die Blutungsursachen waren 3×Angiopathien in Kombination mit ASS- Therapie, 1 × Kavernom und 1 × Infarkt, eine blieb unklar, histologisch ohne Pathologie-Nachweis. Vier Patienten erholten sich komplett, die 82-Jährige erlitt 2 Pneumonien, bekam in der REHA eine TEP nach Sturz und erholte sich dennoch. Das Baby zeigte den besten Entwicklungsverlauf. Ophthalmologisch erholten sich alle Patienten rasch. Die Gesichtsfeld-Ausfälle und Gesichtsfelderholung repräsentierten den Verlauf am deutlichsten; GF-Befunde konnten jedoch nur in 3 Fällen erhoben werden.

Schlussfolgerung: Bei enger Kooperation von Ophthalmologie und Neurochirurgie konnte in einer ersten kleinen Serie nach Evakuation okzipitaler ICB's eine funktionelle Erholung zeitnah postoperativ und im Verlauf dokumentiert werden.
Ref.: Resch KDM; Key-concepts in MIN, Springer 2020

Financial Interest: None: No commercial relationship
Grants: None

External Disease / Cornea

P87 | First undisputable effectiveness evidence of flipping endothelial graft technique.

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Purpose: To assess the viability of graft repositioning in a case of early-detection upside-down graft resulting from DMEK in a patient with a depleted peripheral endothelial cell count.

Methods: We report the case of a 72-year-old woman having previously undergone three corneal endothelial transplantations of her left eye and several glaucoma-related surgeries including implantation of Ahmed glaucoma valve, presenting with iatrogenic bullous keratopathy induced by tube-corneal touch. In this context, a fourth corneal transplantation is performed (DMEK), in which an inverted / upside-down graft is observed post-operatively at day 6. At day 7, upside-down graft repositioning and re-bubbling are performed.

Results: The upside-down graft is successfully repositioned post-operatively, as confirmed by AS-OCT. BCVA improves from counting fingers before graft repositioning to 8/10 after 1 year. CCT decreases from 970 µm before graft repositioning to 540 µm after 1 one year, and graft endothelial cell density decreases to 1078 cell/mm2 at 9 months after reoperation, and to 679 cell/mm2 after 1 year. Slit lamp examination at 12-month follow-up reveals a clear cornea.

Conclusions: Graft repositioning should be attempted as the first therapeutic approach rather than repeat DMEK in cases of early-detection upside-down grafts, even in eyes with a depleted peripheral endothelial cell count (non-FECD). This technique proves to be more timely and cost-effective, as well as ethically more viable in terms of sparing precious human tissue.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology

P88 | Unilateral optic neuritis as the first and only manifestation of SARS-CoV-2 infection

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Purpose: To report a patient with SARS-CoV-2 infection and no systemic or respiratory symptoms who developed unilateral optic neuritis (ON).

Methods: A 58-year-old male presented at eye emergency with 4 days of right eye pain exacerbated with eye movement
and moderate headache. The day before presentation, he had noticed visual loss in right eye (RE) . He was under treatment for hypertension and hypercholesterolemia, and was an active smoker.

Results: The clinical examination revealed best corrected visual acuity (BCVA) of 0,4 and optic disc oedema in the RE. Examination of the LE was within normal limits. An anterior ischemic optic neuropathy of the RE was suspected even though the presence of pain was unusual. Routine COVID-19 PCR swab was performed and tested positive; therefore, the patient was quarantined at his home for 10 days. During quarantine RE pain resolved spontaneously after one week. Follow-up examination immediately after quarantine however revealed worsening of BCVA to counting fingers in the RE.
The progressive visual loss and preceding pain raised the alternative diagnosis of an atypical unilateral optic neuritis. An expanded evaluation included brain and orbital MRI, immunological panel (anti-nuclear antibodies (ANA), anti-neutrophil cytoplasmic antibodies (ANCA), anti-myelin oligodendrocyte glycoprotein (MOG) antibodies and anti-aquaporin-4 (AQP4) antibodies), infectious panel (Quantiferon-TB, Syphilis and Lyme disease) and sarcoidosis screen. Orbital MRI showed inflammation of the retrobulbar portion of right optic nerve, confirming the diagnosis of ON. Brain MRI did not show any lesions suspicious for multiple sclerosis. However, all investigations were negative except COVID-19 PCR swab. He was treated with intravenous methylprednisolone, followed by oral prednisolone taper for an atypical optic neuritis. BCVA of RE improved dramatically 2 weeks after treatment and a follow-up examination 6 weeks later revealed amelioration of BCVA to 0,6.

