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ABSTRACT BOOK

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Systematic review of sample size calculations and reporting in randomized controlled trials in FP01.

ophthalmology over a 20-year period

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Purpose: Randomized Controlled Trials (RCTs) are considered the gold standard for the practice of evidence-based medicine. The purpose of this study is to systematically assess the reporting of sample size calculations in ophthalmology RCTs in 5 leading journals over a 20-year period.

Method: The MEDLINE database was searched to identify full reports of RCTs in the journals Ophthalmology, JAMA Ophthalmology, American Journal of Ophthalmology, Investigative Ophthalmology and Visual Science, and British Journal of Ophthalmology between January and December of the years 2000, 2010 and 2020. Screening identified 559 articles out of which 289 met the inclusion criteria for this systematic review. Data regarding sample size calculation reporting and trial characteristics was extracted for each trial by independent investigators.

Results: In 2020, 77.9% of the RCTs reported sample size calculations as compared with 37% in 2000 (p < 0.001) and 60.7% in 2010 (p = 0.012). Studies reporting all necessary parameters for sample size recalculation increased significantly from 17.2% in 2000 to 39.3% in 2010 and 43.0% in 2020 (p < 0.001). In 2020, 38.4% of studies reported different sample sizes in the online registry from the published article. Overall, the most studied area in 2000 was glaucoma (29.6% of RCTs), whereas in 2010 and 2020, it was retina (40.2 and 37.2% of the RCTs, respectively).

Conclusions: Sample size calculation reporting in ophthalmology RCTs has improved significantly between the years 2000 and 2020 and is comparable to other fields in medicine. However, reporting of certain parameters remains inconsistent with current publication guidelines.

Postoperative Descemet Membrane Detachment

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Purpose: To present a case of postoperative Descemet membrane detachment after combined vitrectomy and IOL exchange of a dislocated IOL with a scleral-fixated IOL.

Method: The combined vitrectomy, removal of the dislocated IOL through a scleral tunnel and implantation of a scleral-fixated IOL in the right eye of an 88 y.o. patient was uneventful. On the 7th post-op day exam, the patient mentioned that the vision had not improved and the slit lamp examination revealed stromal corneal edema and inferonasal corneal Descemet membrane detachment, located away from corneal incisions. The diagnosis was confirmed using anterior chamber optical coherence tomography and an air bubble was carefully inserted into the anterior chamber.

Results: 1 week later, the Descemet membrane was attached, the corneal anatomy and the anterior chamber structure were restored, and the vision improved.

Conclusions: Descemet membrane detachment mainly occurs after cataract phaco-emulsification but it should always reside in the differential diagnosis of postoperative complications of surgeries that involve surgical manipulations inside the anterior chamber, as its immediate surgical treatment leads to complete vision recovery.

Bilateral Acute Iris Transillumination (BAIT) or Pigment Dispersion Syndrome (PDS)?

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Purpose: To discuss a case of acute bilateral pigment dispersion in the anterior chamber with iris transillumination.

Method: In every visit we performed a full Slit Lamp Examination (SLE) with intraocular Pressure (IOP) and Snellen Best Corrected Visual Acuity (BCVA) measurements. Anterior segment imaging was performed with a Slit Lamp Camera and an anterior chamber OCT (Heidelberg Anterion).

Results: a 33-year-old female presented in our clinic with acute bilateral painful red eyes and photophobia for the last 4 days. Fifteen days ago, she was hospitalized for pneumonia and she was treated with i.v. moxifloxacin. BCVA was 10/10. IOP was 14mmHg. SLE revealed bilateral conjunctival hyperemia, mild pigment in the anterior chamber, asymmetrical iris transillumination and mid-dilated and atonic pupils. During follow-ups, pigmented particles were noticed on lens capsules and on endothelium. Gonioscopy showed a heavy pigment deposition in the iridocorneal angle.

Conclusions: BAIT and PDS are clinical entities that share similar and common characteristics. Our case was diagnosed as a BAIT syndrome due to clinical characteristics, such as a non-spoke-like peripheral iris transillumination, a pupillary atony and mid-dilation that were obvious since the first examination. Systematic antibiotic treatment also preceded the symptoms. BAIT is an important cause of pigment dispersion and clinicians must be vigilant for this condition to avoid unnecessary diagnostic tests and treatment.

FP04. Interesting cases. Two cases of double lacrimal puncta in lower eyelids

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Purpose: Presentation of two rare cases, at which we have double lacrimal puncta. The first patient was complaining for dry eyes since months and the second patient came for foreign body removal.

Method: Male patient 75 years old, came at regular outpatient department of opthalmological clinic of General Hospital of Katerini due to intense dry eye syndrome since months. Dyring clinical examination at slit lamp, we accidentally found double lacrimal puncta at lower eyelid of left eye. Except dry eye, he didn't have other symptoms and visual acuity was normal. We catheterized both lacrimal puncta separately with accompanying irrigation with povidone-iodine solution 5%. The other patient came at emergency department of opthalmological clinic of General Hospital of Katerini due to foreign body entrance at his left eye, 1 hour ago. After removal of the foreign body from patient's cornea, we prescribed suitable antibiotic treatment and accidentally we found double lacrimal puncta at his lower eyelid of left eye. Patient didn't accept more fastidious examination, because was in a hurry due to other obligations.

Results: At first patient, both, nasally lacrimal punctum and the lacrimal system were open. However, the temporally placed lacrimal punctum wasn't connected with the rest lacrimal system. We prescribed artificial tears for dry eyes and gave proper instructions. The second patient, on the other hand, refused to undergo an examination to see the passability of the lacrimal system.

Conclusions: Existence of double lacrimal puncta is a rare congenital anomaly. It doesn't need an intervention in most cases. If symptoms are present, it is necessary to investigate the lacrimal system, in order to decide whether surgical intervention is useful or not.

Longitudinal changes in objective accommodative response, pupil size and spherical aberration: a case study Sotiris Plainis¹, Sophia Panagopoulou¹, Neil Charman²

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Purpose: Previous transverse studies have shown that the slope of the static accommodation response/stimulus curve declines as complete presbyopia is approached. Changes in pupillary miosis and ocular spherical aberration are also evident. This study further investigates longitudinal changes in the relationships between the static accommodative response, pupil diameter and spherical aberration of a single adult.

Method: A wavefront analyzing system (COAS), was used in conjunction with a Badal optometer to allow continuous recording of the aberration structure of the dominant eye of a low myope for a range of accommodative demands over a period of 17 years, until the age of 50. Monocular accommodative response was calculated as the equivalent refraction minimizing wavefront error. The associated longitudinal changes in pupil size and spherical aberration with accommodation were also recorded.

Results: A decrease in accommodation response with age was found at almost all target vergences, with the changes being greatest for the higher vergences. In addition, although absolute pupil diameter decreased with age, the rate of change in pupil diameter with accommodation stimulus was approximately constant with age. Pupil constriction occurred for near stimuli even in full presbyopia. Spherical aberration changed linearly with accommodation response at all ages.

Conclusions: Objective amplitude of accommodation declines linearly with age as complete presbyopia is approached, while the slope of the response/stimulus curve also falls. The retinal image blur associated with the larger accommodation lags, found with higher accommodation stimuli, is reduced by pupil constriction and the resultant lower levels of spherical aberration.

Paraneoplastic Syndrome presenting as Orbital Myositis

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Stoke Mandeville Hospital, United Kingdom

FP05.

FP06.

Purpose: To report a case of paraneoplastic syndrome presenting as orbital myositis.

Method: A 45-year-old man first noticed intermittent binocular diplopia, swelling, redness and severe ache of the left eye in 2015. Brain MRI, orbit and CT angiogram was carried out and oral treatment with Prednisolone tablets for left orbital myositis was initiated. Although initially responding well to treatment, on tapering the steroids, his clinical symptoms recurred. Extraocular muscle biopsies were performed, and results were consistent with left myositis and excluded any underlying lymphoma or paraneoplastic syndrome; a course of iv methylprednisolone was initiated. Investigations did not show any biochemical signs of TED or signs of any significant inflammatory conditions. ANA, ANCA, RF, IgG4 were negative, urine clear and renal function as well as chest X-ray normal. At that point, he was investigated in Moorfields presumably for GPA, but it was ruled out. Squint surgery was carried out and the patient was discharged since his condition had burnt out. Three years later, he presented with a left flare-up and treatment with iv methylprednisolone and radiotherapy was initiated. In the follow-up appointment, he presented with a first episode of bilateral involvement, with progression of his symptoms despite significant amounts of intravenous steroids and radiotherapy. An urgent PET scan was performed.

Results: The PET scan identified a focus of FDG uptake within the nasopharyngeal soft tissues, the lymphoid tissue within the neck, including the pharyngeal and lingual tonsils, enlarged bilateral cervical lymph nodes and avid FDG uptake at the rectosigmoid junction.

Conclusions: Very few case reports of paraneoplastic syndrome masquerading as orbital myositis have been described in the literature and a high index of suspicion is required. A multidisciplinary approach in these patients is necessary.

FP07.

FP08.

FP09.

Twelve-month efficacy and safety outcomes of the First UK Series of MINIject Supraciliary Implant

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Purpose: This study evaluates the efficacy and safety of the MINIject (iSTAR Medical, Wavre, Belgium) supraciliary, microinvasive glaucoma drainage device in patients with progressive primary open angle, primary angle closure and normal tension glaucoma. **Method:** Consecutive patients received MINIject between 03/2022 and 12/2022. Primary outcome was reduction of intraocular pressure (IOP) at 12 months. Secondary outcomes included success at 12 months, defined as IOP \leq 18 mmHg and reduction of at least 1 glaucoma medication. Other secondary outcomes included IOP at other follow-up time points, reduction in glaucoma medications, intraoperative and postoperative complications and need for further glaucoma surgery.

Results: Forty-one (21 male and 20 female) patients were included. Standalone MINIject was implanted in 11 eyes and in 30 eyes it was combined with phacoemulsification. Preoperative IOP was 18.23 mmHg on 2.26 medications and this was reduced by 2.91 mmHg to 15.31 mmHg (p=0.03) on 1.69 (p<0.001) medications. At 12 months, success rate was 80%. Regarding intraoperative complications, 2 patients had haemorrhage in the anterior chamber (AC) that was managed successfully without any intervention. Only one patient had significant postoperative hyphaema that needed AC washout the first week. No patients needed subsequent glaucoma surgery.

Conclusions: This first in the UK study shows promising IOP-lowering results and medication reduction over 12 months with few adverse events.

Real-world study of Intraocular Pressure and Medication reduction in Ab Interno Microinvasive Glaucoma Surgery combined with cataract surgery compared with cataract surgery only: 6 month-data Panagiotis Dervenis¹, Shaheryar Khan¹, Ihsan Fazal¹, Nikolaos Dervenis², Chrysostomos Dimitriou¹

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Purpose: Aim of this study is to compare the Sclemms's canal based MIGS devices with standalone phacoemulsification in POAG and to assess their effect on intraocular pressure (IOP), glaucoma progression and their safety.

Method: A retrospective, comparative study was carried out on POAG patients treated with i-Stent, Hydrus, OMNI and standalone phacoemulfication between 2nd August 2021 to 31st August 2023 at Colchester Hospital. Intergroup differences in IOP and visual acuity (VA) were compared preoperatively and postoperatively.