Conclusion: This patient presented a unilateral optic neuritis with atypical features (male gender, older age, prominent disc oedema, prolonged progressive visual decline). No specific etiology was identified despite the broad work up, except a positive COVID-19 PCR swab. The unilateral optic neuritis could be the unique manifestation of SARS-CoV-2 infection.

Financial Interest: None: No commercial relationship
Grants: None

Uveitis / Intraocular Inflammation

P89 | Intermediate uveitis in a HLA-B27 positive patient treated with upadacitinib

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Purpose: Upadacitinib is a specific Janus kinase inhibitor (Jack-1) recently approved for the treatment of psoriatic arthritis and ankylosing spondylitis.

Method: We report the case of a 33-year-old woman, who was referred with severe HLA-B27 related uveitis and macular edema, unresponsive to a treatment of oral steroids and adalimumab 40mg/week, the latter having also provoked a paradoxical tumor necrosis factor inhibitor-induced psoriasis.

Results: Fundus examination revealed the presence of bilateral intermediate uveitis, associated with a peripheral retinal vaso-proliferative tumor. Optical coherence tomography confirmed the persistence of macular edema in both eyes. A rheumatological work-up revealed the presence of knee arthritis and right sacroiliitis due to axial spondyloarthropathy. Following a therapy switch to upadacitinib 15 mg/day and oral prednisone 20 mg/day with progressive tapering, the psoriatic lesions disappeared. One month later, visual acuity had improved from 1.0 to 1.25 in the right eye and from 0.63 to 1.25 in the left eye. The central foveal thickness, initially 297 um in the RE and 410 um in the LE, had decreased respectively to 281 and 294 um.

Conclusion: Upadacitinib could represent a promising second-line therapy in uveitis patients simultaneously affected by axial spondyloarthropathy.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P90 | Rapid onset and excessive panretinal degeneration associated with HCQ-use

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Purpose: Hydroxychloroquine (HCQ) can cause irreversible damage to the retina. The American Academy of Ophthalmology recommends a regimen for dosing, screening and monitoring in patients treated with HCQ. We present an unusual case of rapid development of severe HCQ-retinopathy with only a daily dose greater than the recommendation as a risk factor.

Methods: observational case report. Clinical examination and multimodal imaging: Optical coherence tomography, autofluorescence, perimetry, full-field and multifocal electroretinogram were performed. Further tests including neoplastic and paraneoplastic work-up, vitamin levels, and whole exome sequencing were also performed in order to rule out other possible causes of panretinal degeneration.

Results: A 58-year-old woman with rheumatoid arthritis treated initially with 200mg HCQ daily for 1 year (daily dose 3.6mg/kg), then 400mg daily for 1.5 years (daily dose 7.2mg/kg), and a cumulative dose of 288g presented with progressive concentric visual field constriction to our retina department.
Her medical history was otherwise unremarkable. Family history was unremarkable for inherited retinal diseases.
Fundus autofluorescence showed bilateral subtle hyperfluorescence at the posterior pole with mild peripheral mottling of the retinal pigment epithelium. Optical coherence tomography of the macula revealed parafoveal loss of the ellipsoid zone with central subfoveal preservation. Fluorescein angiography failed to demonstrate any pathological changes of the vessels or optic disc. The 10° visual field demonstrated bilateralconstriction with a small preserved central island. Full-field electroretinogram demonstrated severely reduced rod and cone responses. The multifocal electroretinogram showed reduced paracentral responses.
The patient underwent a complete work-up for paraneoplastic and non-paraneoplastic retinopathy, however no antibodies or neoplasms were detected. Whole exome sequencing was performed, which did not show any pathogenic sequences for retinitis pigmentosa or other panretinal degeneration.

Conclusion: Despite well-known major risk factors for HCQ toxicity and adherence to recommended screening protocols, rare adverse reactions such as rapid-onset, severe panretinal degeneration may develop following HCQ-intake. This case suggests underlying mechanisms and risk factors for HCQ toxicity in addition to those previously reported, and a potential need for supplementary screening tests to prevent HCQ

Financial Interest: None: No commercial relationship
Grants: None

Pathology / Intraocular Tumours

P91 | 2021 Delayed diagnosis of lung carcinoma, presenting as choroidal metastasis in a Covid-19 patient and treated with Osimertinib

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Purpose: To illustrate how both Covid-19 and immunotherapy influence multidisciplinary management of metastatic lung carcinoma.