Results: 143 consecutive cases were analysed which included 50 Hydrus, 31 i-Stent, 36 OMNI, and 26 standalone phacoemulsification cases. There was no significant change in VA preoperatively and postoperatively at all intervals for all groups. At the last follow-up, IOP analysis showed i-Stent achieving 4.71 mmHg reduction, OMNI 3.26 mm Hg, Hydrus 2.67mmHg and standalone Phaco none (0.0mm Hg), (p=0.05 for Hydrus versus i-Stent; p=0.14 for Hydrus versus OMNI; p=0.57 for i-Stent versus OMNI). Mean medication reduction was also similar for Hydrus, i-Stent and OMNI, being 1.14, 1.09 and 1.0 respectively (p=0.05 Hydrus v/s i-stent; p=0.14 hydrus v/s OMNI; p=0.09 i-stent v/s OMNI). Standalone phacoemulsification patients had 0.16 medication reduction (p=0.009 for Phaco v/s Hydrus). Complications were rare with no significant differences between groups. **Conclusions:** I-stent, Hydrus and OMNI had similar outcomes post-operatively at third follow up with good, sustained IOP reduction, good safety profile and no significant difference between the groups, while standalone phacoemulsification which showed less reduction.

Clinical efficiency and safety after 1 year of MIGS with Trabex + procedure to glaucoma patients

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Purpose: MIGS provides the ophthlamic surgeon with a surgical intervention that is safer than current filtration surgeries and more effective than medical treatments. Our purpose is to present the primary outcome results of our Trabex+ device experience in patients undergoing irrigating goniectomy and to describe its efficacy and safety as a standalone procedure.

Method: The study comprises a prospective case series of 35 consecutive eyes treated by a single surgeon at a tertiary general hospital. Baseline demographics as well as pre-operative, intraoperative and postoperative data were collected over a 12-month follow-up. Outcome measures included intraocular pressure (IOP), number of glaucoma medications and secondary glaucoma surgery, if any. Success outcome was reported when the following criteria were met: \geq 20% IOP lowering, IOP \leq 21 mmHg at latest follow-up, without the need for reoperation, whilst on an equal or lower number of IOP-lowering medications.

Results: Thirty-five patients (mean age 73,9 \pm 9,1 years) were enrolled. At 12 months, IOP was reduced from 18,2 mmHg (SD 3,1) to 17,7 mmHg (SD 3,4) (6,8% reduction) (p=0,55), and the number of glaucoma medications from 3,1 \pm 0,7 to 0,9 \pm 1,1 (72,1% reduction) (p<0,001). No secondary glaucoma surgery was needed.

Conclusions: The use of TrabEx+ significantly reduced the IOP and glaucoma medications and showed good safety profile. Data from more cases with longer follow-up are required to determine whether the statistically significant changes are translated into clinically significant ones. Nevertheless, this study offers an insight into the real-world use of the above technique and its outcomes on a more all-inclusive basis.

Free floating cystic formation in the anterior chamber

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Purpose: To report a rare case of a free floating cystic formation.

An 85 year-old male patient, with a history of hypertensive uveitis in his right eye, presented for his scheduled appointment. The onset of the inflammation is placed six months before, following Yag laser capsulotomy. During his follow-up, the presence of minute bubbles scattered on the surface of the iris stroma and angle structures was described.

Upon presentation, slit lamp biomicroscopy revealed a single, spherical, whitish, opaque, non-pigmented formation, 2mm in size approximately, protruding behind the upper pupil margin. After mydriasis, it became free and mobile. In the upright position, it was visible at 12 o'clock, suggesting that its molecular weight was lower than that of aqueous humor's.

BCVA of the right eye was 4/10 and IOP was 22mmHg. There was no active inflammation and fundus examination presented no significant pathology.

Method-Results: The management included surgical removal, followed by histopathological and microbiological examination of the formation and an aqueous humor sample. There was no cellular material found, instead the lesion dissolved upon cytological preparation. Microbiology results are still pending.

Conclusions: The presence of this acellular formation in the anterior chamber consists an extremely interesting differentialdiagnostic, mainly because of the absence of similar cases, in the literature. Identification of the cause is critical, in order to provide early and appropriate treatment.

FP11.

Preschool children's visual acuity screening of Samothraki Island

Eirini-Kanella Panagiotopoulou, Christina Mitsi, Minas Bakirtzis, Aise Adem, Aristeidis Konstantinidis, Aikaterini Giannoukaki, Ioannis Fotiadis, Doukas Dardabounis, Georgios Labiris Department of Ophthalmology, University Hospital of Alexandroupolis, Alexandroupolis

Purpose: The evaluation of the visual acuity of preschool children on the island of Samothraki.

Method: This is a prospective epidemiological study. Preschool children attending the kindergartens of Samothraki Island were evaluated in terms of their visual acuity. The children were divided into two groups according to their age (4 and 5 years old). The evaluation was carried out within the school units. Visual acuity was assessed with the validated web-based digital chart DDART (Democritus Digital Acuity & Reading Test), specifically using the Tumbling E symbols, which were simulated in the application. **Results:** The study included 44 children, 20 aged 4 years and 24 aged 5 years. In total, 91% of the preschool student population of Samothraki Island was examined. Seven children (15.91%) of those assessed needed further ophthalmological examination. Low visual acuity in the majority of children (4 children) was due to a possible refractive error, while 3 children appeared low cooperation. **Conclusions:** The assessment of the visual acuity of preschool children, especially in remote islands, is a major issue of primary ophthalmological care, due to the diagnosis of diseases that require immediate treatment.

FP12.

Pre-school children's visual acuity screening of the Municipality of Alexandroupolis

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Purpose: Visual acuity screening of pre-school children in the Municipality of Alexandroupolis.

Method: This is a prospective epidemiological study. Preschool children attending the kindergartens of the Municipality of Alexandroupolis were evaluated in terms of their visual acuity. The children were divided into two groups according to their age (4 and 5 years old). The evaluation was carried out within the school units. Visual acuity was assessed through the validated webbased digital chart DDART, specifically using the Thumbling E symbols, which were simulated in the application.

Results: The study included 898 children, 504 aged 5 years and 394 aged 4 years. In total, 86.76% of the preschool student population of the Directorate of Primary Education of Alexandroupolis was examined. 6.8% of children assessed needed further ophthalmological examination. Low visual acuity in the majority of children (6.46%) was due to a possible refractive error, while 0.33% was due to other ocular disease.

Conclusions: Visual acuity screening of preschool children is a major issue of primary ophthalmological care, due to the diagnosis of diseases that need immediate treatment.

FP13.

Customized Femto-LASIK (cfL): RayTracing vs. Asphericiry adjustment (cQ) For Myopia and Myopic Astigmatism: 3 month Randomized, Prospective, Contralateral eye Study

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Purpose: The comparison in Safety and efficacy of a novel automated RT optimization in customization of Excimer laser ablation vs. Custom Q.

Method: This contralateral eye study included 50 eyes of 25 patients 25 eyes were treated with RT cfL using the Wavelight Plus novel platform and the fellow eye, treated cQ and the RT automated refraction for low order aberrations. Evaluated perioperative at 3 months: uncorrected distance vision acuity (UDVA), corrected distance vision acuity (CDVA), refractive error, corneal keratometry, high order aberrations (HOA) and contrast sensitivity (CS).

Results: For a follow-up of three months, change from pre- to post-operative values at 3 months: mean refractive error -4.5 diopters (D) (range -1 to -8 D) to +0.11 \pm 0.25D; Refractive astigmatism from -1.5 \pm 1.5 D (range -4 to 0 D) to -0.25 \pm 0.25 D, topographic astigmatism from - 1.75 \pm 1.5 D (range -4.25 to0) to -0.33 \pm 0.25 D. 85% vs. 45% of eyes gained one line of vision and 35% vs. 10% 2 linesrespectively RT vs. cQ groups. Although CS was comparable, HOA were statistically lower at 3 months for the RT group.

Conclusions: This contralateral eye study of safe and effective treatment of myopia with cfL, suggests statistical significance in lines of vision gained, and induction of less HOA with raytracing optimization of low and HOA. Using the RT refraction appears to offer outstanding visual performance data for the cQ group as well.

P14. Refractive errors of school and preschool children: The experience of the primary outpatient service of a public general hospital

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Purpose: To evaluate refractive errors among school and preschool children examined at the paediatric ophthalmology outpatient service of the General Hospital of Chania, Greece and to perform SWOT analysis regarding the operation of a special paediatric ophthalmology department in the outpatient clinic of a general hospital.

Method: Retrospective, descriptive analysis of all school and preschool children who visited the paediatric ophthalmology outpatient service of the General Hospital of Chania, Greece from January 2019 to March 2020.

Venue: Outpatient service, General Hospital of Chania, Greece

Results: A total of 353 children were examined, 168 boys (47,6%) and 185 girls (52,4%). Simple control was the reason of the visit followed by referrals and control because of an underlying condition. Of the children who presented with a regular appointment, 71 (22.1%) had myopia, 47 (14,6%) had hyperopia and 203 (63,2%) were emmetropic. 11,5% of the children were <6 years old, 54,8% were 6 to 12 years old and 31,2% were >12 years old. Additionally, 30 (25,4%) children were diagnosed with refractive error for the first time and 31 (26,3%) needed a change in their correction. The SWOT analysis highlights the positive prospects of the paediatric ophthalmology outpatient service, especially after COVID-19 pandemic.

Conclusions: Refractive errors in children should be carefully monitored to ensure the development of children's visual system and reduce the possibility of complications. Therefore, the presence of an organized paediatric ophthalmology outpatient service in a general hospital is necessary to follow up them closely.

FP15. Retrospective analysis of wavefront-optimized myopic LASIK: Comparison of preoperative to postoperative astigmatism and high order aberrations: trefoil and coma specifically. Could topography-guided original customization had addressed the above?

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Purpose: The purpose of this retrospective study was to evaluate and analyze visual outcomes by recording pre and postoperative trefoil, coma and refractive astigmatism in wavefront optimized myopic LASIK.

Method: In this retrospective case review 200 eyes (100 patients) that had undergone myopic (with corresponding astigmatism) wavefront-optimized LASIK using the FS200 femtosecond and EX500 excimer lasers (Alcon/Wavelight, Erlagen, Germany) were evaluated. The 12 months post-operative UDVA and CDVA, low (myopia and/or astigmatism) along with high order aberration C6 to C9 changes were compared to the pre-operative values. Pre-operative topography data were available and used to generate for this study hypothetical treatment data (low and high order aberrations) if topography-guided (TG) with TMR cylinder amount and axis adjustment was used instead of the actual WFO.

Results: Mean values at 12 months: UDVA of 20/22 and CDVA of 20/20. The postoperative refractive error in Diopters was -0.20 \pm 0.46 sphere and - 0.45 \pm 0.27 cylinder. The average absolute value for the high order aberrations studied were pre-op: C6: 0.10 \pm 0.12, C7: 0.19 \pm 0.16, C8: 0.15 \pm 0.12, C9: 0.09 \pm 0.09µm and respectively post-op, C6: 0.11 \pm 0.10, C7: 0.46 \pm 0.38, C8: 0.34 \pm 0.30, C9: 0.11 \pm 0.13µm. If topography-guided customization with TMR was originally employed an addition mean -0.36D of astigmatism would have been attempted.