Method: Case report of a 41-year-old black male who presented in October 2020 at the Jules-Gonin Eye Hospital with a painless loss of vision (OS) since 2 months. As a restaurant owner, he admitted being stressed because of Covid-19 restrictions.

Results: On examination, BCVA was 1.25 (OD) and 0.6 (OS). Sub-foveal liquid in the left fundus, evoked the diagnosis of a central serous chorio-retinopathy. However, after 4 weeks, a single amelanotic choroidal lesion had appeared, with a thickness of 1.6 mm on B-scan ultrasonography. The mass presented a few pin-points at its surface on fluorescein angiography and provoked a masking defect on panoramic indocyanine green angiography (ICGA), on which no other choroidal lesions could be identified (OU).
Suspicion of choroidal metastasis motivated a systemic work-up, including a chest CT-scan reported to be 'compatible with a recent Covid-19 pneumonia', which the patient had omitted to mention. The scan was repeated 3 weeks later, when the patient was hospitalized because of hemoptysis, and revealed a pulmonary mass in the middle lobe with mediastinal infiltration, multiple lymph nodes and a suspected contralateral nodule. A bronchoscopy led to the diagnosis of lung adenocarcinoma with EGFR mutations in exon 18 and 20. No 'distant' metastases could be found, other than in the left posterior choroid, for which a stereotactic radiation therapy was being considered.
However, early January 2021, a 'pre-radiation' fundus control did not only confirm an increase in height to 2 mm of the sub-foveal metastasis, but also the appearance of multiple miniscule flat choroidal lesions (OU), only visible on ICGA, suggesting the possibility of a miliary rather than oligometastatic lung cancer.
Treatment strategy was adapted and a palliative anti-EGFR immunotherapy with Osimertinib p.o. (a tyrosine kinase inhibitor) was initiated. To monitor closely its efficacy, the oncologists requested an ophthalmic check-up 4 weeks later. BCVA had improved to 0.9 (OS), with a regression of the sub-retinal fluid and the main choroidal mass to 1.4 mm. On PET-CT scan, the pulmonary mass had also regressed.

Conclusion: Covid-19 pneumonia related lesions can delay the diagnosis of lung carcinoma. Coincidentally, with treatment delay in this case, panoramic ICGA allowed to recognize a miliary rather than oligo-metastatic lung

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous, Uveitis / Intraocular Inflammation

P92 | Impaired endothelial function mimicking choroidal infarction in neurosyphilis: a case report

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A 75-year-old man was referred with a new onset right central scotoma: His Snellen visual acuity OD was finger counting at near and far. His general history was unremarkable. His visual field examination (Goldman perimetry) confirmed a relative central scotoma and RAPD was seen in the right eye. Fundus imaging of the affected eye showed centrally a large, sharply demarcated lesion, but unremarkable findings on fundus autofluorescence imaging. Automated intraretinal segmentation of SD-OCT confirmed corresponding photoreceptor disruption, OD. Fluorescein angiography showed staining of retinal vessels at the margin of the lesion and signs of a hot optic disc, OD. ICG angiography was unremarkable, OU. The full-field ERG was within normal range compared to the control group. MfERG amplitudes were slightly decreased centrally OD, but could not yet explain his visual deterioration. Because of suspected preexisting choroidal infarction, underlying vascular dysregulation was postulated. Dynamic vascular analysis (RVA, IMEDOS) showed reduced venous and arterial dilatation to flicker of +2.6% and +3.1%, respectively, and prolonged latency of the unaffected eye. Blood samples were obtained at this time to rule out underlying inflammatory disease. Serology confirmed a positive Treponema pallidum IgG.

In summary: Review of the literature has shown evidence, that small and medium-sized vessels of the retina, choroid, and central nervous system are affected in neurosyphilis. In the present case, secondary endothelial dysfunction is thought to be the cause of the pseudo-choroidal infarct sign due to syphilis.