Conclusions: Wavefront optimized ablations do not address HOA, pre-existing trefoil (C6, C9) in this group essentially did not change while coma (C7 and C8) increased despite the essential achievement of emmetropia. In theory topography-guided customization with TMR may had offered improved C7 and -C8 outcomes, along with superior cylindrical correction.

Initial data of Myopic SMILEplus in Greece with the Visumax 800 FP16.

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Purpose: To evaluate the safety and efficacy of myopia correction treatments with SMILEplus. Setting: The Laservision.gr Clinical and Research Institute, Athens, Greece

Method: An observational Single-Arm Consecutive Case Series; 15 consecutive myopic and myopic astigmatic SMILEplus treatments (30 eyes). All cases were treated with SMILEplus with Zeiss VISUMAX-800. Visual Acuity, Refractive Error, Scheimpflug and OCT Tomography were evaluated over a two-month follow-up.

Results: The femto-lenticule preparation was under 8 seconds in all cases compared to the minimum 25" with the older version of the Visumax 500, that we had published extensively. At the two-month follow-up, all eyes reached UDVA of 20/20 or more, change from pre- to post- operative mean values were: refractive error from -4.34D (range -7.25 to -2.00D) to -0.35D; refractive astigmatism from -0.75D (range 0 to -3.25D) to -0.44D; topographic astigmatism from -1.28D (range -4.1 to - 0.7D) to -0.88D. Defocus equivalent of 0.55D.

Conclusions: We report safe and efficient initial outcomes in Greece using SMILEplus for myopic treatments. This technique carries the comparable outcomes and advantages with standard myopic femtoLASIK without the potential short and long term disadvantages of a stromal flap.

Case Report: Lasik temporal flap characteristics using the new generation Microkeratome MI7

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FP17.

FP18.

Purpose: To evaluate the accuracy and consistency of corneal flap thickness, horizontal diameter, and hinge size with the ML7 (MedLogics, Inc.).

Method: 10 myopic and 4 hyperopic patients with mean age 28 years underwent Lasik with a temporal hinge flap using the ML7 (MedLogics, Inc.) microkertome (100µm head, ring 9.0mm). Prospective evaluation included flap thickness (with Optical Coherence Tomography- OCT), diameter, interface particles (evaluation on slit lamp), intraoperative complications, visual recovery (Visual acuity, contrast sensitivity) and quality of tear layer (Break-Up-Time, B.U.T).

Results: The mean postoperative flap thickness after 1 month was 105+/8µm and the flap diameter 8.90+/-6µm (expected 9mm), expected mean according to the nomogram given by the company. No interface particles were detected on slit-lamp examination. 90% of the eyes achieved UCDVA 20/20 after 1 month and 100% 20/25 or better. Mean B.U.T was 9+/-4 sec and the contrast sensitivity was found reduced but still in the normal range in 9 patients and out of normal range in 5.

Conclusions: The ML7 is safe with good predictability for LASIK flap creation, providing very good visual outcomes

Evaluation of the visual performance of patients bilaterally implanted with three different intraocular lenses in a lighting facility of different lighting combinations for a series of activities of daily living <u>Eirini-Kanella Panagiotopoulou</u>, Eirini Vavanou, Minas Bakirtzis, Christina Mitsi, Aristeidis Konstantinidis, Georgios Labiris Department of Ophthalmology, University Hospital of Alexandroupolis, Alexandroupolis

Purpose: To compare the visual performance of patients following premium pseudophakic presbyopia corrections in an experimental lighting facility with different light combinations for near- and intermediate-vision activities of daily living (ADLs). **Method:** This is a prospective, comparative study. First, the experimental lighting facility was constructed and validated with three 35-participant normophakic groups with different BUNVA: a) VG1: 0.0-0.1 logMAR, b) VG2: 0.4 logMAR, c) VG3: 0.7 logMAR. All participants addressed 10 ADLs requiring near and intermediate vision in three lighting settings: 1) 25 fc/3000 K, 2) 50 fc/4000 K, 3) 75 fc/6000 K. Then, pseudophakic patients populated three 25-participant groups with bilateral IOL implantation: a) G1: trifocal diffractive (Panoptix), b) G2: bifocal hybrid refractive- diffractive (Restor), c) G3: monofocal (SN60WF). All participants addressed the 10 ADLs in nine light temperature and intensity combinations.

Results: The ADL framework demonstrated sufficient construct validity. VG1 demonstrated the best ADL scores, followed by VG2. In the main study, G2 and G3 had the best total ADL scores in 6000 K/75 fc, while G1 had the best total ADL score in 4000 K/75 fc. Total ADL, easy ADL, and moderate difficulty ADL scores were significantly better in G2, while difficult ADL score was significantly better in G1.

Conclusions: Patients with trifocal IOLs benefit from intense daylight, while patients with bifocal and monofocal IOLs benefit from intense, cold lighting. Patients with trifocal IOLs present superior near-vision capacity in difficult near-vision daily tasks, while patients with bifocal IOLs present superiority in easy and moderate-difficulty ADLs.

FP20.

FP21.

Interface fluid after uneventful LASIK in a patient with Iridocorneal Endothelial Syndrome

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Purpose: To report a very rare case of interface fluid syndrome occurring 15 years after uneventful LASIK in a patient with Iridocorneal Endothelial Syndrome (ICE).

Method: A 49-year-old female was referred to the cornea clinics complaining about blurry vision in her left eye during the last year. The patient had undergone uneventful Femto-LASIK in both eyes fifteen years ago. Upon examination, best corrected visual acuity (BCVA) was 20/20 in her right eye and 20/200 in her left eye, while intraocular pressure measured with Goldmann applanation tonometry and Corvis was normal in both eyes (14mmHg OU). The biomicroscopy revealed a slightly edematous cornea in the left eye as well as correctopia with ectropion uveae, segmental iris atrophy and mild nuclear sclerosis, while the examination was uneventful in the right eye.

Results: The patient underwent specular microscopy which demonstrated endothelial cells with loss of the typical hexagonal corneal endothelium shape, pleomorphic appearance, and "light-dark reversal". The anterior segment OCT showed an accumulation of fluid in the interface, which regressed after the administration of topical steroids and hypertonic saline solution for 2 weeks. BCVA improved but remained at 20/60 due to a persistent subtle corneal edema and a mild corneal ectasia.

Conclusions: Although rare, ICE may be the cause of interface fluid syndrome even years after uneventful LASIK surgery. Therefore, its prompt diagnosis and management could be crucial, especially in refractive surgery patients.

Cataract surgery on-the-day cancellations and optimization of preoperative assessment

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Purpose: Review on-the-day cancellation reasons alongside current pre-op assessment to identity if assessment needs review. Improve patient outcomes and hospital costs as a result.

Method: Retrospective study of cataract surgery cancellations during a 1-year period (78 patients). Reasons for cancellation reviewed and categorised into avoidable and unavoidable.

Results: 48/78 were avoidable causes (including staff/equipment reasons, preassessment issues, admin issues, and patients deemed unfit for surgery). No bed/staff was highest cause of cancellation. BM second highest and BP 3rd highest.

Conclusions: Emphasis on anaesthetic preference on preop. Discuss with consultants before listing high-risk patients. Make sure IOL is available or ordered for extremes. Review of relevant guidelines to streamline assessment. Review of recommendation for on-the-day high BP.

A new device for universal IOL double flanged scleral fixation

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Purpose: Failure of the symmetry of the suture passing points in the IOL's optic, represents one of the pitfalls of the double-flanged scleral fixation technique that may lead to IOL tilting and induced postoperative aberrations. The purpose of our work is to describe and present a novel instrument that permits an easy handling of any IOL during the precise pass of the suspending sutures for double flanged scleral fixation respecting the optic's diameter and the symmetry of the lens' suspending points.

Method: The device was designed using CAD software and printed using a 3-D printer. The design includes 3 parts: 1) a handle that permits single-hand holding of the device and carries the sitting base of an IOL insert and a fixation lever, 2) an engraved, interchangeable IOL insert that permits the positioning of the desired IOL in the appropriate alignment assuring that the passing points of the suspending sutures will be symmetrically positioned at the IOL's optic; different IOL inserts accommodate for various IOL designs while two antidiametrically positioned slots determine the points of suture passage in order to maintain axial symmetry, and 3) a lever that fixes the IOL in the desired position permitting the use of one hand for holding the instrument-IOL complex while the other is used to precisely pass the sutures through the pre-specified points of the IOL's optic.

Results: The design of the engraved insert permits an accurate alignment of the IOL so that the two slots expose two areas ideally positioned to offer axial symmetry of the suture passing points. Fixation of the IOL in position using the lever offers freedom to handle the device with one hand. The design of the lever and the insert offer adequate support while the suture needle is advanced through the lens' optic.

Conclusions: We describe a novel device that facilitates the precise symmetrical positioning of suspending sutures for double-flanged IOL scleral fixation. Axial symmetry of passing points and respect of the lens' optic diameter can result in minimal IOL tilting. The possibility of IOL insert engravement customization make the device suitable for any lens design.

FP22.

Prospective observational study of the effect of the tear film on biometry determination

<u>Giazitzis Christos</u>, Tsinopoulos Ioannis, Mylona Ioanna, Lampiris Georgios, Papageorgiou Menelaos Study carried out within the postgraduate program «Ocular Surgery»

Purpose: This study observes the effect of the tear film during biometrics.

Method: The method used is that of the progressive study. 52 patients who had not undergone any ophthalmological surgery, were not users of artificial tears and had a score greater than 10 in the Schirmer's test were selected. The tear film was also evaluated with the Tear film break up time. Biometry was performed using two different machines, the Echoscan US-4000 by NIDEK and the IOLmaster 500 by ZEISS, and the variables: axial length, anterior chamber, and selected IOL aiming at zero were recorded. The patients were then given artificial tears for a period of 15-20 days and the measurements were repeated. As we had multiple measurements per instrument the "P" significance level was modified to avoid false positive comparisons according to Bonferroni for a desired alpha level < 0.05.

Results: The results were statistically analyzed using SPSS and in the majority of the variables a high reliability index of the diagnostic procedure was obtained.

Conclusions: The study showed that there is a statistically significant difference in the measurements concerning the tear layer (BUT & Schirmer's test) before and after the use of artificial tears, but no statistically significant difference was observed in the measurements made with the biometric machines.

FP23. Interesting case. Diagnosis and treatment of a 57 years old female patient with anterior polar cataract

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Purpose: Case report with rapid decrease of vision acuity during a trimester due to anterior polar cataract.

Method: 57 years old female patient came in a scheduled appointment to the Opthalmological out-patient clinic in General Hospital of Katerini due to decreased visual acuity in the right eye relatively to the left. The clinical examination showed: counting fingers (1m) in the right eye, 10/10 with +1,75 sph in the left. Both cornea and conjuctiva had no pathological signs. After pupil dilation, anterior polar cataract was present in the crystalline lens of the right eye. During retinal examination all the nerves, vessels and moculas found normal in both eyes. Afterwards the patient was referred to the General Hospital of Thessaloniki "O Agios Dimitrios" for further treatment and surgical extraction of the cataract.

Results: The right crystalline lens was surgically removed and replaced with artificial intraocular lens approximately 2 months after diagnosis. The follow up examination, 15 days after surgery, showed visual acuity 8/10 in the right eye.