Financial Interest: None: No commercial relationship
Grants: None

Others

P93 | Long-term follow-up of recurrent spontaneous hyphema caused by ruptured persistent fetal vasculature

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Purpose: To report the long-term follow-up of an unusual case of unilateral recurrent spontaneous hyphema, secondary to anterior and posterior persistent fetal vasculature.

Patient (History and signs): A 28-year-old woman presented with a fifth episode of recurrent spontaneous hyphema in the last two months on her left eye. Left visual acuity was reduced to 20/320, and intraocular pressure was 36mmHg. The left eye examination showed a 1 milimeter hyphema, with a blood clot enmeshed in a vascular malformation temporally on the anterior lens capsule, connected by one small vessel to the iris margin at 3 o'clock. On the posterior lens capsule, a Mittendorf's dot connected posteriorly to a persistent hyaloid artery, and anteriorly to the remnant of the posterior tunica vasculosa lentis. Anterior segment fluorescein angiography showed an intact vascular perilental network posterior and anterior with a patent residual vessel connecting to the vascular loop on the lens surface. Ultrasound biomicroscopy excluded a large vascular mass posterior to the iris. The right eye was normal.

Therapy and outcome: A supportive treatment – with topical corticosteroid (dexamethasone), cycloplegic (scopolamine) and anti-hypertensive drops (timolol, dorzolamide, brimonidine) with oral acetazolamide – permitted a resorption of the hyphema, normalization of the intra-ocular pressure and total recovery of the best corrected visual acuity (20/16). Image comparison over several months of the vascular system between the loop on the anterior crystalline surface and the iris margin showed that two vessels were originally present, one of which ruptured and retracted leaving one single vascular connection. The potential indication for a surgical procedure with coagulation of the remaining vessel in the anterior chamber was discarded due to potential adverse side effects, the unnecessary perturbation of the residual ramified fetal vascular network around the crystalline lens, as well as considering the excellent visual acuity and the young age of the patient.

Conclusion: Recurrent spontaneous hyphema can rarely appear secondary to a rupture of residual anterior and posterior persistent fetal vasculature. We recommend conservative management, as the bleeding eventually appears to be self-limiting after hyphema resorption.

Financial Interest: None: No commercial relationship
Grants: None

Neuroophthalmology / Strabology, Uveitis / Intraocular Inflammation

P94 | Uveitis and Tonic pupil occurring after chickenpox infection. Small case series of 4 cases.

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Purpose: Tonic pupil is a rare sequela of chickenpox (varicella) infection and typically attributed to viral invasion of the short ciliary nerves and/or ciliary ganglion in the orbit. We report 3 patients who developed tonic pupil in the context of intraocular inflammation during chickenpox infection.

Methods: A review of medical charts of 317 patients with pediatric uveitis examined at HOJG between January 1st 2000 and December 31st 2020 was performed. Four patients developed unilateral mydriasis. Tonic pupil was diagnosed from the poor light reflex and strong response to dilute pilocarpine (0.125%) of the mydriatic pupil. Median age was 5.5 years (range 4 to 9). Two patients out of four had presented with mild to moderate anterior chamber inflammation observed respectively 7 and 28 days after the vesicular eruption of chickenpox. Visual loss with reading was reported during the acute phase of the disease.

Results: All patients were treated with oral acyclovir or valaciclovir adapted to age and weight. Local corticosteroid therapy and mydriatic agent was given during active uveitis. The uveitis resolved in all cases but mydriasis and loss of accommodation persisted. Treatment with refraction correction resulted in complete visual recovery and prevention of amblyopia.

Conclusion: Chickenpox is a common viral infection of childhood. Ophthalmologists and pediatricians should be aware that Uveitis associated with tonic pupil is a rare but potential complication of chickenpox which can lead to amblyopia. Early recognition of this condition and appropriate treatment will prevent visual loss in these children must be known to avoid further ocular complications mainly amblyopia when it occurs at a young age.

Financial Interest: None: No commercial relationship
Grants: None

Retina Vitreous

P95 | Decrease of visual acuity in a 77-year-old woman with age-related macular degeneration after a SARS-CoV-2 infection treated with hydroxychloroquine

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Purpose: Recently, hydroxychloroquine (HCQ) has been used to treat patients with a SARS-CoV-2 infection. While its benefits are still controversially discussed, HCQ can have various ocular side effects, including keratopathy, lens opacity and maculopathy. HCQ maculopathy often starts as a disruption of the inner and outer photoreceptor segment junction in the perifoveal area and can end in a complete retinal pigment epithelium and outer retinal atrophy (cRORA). A sign of advanced age-related macular degeneration (AMD) is geographic atrophy (GA), considered as a subset of the more comprehensive term cRORA. Patients with underlying macular disease might have a higher risk for toxicity. In this case report, we measured the growth rate of GA using multimodal imaging in a patient who reported vision loss after a SARS-CoV-2 infection, treated with HCQ.