Conclusions: Even if the anterior polar cataract is a rare condition, it can affect visual acuity faster from other types of cataract, due to its anatomy and density. The surgical extraction of the cataract may be risky.

FP24. Clinical Safety and efficacy of a Novel Intracapsular Reconstructor (fixOflexTM) in a Real-world Population: a 6-month Follow-up Prospective Study

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Purpose: This prospective study evaluated the visual, refractive, and safety outcomes of an endocapsular device in combination with an intraocular lens (IOL) 6 months after implantation in cataract surgery.

Method: Cataract patients presented at ASUCA Eye Clinic (Sendai Mark One) having undergone crystalline lens extraction by phacoemulsification and implantation with the device in combination with an IOL between April 2022 and April 2023 were enrolled in the study. Preoperative, 1-week, 1-month 3-month, and 6-month postoperative data were collected. The examination included: monocular uncorrected (UDVA) and corrected distance visual acuity (CDVA), slit-lamp examination, optical biometry, intraocular pressure (IOP), flare values, endothelial cell count, and postoperative complications.

Results: 60 eyes of 45 patients were included in the study. reoperative, 1-week, 1-month 3-month, and 6-month postoperative data were collected. Six months after the surgery, mean postoperative CDVA and UDVA were -0.06 ± 0.13 logMAR and 0.06 \pm 0.18 logMAR, respectively. The device and IOL were stable in the capsular bag as demonstrated by tilt and decentration measurements. IOP, corneal status, endothelial cell count, and flare values were in the normal range. Posterior capsular opacification was observed in 1 patient. Nd:YAG treatment was not performed on any patient.

Conclusions: The use of the endocapsular device in combination with an IOL resulted in favorable visual outcomes, stability of the device and IOL in the capsular bag, and minimal complications at 6 months postoperatively.

FP25.

Monofocal plus lenses A new era?

Kallitsis An., Koutsidis Chr. G.H.A. «O Evaggelismos-Polykliniki»

Purpose: The goal of the study is to highlight the possibility of postoperative aidfree treatment for patients who are planned for cataract extraction (phacoemulsification).

Method: Report of cataract postop VA outcomes of 15 patients (30 eyes) with bilateral implantation of ISOPURE monofocal plus lens and mini-monovision strategy. Through the study patients with any kind of macula disorder, cornea diseases, astigmatism <1.0D and end-stage glaucoma were excluded.

Results: The binocular aidfree VA of the patients 3 months postop UDVA was 0.7-0.9 and the UNVA was J3-J1. The contrast sensitivity test has shown almost same results such as any other monofocal lens.

Conclusions: In conclusion, the monofocal plus lenses are an affordable way of treating patients who desire a spectacle free solution for their daily routine. The patient should be prepared to compromise with their slightly worse UDVA (in cases where minimonovision strategy is used) in comparison with bilateral implantation of a classic monofocal lens and target to emetropia OU.

FP27.

FP26.Surgical Outcome of Refixation versus Exchange of Dislocated Intraocular Lens: A Retrospective Cohort Study
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Purpose: to compare the surgical outcomes and complications of refixation vs. exchange of dislocated intraocular lenses (IOLs) in patients who underwent transscleral suture fixation or intraocular lens exchange for the treatment of IOL dislocation.

Method: A total of 32 eyes (n = 32 patients) with postoperative follow-up of \geq 6 months were evaluated: 27 received refixation of dislocated posterior chamber IOL (refixation group) via transcleral suturing while 5 received IOL exchange with anterior chamber IOL (exchange group) treatment. Treatment outcomes, including best-corrected visual acuity (BCVA), spherical equivalent, corneal cylinder, intraocular pressure (IOP), central macular thickness (CMT) and postoperative complications were retrospectively reviewed.

Results: BCVA improvement at 6 months after surgery was better in the refixation group. No significant differences were found in spherical equivalent, corneal cylinder, IOP, or CMT changes. The exchange group experienced significantly more frequent vitreoretinal complications than the refixation group.

Conclusions: Without any reason to extract the dislocated IOL, reuse of the dislocated IOL via transscleral suture fixation would be a better surgical option to prevent postoperative vitreoretinal complications.

Comparative Analysis of the Agreement of Keratometry Readings Across Three Devices in Varying Stages of Keratoconus

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Purpose: To evaluate the agreement of keratometry (K) readings obtained from three different devices - Pentacam HR, MS-39 and IOL-Master 700 - across various grades of keratoconus.

Method: A cross-sectional analysis was conducted on 168 eyes from 98 keratoconus patients, categorized into four stages (1-4) by maximum keratometry (Kmax): < 48.00, 48.00-53.00, 53.00-58.00, and > 58.00 diopters (D). We assessed flat keratometry (K1) and steep keratometry (K2) readings, including the equivalent keratometry readings (EKR) from Pentacam HR.

Results: The IOL-Master 700 and Pentacam HR demonstrated excellent agreement in K1 measurements (ICC 0.968, p < 0.001). For mild keratoconus (stages 1-2), all devices showed substantial agreement (ICC 0.85-0.94, p < 0.001), which diminished to moderate in more advanced stages (ICC 0.39-0.88, p < 0.001). A similar trend was observed with K2 readings, showing high consistency in early stages (ICC 0.67-0.9, p< 0.001) and lower in stages 3-4 (ICC 0.22-0.78, p < 0.001). Pentacam HR consistently reported higher K1 values than the MS-39, particularly in severe keratoconus (difference of 0.49/2.28 D, stages 3/4 respectively, p < 0.05). For Kmax > 53.00 D, IOL-Master 700 recorded significantly higher K2 values than MS-39 (differences of 0.81/2.35/4.2 D, stages 2/3/4 respectively, p < 0.001). The EKR formula consistently yielded flatter K values compared to the other K readings. **Conclusions:** The study indicates good agreement among devices for mild keratoconus cases, but only moderate in severe stages. It suggests that keratometry readings from these devices should not be used interchangeably in keratoconus, especially as the condition progresses.

FP28. Mini DSEK for corneal perforation

Anna Maria Sideri, Sophie Jones, Ruchi Gour, Emma Hollick

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Purpose: To report the outcomes of a new technique, to manage corneal perforations.

Method: We present the clinical outcomes of two cases of tectonic mini-DSEK performed in patients presenting with large corneal perforations. Both corneal perforations were sufficiently peripheral for the tectonic mini-DSEK graft to be successfully positioned outside of the central visual axis.

Results: Anterior chamber remained deep and formed with no evidence of leak in both patients

Conclusions: Mini-DSEK is a useful technique in the management of corneal perforations, with a number of advantages compared with conventional techniques.

FP29. Bilateral corneal melt

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Purpose: To describe a case where prophylactic post bilateral cataract surgery use of Dexamethasone/Neomycin/Polymyxin B+cyclosporin eye drops led to corneal melt with loss of vision in a patient with Rheumatoid arthritis and Sjogren's syndrome. **Method:** This is a case report of a 64-year-old male with dry eye, operated on both eyes for cataract. He received combined antibiotic and steroid topical drops after his cataract operations plus topical cyclosporine drops for one month without medical review. That led to bilateral corneal melt.

Results: The patient referred to our clinic 5 months post operatively with large epithelial defects, dense infiltrates and thinning impending perforation in both eyes. Improvement noticed after application of corneal glue bilateral. Secondary fungal keratitis followed in left eye.

Conclusions: The current case suggests that corneal melt can occur as a complication of use of topical combined antibiotic / steroid drops and cyclosporine in the presence of preexisting ocular surface disorders.

Treatment of Corneal Melt with Gundersen Flap in an elderly patient

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Purpose: To present an old method (Gundersen conjunctival flap) of treatment of corneal melt due to severe endophthalmitis in an elderly patient as an alternative to extraction.

Method: A 87 year-old patient came in the ER complaining of pain and loss of vision of her left eye. She did not mention a history of injury or any other ophthalmological history. During the clinical examination she presented central corneal melt with pus and hemorrhagic material output from the anterior chamber and intense redness and edema of the bulbar and palpebral conjunctiva. Orbit C/T scan showed hemorrhagic material in the vitreous, absence of crystalline lens and eyelid edema of the left eye. After the necessary blood tests were performed, local and intravenous antibiotic treatment for endophthalmitis was administered while due to the big corneal defect, the use of Gundersen flap with local anesthesia was decided in order to achieve the convergence of the cornea and the preservation of the bulb.

Results: The surgery was performed with sub-Tenon's anesthesia and complete coverage of the melted part of the cornea was achieved. The infection subsided and the patient was discharged with per os antibiotic treatment for 10 days and local treatment for a month after the hospital discharge. The eye was calm and covered with the conjunctival flap during the first weekly examinations and for at least 3 months later.

Conclusions: The Gundersen flap constitutes a very good alternative solution to extraction in cases of corneal melt due to heavy endophthalmitis in very elderly patients, concerning eyes without prospects of vision recovery as long as the control of the infection with proper local and systemic treatment is ensured.

FP31. Topographic Keratoconus Incidence in Greece Diagnosed in Routine Consecutive Cataract Procedures: A Consecutive Case Series In 1250 Cases Over 5 Years

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Purpose: Scheimpflug tomography has been for many years an integral part of our pre-operative assessment in cataract extraction. We retrospectively reviewed the incidence of topographic keratoconus and also keratoconus suspicion in our routine cataract surgery population over 5 years.

Method: in 1250 consecutive cataract surgery cases by one surgeon (AJK) in otherwise naïve eyes, accounting for years 2017 to 2021 we retrospectively evaluated by 5 different experienced evaluators (2 ophthalmic surgeons and 3 optometrists) the topographic incidence of keratoconus as classified by the Pentacam HR (stages 1 to 4) as well as keratoconus suspicion based on irregular pachymetry distribution, astigmatism truncation and/or irregularity. We formed 4 groups: A: keratoconus, B: suspicious for keratoconus, C: regular corneas and D: irregular corneas not keratoconus-related.

Results: Based on corneal topographic data the cases were classified as: 138 or 11% were included in group A, 314 or 26% in group B, 725 0r 58% in group C and final 6 or 5% in group D respectively. There was no disagreement between the 5 evaluators for any of the cases in group A, C and D, and little variance among them for cases included in group B (less than 5%).

Conclusions: The incidence of keratoconus and corneas suspicious for keratoconus in Greece appear to be greatly higher than the respective reports from other regions: one in ten Greeks appears to have topographic keratoconus-most not diagnosed even by the age of cataract surgery- and almost one in four may have suspicious corneal imaging for keratoconus. The implications of these data are great to promote routine screening for the disease among the Greek population, especially in puberty to potentially halt possible progression and careful screening when laser vision correction is considered.

FP32. Combined penetrating keratoplasty, cataract extraction and IOL insertion in a glaucomatous patient -The "triple procedure"

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Purpose: The demonstration of the surgical technique in a complex case of repeat penetrating keratoplasty due to a severe alkaline chemical burn and simultaneous cataract removal and intraocular lens insertion in a glaucomatous patient.

Methods: An 80-year-old patient is being followed up at the Cornea Clinic of the 1st Ophthalmology Department after an alkaline chemical corneal burn 4 years ago. His ophthalmological history includes includes glaucoma under topical medication since 10 years, previous penetrating keratoplasty 4 years ago, and graft rejection since 2 years. Preoperative concerns and possible intraoperative complications are analyzed, while the videography of the procedure and the postoperative results are presented. **Results:** The patient underwent a successful repeat penetrating corneal transplantation with simultaneous cataract removal and intraocular lens insertion and remains under postoperative follow-up. Postoperative intraocular pressure measurements were within normal limits, and his visual acuity improved significantly.

Conclusions: Penetrating keratoplasty with cataract surgery and intraocular lens insertion is a demanding surgical approach to the restoration of a patient's vision when circumstances dictate it (difficulty in movement, inability to undergo multiple surgeries, burdened general health).

FP33. Case Report: Improving Vision in adults with Nystagmus and Amblyopia with the method Neurovision <u>G.Toliou</u>, S. Georgaras, B. Neureither

Research & Therapeutic Institute, Athens

Purpose: This case report presents the clinical outcomes of 7 patients with congenital Nystagmus and amblyopia, who underwent the Neurovision therapy program.

Method: Following a baseline vision exam, 7 patients, with age range 18 to 51 years, performed 60 home vision training sessions during a 4-month period, 3-4 sessions weekly. Each training session lasted approximately 30 to 40 minutes in the conditions defined by the developer. The patients returned to the clinic for a follow- up vision examination every month until completion of the therapy. Six patients were trained binocularly and one monocularly, with their best correction in glasses or contact lenses or after refractive surgery.

Results: The best corrected distance vision improved by 1 line LogMar in one patient and 2 lines in six patients. The best corrected near vision improved 2.1 lines LogMar. Contrast sensitivity (CSF) improved by 162 % F.A.C.T sine wave and we noted improvement of stereopsis in 2 patients.

Conclusions: This case report demonstrates the successful use of the Neurovision software program in improving functional vision in nystagmus and amblyopic patients. The patients experienced an improvement in visual acuity, contrast sensitivity, and subjective visual functions. These findings highlight the potential benefits of this program in improving vision and quality of life for Nystagmus patients beyond available eye treatments.

FP34.

Mulitmodal imaging due to visual loss in a cadet of a military academy

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Purpose: To present a case report of sudden visual loss in a healthy cadet of a military academy.

Method: A retrospective case presentation of a 19-year-old girl who came to the outpatient clinic due to a decrease in her vision since the summer. The patient is a student at a military academy, and the Visual Acuity (VA.) was 10/10 in the right eye and 10/10 in the left eye when she had been examined prior to the recent visit. During the clinical examination, VA was 1/10 both eyes. The colour vision was 8/17 (Ishihara test plates) in each eye. Pupil reactions and slit-lamp examination were normal for the anterior segment. Fundoscopy showed a normal optic nerve head and macula atrophy.

Results: Optical coherence tomography (OCT) showed macular atrophy in both eyes. Autofluorescence showed signs of hypoautofluorescence in the macular region. The visual field showed central scotoma. The patient has a negative family history of macular disease and there is no consanguinity between the parents. The patient was referred to a specialized centre for electrophysiological testing. The results of the electrophysiological test showed a disturbance of the electrical activity of the macula mainly, a picture simulating Stargardt's disease.

Conclusions: This is the first description of an adult presenting with Stargardt's disease after entering a military academy. Stargardt's disease usually presents in childhood or adolescence without progression.

FP35.

Treatment of strabismus in adults using Botulin Toxin A (BOTOX) in titrating doses. The experience of our clinic

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Purpose: To present the treatment results of our clinic since the beginning of the use of Botulinum Toxin A (BOTOX) for the treatment of strabismus.

Method: A retrospective case series of patients treated with BOTOX from October 2022 to October 2023.

Results: 3 patients underwent a total of 16 BOTOX injections under electromyographic guidance with dosage proportional to the angle of the strabismus with good results without significant complications. The median injection period was 3 months. We had a success rate of 87.5%. We had one case (6.25%) of eyelid ptosis that did not obstruct the visual axis and 2 cases (12.5%) of overcorrection that resolved without having long-term diplopia.

Conclusions: The use of BOTOX in titrated doses according to the angle of strabismus helps to get better and predictable results and is a successful, safe, alternative treatment in cases of strabismus.

FP36.

FP37.

A Novel Sutureless and Glueless Pterygium technique by Human-Derived Dehydrated Amniotic Membrane <u>Kanellina Kanellopoulou</u>, Paraskevi T. Xanthopoulou, Mohamed F M. Elanwar, Motasim Al-Zyadi, Nick Kopsachilis East Kent Hospitals University NHS Foundation Trust

Purpose: To compare the efficacy and safety of pterygium excision surgery using human amniotic membrane derived dry matrix (Omnigen® Nu-Vision Biotherapies, UK) with conventional limbal conjunctival autograft for the treatment of primary pterygium. **Method:** A retrospective clinical study was conducted using the records of 82 patients (82 eyes) with primary pterygium. 40 patients underwent conventional surgery with conjunctival autograft and 42 with a novel glueless and sutureless technique involving the use of Omnigen® and a conjunctival pocket. All the patients were followed up postoperatively on day 1, 7, 14 and then at months 1, 3, 6, and 12. Outcome measures were surgery time, postoperative patient discomfort, complications, and recurrence rate.

Results: The mean surgical time for the Omnigen[®] group was significantly shorter at 20.5 minutes compared with the conjunctival autograft group at 37.4 minutes (P<0.001). Postoperative pain, foreign body sensation and epiphora were significantly less at postoperative day 1,7,14 and at month 1(P<0.05) in the Omnigen[®] group. During the follow up period one patient in the Omnigen[®] group had developed recurrence, two patients in the conjunctival autograft group developed recurrence and one patient in the autograft group developed a granuloma.

Conclusions: Using Omnigen[®] in the treatment of primary pterygium is a safe, fast, simple and more economical technique with less postoperative discomfort than conventional surgery with conjunctival autograft.

Clinical evaluation when combining the implantation of an EDOF and a trifocal IOL

in the same patient; real life data

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Purpose: To evaluate the optical outcomes after implantation of an EDOF intraocular lens (IOL) and diffractive trifocal IOL in the same patient.

Method: Patients with no ocular abnormalities except from cataract formation were selected to implant an EDOF IOL in the dominant eye and a diffractive IOL in the non-dominant eye, applying a mini monovision of -0.25 to -0.50 diopters. Visual acuity, contrast sensitivity, VF-7 questionnaire and halo glare simulator were evaluated.

Results: 20 patients were included in the study. EDOF IOL showed better results at distance visual acuity while trifocal IOL showed better results in near vision with the same outcome in intermediate distance. Contrast sensitivity revealed with no differences between EDOF and trifocal IOL in the same patient. Some optical phenomena were observed and satisfying results of questionnaire were obtained.

Conclusions: Implantation of an EDOF IOL in the dominant eye and a trifocal IOL in the non-dominant eye in the same patient showed overall excellent visual outcomes in all distances with minor optical phenomena.

Ectopia Lentis – Treatment Challenges

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Purpose: To present three cases of patients with ectopia lentis that were treated in our hospital.

Method: Case report: We present clinical findings, imaging and intraoperative videos from three cases of patients, diagnosed and treated for ectopia lentis, in our Clinic (two bilateral and one unilateral).

Results - Conclusions: Ectopia lentis is the congenital or acquired (more often post-traumatic) misplacement of the crystalline lens, towards the anterior chamber, the vitreous cavity or the retinal surface. It manifests at any age, with reduced visual acuity, diplopia, loss of adaptation, but it can also be complicated with glaucoma or retinal detachment. In addition to the ophthalmological assessment, it is necessary to assess the patient's medical history (cardiovascular or musculoskeletal disorders) as well as family history, as it may be the first manifestation of congenital or metabolic diseases. For the choice of treatment (conservative or surgical), factors such as severity, complications and the pathological background of the condition - which also affect the prognosis - must be evaluated.

FP39.

Evaluation of visual curve indices in patients after presbyopia correction

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Purpose: The correlation of subjective patient satisfaction with the area of the curve (AOC) index.

Method: Patients who underwent pseudophakic presbyopic correction using the techniques of premium monovision in which an extended depth-of-focus (EDoF) intraocular lens (IOL) was implanted in the dominant eye and a trifocal diffractive was implanted in the non-dominant eye, bilateral implantation of trifocal diffractive IOLs, bilateral implantation of bifocal hybrid (diffractive/refractive) IOLs and bilateral implantation of EDOF IOLs were included in the present study. All patients underwent a binocular evaluation of visual acuity at 9 focal points, which were used to generate vision curves. At the same time, the subjective satisfaction of the patient was evaluated through NEI-VFQ 25.

Results: A total of 50 patients were included in the study. The AOC assessment showed a strong positive correlation with the questionnaire score compared to the corresponding visual acuity correlation. Specifically, the total AOC was evaluated as well as the corresponding one concerning the focal points for near, intermediate and distance vision, which were correlated with the respective sub-scores of the questionnaire. Simultaneously, the visual acuity of the focal points of near, intermediate and distance vision was correlated with the scores of the questionnaire, which showed a weaker positive correlation with the corresponding areas.

Conclusions: The evaluation of the overall visual acuity of patients who underwent pseudophakic presbyopic correction is more reliable using the indices of the visual curves and specifically the AOC.

Samsara telescopic intraocular lens

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Purpose: To present a case of end-stage age-related macular degeneration in which a Samsara telescopic intraocular lens was inserted.

Method: Case Presentation: The case concerns an 84-year-old man who has been followed up in our clinic for 10 years due to age-related macular degeneration. For his condition, he had undergone anti-VEGF intravitreal injections in previous years. Arterial hypertension, diabetes mellitus, and mild dementia are mentioned in the individual history. On ophthalmological examination, the best corrected visual acuity (BCVA) was counting fingers in the right eye and 0.7 (logMar) in the left eye, while the intraocular pressure was normal. During the slit-lamp examination, nuclear sclerosis was found in the right eye, while the patient had already undergone cataract surgery in the left eye 6 months ago. On fundoscopy, a discoid scar was seen in the right eye and geographic atrophy in the left, without evidence of active neovascularization, while the findings were also recorded in an optical coherence tomography (OCT) examination. Due to low vision in both eyes, it was decided to perform phacoemulsification surgery in the right eye and Samsara intraocular lens placement. The operation was uncomplicated, and after 3 months the vision is 0.8, without any postoperative complications and the patient is extremely happy and functional.

Conclusions: In end-stage age-related macular degeneration cases where vision is low and there is no active neovascularization, Samsara intraocular lens placement can improve visual acuity.

FP41.

FP40.

Posterior Ischemic Optic Neuropathy (PION) after uncomplicated cataract surgery as the first clinical manifestation of carotid artery stenosis: A case report

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Purpose: Posterior Ischemic Optic Neuropathy (PION) is a condition characterized by sudden vision loss due to ischemia in the retrobulbar portion of the optic nerve. We present a unique case where NAION after uncomplicated cataract surgery serves as the initial clinical manifestation of carotid artery stenosis (CAS), highlighting the importance of considering vascular etiologies in the evaluation of PION.