Methods: Since the first visit in November 2008 until the last visit in March 2021, all near infrared (NIR) and autofluorescence (AF) en face OCT images were retrospectively used to measure the area of GA in both eyes of the patient, using the Heidelberg software tools (Spectralis Viewing Module 6.0.9.0; Heidelberg Engineering, Germany). Each atrophic lesion was manually measured by two retinal experts, the mean value was used to calculate the growth rate. Best corrected visual acuity (BCVA) was collected over the same period.

Results: A 77-year-old woman with GA secondary to AMD had a SARS-CoV-2 infection in April 2020, where she was treated with HCQ (2x200mg per day for 7 days). In February 2020, BCVA was 0.8 for the right eye and 0.63 for the left eye. After recovery, the patient realized a vision loss in the right eye. In July 2020, visual acuity dropped to 0.4 in the right eye. In December 2020, BCVA of the right eye further decreased to 0.3, but stayed stable in the left eye. Growth rate of GA has increased gradually within 5 years from 0.58 to 2.61 mm2/year in the right eye and from 0.19 to 0.58 mm2/year in the left eye.

Conclusion: In this case, HCQ treatment for the SARS-CoV-2 infection did not seem to affect the progression of GA in the short-term, while an effect on BCVA cannot be excluded. Further studies with a larger sample size and longer follow-up are needed to investigate the effect of HCQ treatment for SARS-CoV-2 infections.

Financial Interest: None: No commercial relationship
Grants: Es gab keine Zuschüsse.

Glaucoma

P96 | A case series of elderly patients with aortic stenosis (AS) undergoing awake glaucoma surgery in sub-Tenon's or subconjunctival anaesthesia

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Abstract: With swelling ranks of octogenarians scheduled for glaucoma surgery, more present with aortic sclerosis graded median or severe as part of their list of systemic disease. This presents a specific conundrum for anaesthesiologist and eye-surgeons alike: while surgeons will ask that arterial pressures be reduced to maximal degree for fear of expulsive suprachoroidal bleeding, anaesthesiologists will fear shock from decompensated AS should pressure be over-eagerly reduced by sedation or anti-hypertensive drugs.
As many of these patients seek treatment at an aggravated stage of their glaucoma, cancelling and postponing of these cases is often not a viable strategy.

Case vignettes: We report 4 cases of patients 78 years or older, classified as ASA 3 systemic disease patients, scheduled on one morning for glaucoma surgery with 2 classified as severe and 2 as moderate aortic stenosis patients. All presented with hypertensive pressure (range systoly 160-180 mmHg, range diastole 90-110 mm Hg) notwithstanding regular intake of their morning medication on the day of surgery. All 4 patients received small boluses of sedation (8 ug of dexmedethomidine iv, 10 mg propofol iv and 2/4 patients received 25 ug fentanyl) following which arterial pressures remitted to high normal pressures. The first patient presenting with the most severe AS was administrated sub-Tenon's block for trabeculectomy. Patients 2 and 3 were "downgraded" from TE to preserflow-procedures, Patient 4 underwent TE in awake analgo-sedation with the surgeon administrating subconjunctival local anaesthesia. During surgery, pressure rose to hypertensive values and local anaesthesia had to be repeated due to patient's discomfort in spite of the anaesthetist' efforts of improve analgosedation. Towards the end of surgery a localized a delineated temporal choroidal bleeding was remarked, intra-cameral pressure stabilized and mannitol administered systemically. Follow-up was complicated by exorbitant intraocular pressure swings and a secondary localized choroidal bleeding after one suture was severed for IOC-relieve 10 days after surgery. Improvements in the patients eye during follow-up were steady but slow.

Discussion: As exemplified in these cases the contradicting haemodynamic demands of aortic stenosis versus glaucoma surgery situation are challenging. Both anaesthetist and surgeon have to attune their strategy to provide optimal transmural pressu

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