Method: Case Presentation- A 69-year-old male presented to the outpatient department for pseudoexfoliation syndrome and nuclear cataract. His best corrected visual acuity was 3/10 in the right eye and 5/10 in the left eye, with no notable medical history. Two months later, the patient underwent cataract surgery for the right eye. After uncomplicated phacoemulsification, the intraocular lens was placed in the sulcus due to an unstable bag. (The remaining viscoelastic material resulted in a significant increase in intraocular pressure postoperatively.) During the patient's follow up, deterioration in visual acuity was observed without any observed ocular pathology. Visual field examination revealed amaurosis of the right eye. Clinical suspicion for PION arose. The patient was referred for a comprehensive laboratory examination and cardiac/carotid ultrasound. Surprisingly, a 90% blockage was identified in the right carotid artery and an 80% blockage in the left carotid artery, confirming the diagnosis of PION and establishing it as the initial clinical manifestation of CAS.

Conclusions: This case underscores the potential association between PION after uncomplicated cataract surgery and CAS, emphasizing the necessity of a comprehensive vascular evaluation in these patients. Early recognition of such cases can guide appropriate interventions to prevent life threatening conditions.

FP42.

Spontaneous closure of a full thickness macular hole after cataract surgery: Case Report

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Purpose: To describe a case of spontaneous closure of an idiopathic, full thickness, stage 2, macular hole after cataract surgery. **Method:** Case report: A 75-year-old Caucasian male presented with a full thickness macular hole in his left eye for surgical evaluation. On his initial visit, visual acuity was Hand Motion (HM) in the right eye and 3/10 in the left eye. His Intraocular Pressure (IOP) was normal 14/15 mmHg. Slit lamp examination revealed 3+ nuclear sclerotic cataract in both eyes. Fundus examination revealed a disciform scar due to wet age-related macular degeneration in his right eye and a full thickness macular hole in his left eye, drusen and small pigment epithelial detachments in the same eye. Upon discussion the plan was the patient to undergo a staged procedure with cataract extraction first due to poor visualization of the fundus and then macular surgery. He underwent an uneventful cataract surgery in his left eye and post operatively was treated with a combination of dexamethasone and levofloxacin eyedrops for 2 weeks. After four weeks, he presented for re- evaluation of his macula. At that visit his uncorrected visual acuity was 6/10 in the left eye and improved to 9/10 with pinhole. Also, the patient described that the central scotoma was smaller. Optical coherence tomography demonstrated a closed macular hole with small subretinal space and extension of the posterior vitreous detachment nasally to the fovea without complete PVD.

Conclusions: The spontaneous closure of an idiopathic full thickness macular hole is an unusual event. In this report, we show that cataract extraction with postoperative treatment with dexamethasone and levofloxacin combination eyedrops can be considered before macular surgery, because it might lead to spontaneous extension of the PVD and closure of the macular hole.

FP43.

Efficacy of a novel laser treatment for the management of dry eye disease after cataract surgery

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Purpose: To evaluate the efficacy of a novel laser treatment for the management of dry eye disease (DED) following cataract surgery. **Method:** A total of 36 eyes from 18 patients who were refractory to conventional treatment for DED after cataract surgery with meibomian gland dysfunction (MGD) were included in our study. Eyelid-margin abnormal vessels of the clinically worse eye were destructed with 532 nm subthreshold laser system via selective thermolysis, whereas the contralateral eye was observed as control. The Ocular Surface Disease Index (OSDI), tear-breakup time (TBUT), Schirmer I, tear meniscus depth and height, eyelid-margin and MG features, and corneal staining were evaluated at 1 day before and 2 weeks, 1 month, and 2 months after treatment. **Results:** The OSDI, TBUT, Schirmer I, tear meniscus depth and height, eyelid-margin vascularity, MG expressivity, and corneal staining of the treated eyes were significantly improved at 2 weeks, 1 month, and 2 months after treatment compared to baseline values (p<0,05), while morphological MG features remained stable. The above-mentioned parameters in the control eyes did not change significantly (p>0,05) compared to the baseline values. No local or systemic side effects were observed at follow-up visits. **Conclusions:** This study is the first to investigate a laser therapy for post-cataract surgery DED. It demonstrates its effectiveness and safety in managing DED after cataract surgery, improving MG function and stabilizing the ocular surface.

FP44.

Implantation of intraocular ring in children with cataracts

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Purpose: To demonstrate the feasibility and safety of intraocular rings implanted in the bag of children after cataract removal. **Method:** Two (2) eyes of two (2) children aged 14 and 11 years with bilateral developmental cataracts as a result of diabetes and radiation (due to brain tumor) underwent cataract extraction with intraocular ring and IOL implantation. The post-op inflammation, intraocular pressure, refraction and best corrected visual acuity were studied.

Results: In the early postoperative period, the inflammation was not excessive and the intraocular pressure was elevated in the eye of the diabetic patient for almost a week and normalized afterwards. The mean follow up period was short (three months on average). The BCVA in the eye of the diabetic patient was 0.0 LogMar and in the eye due to radiation was 0.2 LogMar.

Conclusions: The implantation of intraocular ring in pediatric cataract cases is feasible with a good safety profile in the early postoperative period. Longer follow up time is needed to establish its benefit of providing further IOL stability and reducing the occurrence of posterior capsule opacification.

FP45.

FP46.

FP47.

Intra- and early postoperative complications in phacoemulsification cataract surgery at Hippokrateio General Hospital of Thessaloniki: A retrospective chart review of 11.732 cases

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Purpose: To present the frequency of intraoperative and early postoperative complications related to phacoemulsification cataract extraction, recorded at Hippokrateio General Hospital of Thessaloniki during an 8-year period.

Method: A retrospective chart review of 11.732 cases who underwent phacoemulsification cataract surgery in the past eight years at Hippokrateio General Hospital of Thessaloniki was performed. Details of intraoperative (posterior capsular rupture, vitreous loss, dropped nucleus/lens matter, zonular detachment) and early postoperative complications (IOL dislocation, ocular hypertension, Toxic Anterior Segment Syndrome, endophthalmitis) were recorded.

Results: 11732 phacoemulsification cataract surgeries were performed. 24% of all eyes were considered high-risk due to brunescent / intumescent cataract, pseudoexfoliation, Intraoperative Floppy Iris Syndrome and / or small pupil. Posterior capsular rupture was observed at 446 cases (3,8%), vitreous loss due to posterior capsular rupture or zonular detachment at 363 cases (3,1%) and dropped nucleus / lens matter at 48 cases (0,41%) intraoperatively. Postoperatively, IOL dislocation was observed at 78 cases (0,67%), luxation of IOL into the posterior segment at 35 cases (0,3%) and endophthalmitis at 2 cases (0,017%). Those complications were successfully treated with either anterior or 23G pars plana vitrectomy, followed by sulcus IOL placement, while transscleral or sutureless intrascleral IOL fixation was performed in case of insufficient zonular or capsular support. TASS was noted in 14 cases (0,12%) and short-term ocular hypertension in 93 cases (0,8%), both effectively treated conservatively. **Conclusions:** The rate of intra- and early postoperative complications in our department, agrees with internationally reported data, despite the significant number of high-risk cases.

Cataract surgery in a young patient with glaucoma and prior Radial Keratotomy – A challenging case

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Purpose: The description of the pre-operative approach to a complex case of cataract in a young person with coexisting glaucoma and previous refractive surgery with the method of radial keratotomy.

Method: A 50-year-old patient presented to the Outpatient Clinic of the 1st Ophthalmology department with gradual deterioration of vision over the previous six months. Her ophthalmological history includes refractive surgery with the method of radial keratotomy thirty years ago due to high myopia and astigmatism. During the examination, increased intraocular pressure was found with accompanying glaucomatous anatomical and functional changes, and subsequently she was put on topical anti-glaucoma treatment. After adequate IOP control was confirmed after a number of regular rechecks, she was scheduled for phacoemulsification surgery. Preoperative measurements were performed with IOL Master optical biometry, axial length measurement with A-scan, OCT of anterior segment (Solix) to visualize the angle of the anterior chamber and the iridophakic diaphragm, as well as corneal topography with Pentacam AXL Wave. The insertion of a toric IOL was decided due to significant astigmatism bilaterally, followed by IOL calculation using four different methods: Alcon Online Toric IOL Calculator, ASCRS IOL Calculator, Barrett and Kane Formulas.

Results: The patient underwent phacoemulsification surgery and toric intraocular lens insertion without complications bilaterally and remains under postoperative follow-up. Postoperative intraocular pressure measurements were within normal limits bilaterally.

Conclusions: The increased popularity of refractive surgery in recent years leads to an increased frequency of phacoemulsification on patients who have undergone prior surgery. Any kind of surgical intervention to the cornea with the aim of correcting refractive errors results in irreversible changes in its shape and thickness, elements that should be carefully taken into account in the planning of phacoemulsification surgery and in the calculation of the appropriate intraocular lens for each patient, always regarding the visual needs of their daily life and any coexisting ophthalmological diseases.

Comparison of a new optical biometry device to a reference biometer

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Purpose: Biometric readings were taken for patients undergoing cataract surgery. Axial Length, Anterior Chamber Depth, Keratometry and IOL power to achieve refractive target using Haigis formula were compared between two devices, Optopol REVO FC OCT and IOL master 500.

Method: 37 eyes of 24 consecutive patients scheduled for cataract surgery operated by same surgeon in same clinic were included. Two independent operators measured eyes. Data analysis was performed, calculating 95% Level of agreement and Student t test utilized to assess differences between the two devices.

Results: For Axial Length and Anterior Chamber Depth the differences were not clinically significant. The K readings had a significant difference resulting a difference in between the IOL power calculation. Additionally, AL, Ks, ACD, Lens Thickness, White to White and Central Corneal Thickness measurement revealed repeatability for Optopol Revo FC.

Conclusions: High agreement noticed in between the two devices for AL and ACD. There was a difference in between the K readings resulting in different IOL calculations. Further evaluation is required.

FP48.

FP49.

FP50.

Keratoconus as complex as it gets

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Purpose: To present a challenging case of combined keratoconus and pathologic myopia.

Method: A 51-year-old male presented to our department seeking medical intervention for bilateral high myopia and progressive keratoconus. The patient had a history of penetrating keratoplasty in the right eye three decades ago. Additionally, he reported blepharoplasty and botulinum neurotoxin injection one month ago bilaterally and hyperthyroidism, which was under control with medical treatment. At presentation the patient exhibited a corrected visual acuity of 0.4 (decimal scale) in both eyes, wearing soft contact lenses with a refractive power of minus 30 diopters. Slit lamp examination revealed a clear corneal graft in the right eye, whereas limbus corneal neovascularization and nuclear sclerotic cataract were present bilaterally. The patient underwent a thorough preoperative assessment, including optical biometry and corneal topography. Crystalline lens extraction and intraocular lens implantation were performed in the left eye. Following the initial surgical intervention both visual and refractive outcomes as well as any changes in corneal parameters were assessed.

Results: One month postoperatively, the patient exhibited a corrected visual acuity of 0.5. Subsequent steps in the medical management involve the insertion of a piggy- back intraocular lens.

Conclusions: Tailored medical and surgical management is critical in complex corneal and refractive cases for optimizing visual outcomes.

Epithelial Remodeling And CXL-Line Depth in Keratoconus Following CXL Combined with Excimer Corneal Reshaping with The Athens Protocol

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Purpose: To evaluate epithelial remodeling and CXL-line depth in keratoconic eyes following surface ablation normalization combined with corneal crosslinking (Athens protocol).

Method: Fourier-domain anterior segment optical coherence tomography (AS-OCT) was used to obtain in vivo 3-dimensional corneal and epithelial thickness maps and center, superior, inferior, maximum, minimum, mean, midperipheral, and variability data; as well as cross-section assessment of the average depth and width of the CXL derived intrastromal-line visualized.

Results: 43 treated keratoconic eyes were evaluated over 2 years The mean overall epithelial thickness (ET) in um changed from 54.6 to 52.6, superior vs. inferior change in um: 56.9 and 52.3 to 53.3 and 52. ET change over cone center 45.1 to 53.2. All differences were statistically significant (p<0.01). CXL line mean depth: 265um.

Conclusions: These data confirm our previous findings of overall epithelial thickness normalization following CXL with the Athens Protocol. Increase to normal thickness over the cone center along with documentation of a deep CXL-line may serve as confirmation of the result efficacy along with corneal thickness and curvature stability over time.

Novel pattern reflection topography data analyzed by artificial intelligence (AI): Comparison of keratoconus diagnosis and normal diagnosis: AI accuracy vs. Scheimpflug tomography

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Purpose: To evaluate the accuracy (specificity and sensitivity) of a novel corneal reflection pattern topography device providing data to AI for KCN or normal cornea diagnosis. Setting: Laservision Ambulatory Surgical Center, Athens, Greece. Design: Prospective case series comparing normal and KCN diagnosis by AI.

Method: 700individuals that underwent imaging by the novel portable hand-held reflection pattern topography device (Tilleron Gen 3) that includes software that transfers seamless, and blinded to the examiner, the capture imaging data automatically, from Athens, Greece to the United States, New York, AI center via wifi and processed by proprietary software to determine corneal normality vs. keratoconus. All cases were also imaged by Scheimpflug tomography (ST) imaging and retrospective validation of the AI diagnoses.

Results: 325 KCN cases and 375 non-KCN cases as defined by ST using the Amsler- Krumeichciteria were included. The Scheimplug tomography data rated the KCN cases in staged 1-3. The Tilleron data were 100% accurate in both KCN and normal cases with 100% sensitivity and 100% sensitivity

Conclusions: Artificial intelligence processing of this low cost portable proprietary reflection topography pattern may provide accurate data in KCN diagnosis.

FP51.

Management of progressive keratoconus in the United States with transepithelial 2-step

phototherapeutic keratectomy combined with CXL: The US-modified Athens Protocol designed for approved Excimer specifications

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Purpose: To report a novel application of excimer ablation for normalization of irregular corneas, combined with higher fluence CXL in the effective management and visual rehabilitation of progressive keratoconus.

Method:17 cases with progressive keratoconus were treated with CXL combined: with a corneal surface excimer laser ablation normalization in 2 steps: a topography- guided (Contura) myopic ablation placed over the intact epithelium to account for epithelial removal and cornea surface re-shaping, followed by, a second, wavefront- optimized hyperopic excimer treatment, aimed to complete the designed epithelial removal over a 9mm diameter. The 2 sequential excimer ablations were followed by the CXL part of the Athens protocol combined procedure. Refractive error and Visual function parameters: Acuity, cornea clarity, keratometry, topography, and pachymetry, as well as endothelial cell density were evaluated over 36months.

Results: Keratoconus stabilized in all cases. The severity of keratoconus stage by Amsler-Krumeich criteria improved for the OD from an average 2.2 to 1. Mean UDVA showed marked improvement at one-year follow-up (0.21 ± 0.18 to 0.51 ± 0.25 decimal) with small additional improvement through the 3 years (0.51 ± 0.16 decimal). CDVA respectively increased from 0.55 ± 0.11 (decimal) to 0.79 ± 0.16 (decimal) at 1 year and to 0.79 ± 0.16 (decimal) at 3 years. Mean minimal corneal thickness decreased significantly from 466.74±34.25 µm to 396.17±45.17 µm (P<.01) as recorded the first year postoperatively and then slightly increased to 405.17±32.21 µm at the 3-year follow-up.

Conclusions: We introduce herein initial clinical data with the use of novel off-label therapeutic excimer laser surface ablation application designed to perform both epithelial removal and anterior corneal stroma reshaping combined with CXL in order to employ the Athens Protocol within US excimer laser approved specifications.

FP52. The Effects of Autologous Serum Tears 50% on the Cornea and Ocular Surface of Patients with Severe Dry Eye Disease: A Prospective, Double-blind, Randomized, Controlled, Contralateral Eye Study

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Purpose: To investigate the effects of AS tears 50% treatment on the cornea and ocular surface of patients with refractory immune-mediated Dry Eye Disease (DED) via a real-world double-blinded randomized controlled contralateral eye study, as compared to traditional artificial tears.

Method: Twenty (20) eyes of ten adult patients with severe DED due to Sjogren's syndrome (either primary or secondary to rheumatoid arthritis) were contralaterally randomized into either the intervention (AS tears 50%) or the control group (artificial tears). Study visits were conducted at 1, 2 and 3 months. High-resolution images of the corneal sub-basal nerves were acquired using the Heidelberg Retina Tomograph III (HRTIII, Heidelberg Engineering, Germany). Quantitative analysis of the corneal nerves was performed using the Automated Corneal Confocal Metrics (ACCMetrics, M.A. Dabbah, Imaging Science and Biomedical Engineering, University of Manchester, UK) software. The intervention-related alterations in the status of the central corneal nerve plexus were evaluated after the quantification by frame of distinct parameters, such as Corneal Nerve Fiber Density (CNFD), Corneal Nerve Branch Density (CNBD) and Corneal Nerve Fiber Length (CNFL). The degree of improvement between groups was also assessed via objective assessment tests (corneal and conjunctival staining, tear break up time and Schirmer's test).

Results: The quantitative parameters of the central corneal nerve plexus and objective test outcomes differed between the active and the control group (p<0.05).

Conclusions: The use of AS tears 50% improves confocal microscopy findings and objective indicators of ocular surface dryness compared to the use of artificial tears at 3 months.

A novel approach to Acanthamoeba keratitis treatment

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Purpose: To present an atypical case of Acanthamoeba keratitis (AK) in a contact lens (CL) wearer, initially misdiagnosed as CL corneal toxicity. Furthermore, to present the treatment results of a novel polyhexamethylene biguanide (PHMB) eye-drop formulation used as monotherapy.

Method – **Results:** The patient presented with worsening photophobia, ocular pain and decreased visual acuity in the right eye of one week duration. They had been on a regimen of topical antibiotics, corticosteroids and lubrication with an initial diagnosis of CL- induced corneal toxicity. Slit lamp examination demonstrated conjunctival injection, corneal epithelial microcysts, distributed extensively across the cornea. Fluoresceine staining was positive. The anterior chamber was quiet and intraocular pressure was within normal limits. Cultures were obtained and confocal microscopy was also performed which demonstrated double-walled cysts. A diagnosis of AK was established. As there is currently no AK established treatment, the patient consented to participate in a trial for an investigational high-dose PHMB formulation. The drug has been granted Orphan Dug Designation by the EMA and FDA for AK. Within two weeks of PHMB monotherapy, the patient's symptoms and visual acuity improved, along with gradual resolution of the epithelial microcysts. The patient is currently being followed up weekly and PHMB is gradually being tapered. **Conclusions:** A high degree of suspicion for AK is necessary in CL wearers that present with atypical symptoms and signs and infection should always be excluded though appropriate diagnostic procedures. Monotherapy with novel high-dose PHMB eyedrops has yielded positive results and could be a promising treatment pathway for AK.

FP54.

Safety and efficacy of fine-needle diathermy for corneal neovascularization

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Purpose: Assessment of safety and efficacy of fine needle diathermy (FND) for the management of corneal neovasculature in a series of patients.

Method: A total of 30 eyes from 30 patients were treated with fine needle diathermy for secondary corneal neovascularization. The intervention was followed by a single subconjunctival injection of triamcinolone in the respective quadrant. Patients were followed up over a 12-month period measuring the area occupied by neovascular vessels and best-corrected visual acuity (BCVA). **Results:** The mean age was 58 years (range = 30-90 years), 50% female, and all the patients had unilateral involvement. The causes of corneal neovascularization were herpes simplex virus keratitis, bacterial keratitis, acanthamoeba keratitis, marginal keratitis, chemical injury and post-PK. All cases showed regression at the follow-up period whereas 15% needed repeat procedure after 1 month follow-up. BCVA showed improvement postoperatively with significant difference in cases of herpetic and bacterial aetiology. **Conclusions:** Fine-needle diathermy seems to be a safe and efficient treatment option for the regression of corneal neovascularization and particularly successful in herpetic and bacterial keratitis. The addition of subconjunctival triamcinolone shows potential benefit in the long-term follow up.



Disassembling the Great White: a story of patience and multiple chops to success

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Phacoemulsification in advanced brunescent cataracts can be a challenge not only because of the nucleus itself but due to the consequences of the surgical procedure. In this video we present a case of an advanced cataract operated with the Centurion System by Alcon and managed with patience and consecutive horizontal and vertical chops. It has been proven that primary chop reduces the amount of total energy during the operation thus minimizing tissue and corneal trauma which can lead to postoperative complications in advanced cases. In our experience advances cases can be safely dealt with multiple chops which helps to avoid postoperative complication and especially corneal failure.



Cataract Surgery in Phacomorphic Glaucoma

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Purpose: To present a case of phacomorphic glaucoma treated with cataract surgery following an acute glaucoma attack.

Method: A 68-year-old man was referred to the outpatient ophthalmology clinic from another hospital, after an acute glaucoma attack in his right eye. The IOP had already been medically reduced. The patient presented with blurred vision, conjunctival injection, corneal edema, a mid-dilated, non reactive pupil, narrow anterior chamber, 3600 posterior synechiae OD and advanced nuclear cataract in both eyes. His visual acuity was hand motion OD and 3/10 OS. The IOP was 10 mmHg OD and 8 mmHg OS. Ocular biometry and OCT were used for anterior chamber and fundus evaluation. He was treated with laser iridotomy in both eyes, topical and per os medication as well as cataract surgery OD.

Results: The surgery was successful with the only intraoperative complication being a zonule break at the 3rd clock hour. A prophylactic anterior vitrectomy was performed and the intraocular lens was placed in the bag. He was treated with antiglaucoma medication and presented 5 days later with visual acuity of 4/10 OD and 3/10 OS. The IOP was 12 mmHg OD and 10 mmHg OS. During the physical examination, deepening of the anterior chamber was observed, which was confirmed by anterior segment OCT. The patient was satisfied.

Conclusions: Cataract surgery is a safe and successful approach in the management of phacomorphic glaucoma, leading to improved visual acuity and control of IOP.

Phacoemulsification and capsular tension ring (CTR) implantation in eye with cataract and lens coloboma Mikes Glynatsis, <u>Polyxeni Vasiloglou</u>, Panagiwta Karailidou, Lemonia Palassopoulou, Aikaterini Stefani Hippokration General Hospital of Thessaloniki, Thessaloniki, Greece

Purpose: To present a cataract surgery in a patient with unilateral congenital lens coloboma.

Method: A 60-year-old patient was diagnosed with cataract and lens coloboma extending 2 clock hours in her right eye, without any other associated ocular manifestations. The patient underwent phacoemulsification surgery. After cataract removal, a CTR was inserted. Afterwards a single piece intraocular lens was implanted in the capsular bag.

Results: The postoperative BCVA was 10/10, the IOL was well-centered in the capsular bag which in turn was well- centered behind pupil. Complications related to the CTR and vitreous were not observed.

Conclusions: The CTR can be quite helpful and can be used in cases of isolated lens coloboma safely with good postoperative results.

V04.

V03.

Combined cataract and ab-interno bleb revision surgery. A useful combination

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Purpose: To present the technique of a useful combine cataract glaucoma surgery

Method: Patients who need cataract surgery with previous failed or partially failed trabeculectomies were operated with phacoemulsification and IOL implantation followed by am-interno bleb revision using the Fellman-Grove spatula. Before the revision subconjunctival injection of 0.1µgr mitomycin C in 0.1ml mixed with lignocaine was performed.

Results: Early postoperative low IOP with no IOP spikes were achieved in these glaucoma cases, that could possibly compromise optic nerves with advanced or end stage glaucoma. Long term success of this method has been shown in our cases

Conclusions: Phacoemulsification combined with ab-interno bleb revision using Fellman-Grove spatula is a useful operation with no substantial postoperative complications.

VIDEO PRESENTATIONS



VIDEO PRESENTATIONS



Minimally invasive tube surgery: is it the future?

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Glaucoma drainage device implantation (GDD) or tube surgery has long been considered a major glaucoma operation aiming to control intraocular pressure in complex cases or after failed filtration surgery. Traditionally a normal GDD implantation requires major incision in the conjunctiva to facilitate the implantation of the plate. In this video we present the "Small Taco" technique which allows for the implantation of a 250mm2 tube, the Ahmed clear path 250, through a 4-5mm conjunctival incision. The smaller surgical trauma reduces the postoperative pain and patient discomfort without compromising surgical success. Additionally, this technique can be used in cases of poor access in the superotemporal quadrant and eyes with conjunctival issues.



Ab-externo XEN gel revision

Gerasimos Kopsinis Athens Vision, ATHENS, Greece

The XEN gel stent is an ab-interno MIGS device that reduces the IOP by creating a subconjunctival drainage pathway. As with any new device there is still some lack of experience and knowledge concerning efficacy technique and complications. We report an ab-externo approach for early bleb failure after XEN implantation.

EP01.

EP02.

A severe case of anterior capsular contraction syndrome: Treatment intervention and visual outcome <u>Maria Dettoraki</u>, Charalampos Kazakos, Garyfallia Nizami, George Lavasidis, Anthi Bakouli Department of Ophthalmology, «Elpis» General Hospital of Athens, Athens, Greece

Purpose: To present a severe case of anterior capsular contraction syndrome (ACCS) and visual decline, which developed 4 weeks after uncomplicated cataract surgery and demonstrate the treatment anatomical and visual outcomes.

Method: An 86-year-old woman presented to our clinic complaining of decreased vision in the right eye (RE) started 4 weeks ago. The patient had undergone cataract surgery in the RE 8 weeks ago and in the left eye (LE) 34 weeks ago. Visual acuity was 4/10 (RE) and 8/10 (LE). Intraocular pressure (IOP) was 14mmHg in both eyes. Slit-lamp examination revealed the diagnosis of ACCS in the RE. The capsulorrhexis opening was visibly reduced (0.4mm in diameter), non-circular, malpositioned (more nasally) and accompanied by fibrotic thickening and wrinkling. No prior ocular history was reported. However, posterior synechiae were present in both eyes preoperatively and a Malyugin ring was used during the operation. Nd:YAG laser anterior capsulotomy was performed soon after the ACCS was detected (the laser was set to anterior focus and an energy of 3mJ). In two visits, four radial incisions were made, starting at the margin of the opening.

Results: Visual acuity improved to 7/10 in the RE three days after treatment. The capsulorrhexis diameter was 4mm and the visual axis was clear. IOP was 11mmHg. Three months later re-phimosis had not occurred.

Conclusions: Our case illustrated that YAG anterior capsulotomy was effective and safe in treating an advanced stage of ACCS occluding the visual axis. The patient regained her visual acuity 3 days after treatment and no pseudophakodonesis, IOL decentration and re- phimosis were noted at the 3-month follow-up.

Floaters after Uncomplicated Phacoemulsification

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Purpose: Case presentation and review of pertinent literature.

Method: Case report.

Results: A 54-year-old Caucasian woman presents with floaters after an uncomplicated phacoemulsification. A thorough clinical and paraclinical examination was performed which ruled out active inflammation and a diagnostic and "therapeutic" vitrectomy was performed revealing the presence of β -amyloid in the vitreous. Systematic investigation revealed signs of liver inflammation and targeted genetic testing confirmed the clinical suspicion of hereditary amyloidosis (transthyretin mutation, TTR). During the two-year follow-up, the patient developed ipsilateral ocular hypertension while the disease appeared in the fellow eye requiring a pars-plana vitrectomy. We emphasize herein pertinent clinical and diagnostic pearls regarding the ocular involvement of hereditary amyloidosis.

Conclusions: The ocular involvement of hereditary amyloidosis should be included in the differential diagnosis of floaters after cataract surgery in the absence of signs of inflammation.

Hypermature cataracts during the year of 2023 EP03.

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G.h.t. G. Papanikolaou, Greece

Purpose: To quantitatively and qualitatively describe the hyper-mature cataracts operated on over the past year.

Method: In 2023, 704 eyes with cataract underwent surgery in our clinic. Among these, there were 18 hypermature, 13 white, 3 morgagnian, 7 brown, 2 white-brown and 3 advanced nuclear sclerotic (grade 4) cataracts.

Results: Two eyes were operated with intracapsular cataract extraction (ICCE) and four eyes underwent extracapsular cataract extraction (ECCE) with lens removal. The remaining eyes were operated with the phacoemulsification technique, which was successfully completed despite the high level of difficulty.

Conclusions: Although cataract surgery is now often performed earlier in the disease course, some neglected cases with hypermature cataracts still present, especially in hospital eye clinics. These surgeries carry a high level of difficulty and an increased risk of intraoperative and postoperative complications. At times, they require the use of older surgical techniques (ICCE, ECCE) in addition to phacoemulsification.

EP04. Challenges in phacoemulsification of white cataracts

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Purpose: To present the difficulties of phacoemulsification during white cataract surgery. White cataracts are characterized by dense opacification and present unique challenges during phacoemulsification. Successfully addressing these challenges is crucial for positive outcomes.

Method: Video presentation of a surgical procedure on a patient with a white cataract. Adaptation of surgical techniques is necessary to overcome the particular hurdles posed by white cataracts during phacoemulsification.

Results: To achieve optimal postoperative outcomes, comprehensive preoperative assessment is essential. Additionally, surgeons may need to consider alternative instrumentation and intraoperative adjustments in response to real-time challenges. **Conclusions:** Phacoemulsification, although a standard cataract extraction technique, encounters difficulties in cases of white cataracts due to reduced visualization, poor red reflex and limited depth perception. Consequently, there is an elevated risk of complications such as capsule rupture.

e-POSTERS

Surgical restoration of complicated cataract after intravitreal drug injection

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Purpose: The presentation of a case with a decrease in visual acuity following intravitreal insertion of a dexamethasone implant. **Method:** A 60-year-old patient with diabetic macular edema, who underwent treatment with an intravitreal dexamethasone implant, suddenly presented with a deterioration of visual acuity after administration, and was referred for further treatment to a specialized vitreoretinal clinic. During the patient's evaluation, the presence of the implant anterior to the posterior lens capsule was detected and treated surgically.

Results: After the surgical restoration, the patient's visual acuity returned to its pre- damage state.

Conclusions: Both patient cooperation and the method of drug administration are equally important in preventing such events, which increase the likelihood of complications during surgery.

EP06. Phacoemulsification with high degree of difficulty

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Purpose: To present cataract surgery cases that pose challenges due to special characteristics of the eyes and their potential complications.

Method: We present three surgical cases from the General Hospital Papanikolaou in Thessaloniki, Greece and their treatment modalities: 1) An eye with high myopia 2) An eye with endothelial insufficiency 3) An eye with asteroid hyalosis.

Results: Surgical management techniques are presented to achieve optimal intraoperative and postoperative outcomes and avoid complications. These techniques include appropriate use of ultrasound energy, different phacoemulsification techniques, the role of viscoelastics and trypan blue.

Conclusions: The aforementioned surgeries require experience to avoid possible complications and achieve the desired outcome. The methods outlined here contribute to successful surgical outcomes.

Phacoemulsification with capsular support in a cataract with mild phacodonesis

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Purpose: Phacoemulsification is a widely utilized surgical technique for cataract removal. Cases involving mild phacodonesis (e.g. in pseudoexfoliation) and poor mydriasis present particular challenges for the ophthalmic surgeon. To improve surgical stability and outcome, iris retention hooks are used for capsular support in the Ophthalmology Clinic of G.H.T. G. Papanikolaou. **Method:** After careful capsulorhexis, iris retention hooks are inserted at the 4 o'clock and 8 o'clock positions to provide capsular support. In some cases, additional support hooks may be utilized.

Results: The capsular support ensures stability of the lens capsule during phacoemulsification as well as stable mydriasis, facilitating surgery by reducing risk of complications and duration of procedure.

Conclusions: Capsular support is an immediate need in cases involving unstable zonules and mild phacodonesis.

EP08. E Laise K Mising C Misin

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Purpose: To report the unexpected finding of a membrane resembling a second anterior lens capsule during cataract surgery. **Method:** Presentation of a case of a patient diagnosed with cataract where a second layer of the anterior capsule lens was observed intraoperatively

Results: Double-layer capsulorrhexis performance and uneventful integration of cataract surgery with implantation of the intraocular lense in the capsular bag

Conclusions: The presence of a double-layered anterior lens capsule is an unusual intraoperative finding wich can be dealt with a double-layered continuous curvilinear capsulorrhexis uneventfully

EP09.

The necessity of cataract surgery on patients with acquired macula disorders – Two case reports <u>Mouteveli Athina</u>, Hatjialekou Georgios, Liakopoulos Dimitrios, Anastasiou Evangelos, Kokkinos Michail Ophthalmological Department of General Hospital of Rhodes

Purpose: To describe the necessity of cataract surgery on patients with acquired macula disorders motivated by two different cases of our patients, by the international medical literature.

Method: A' case: Man 76 years old, smoker presented with advanced neovascular AMD, mature nuclear cataract in the same eye and nearly total loss of his central vision. Clinically significant macular edema (829µm) and disruption of architecture of retina layers were observed. He was treated with intravitreal anti VEGF injections and despite the improvement of the edema, scar tissue was developed at the macular area, dropping the central vision at very low levels (1/20).

B'case: Man 70 years old with myopia and diabetes diagnosed with epiretinal membrane , macular pseudohole and posterior subcapsular cataract in his eye (V.A: 3/10 c.c -4.00sph). In both cases, uncomplicated phacoemulsification with low ultrasonic energy was performed and posterior chamber intraocular lens (PCIOL) was inserted.

Results: A' case: Improvement of peripheral vision, objects clarity, color perception. Mild augmentation of the intraretinal liquid was observed initially, subsequently decreased with antiVEGF. Final vision 1/10, ten months later.

B'case: Macula image stable, final vision 8/10 s.c, one year later.

Conclusions: According to the international literature and practice, even in cases with significant macular damage, where the outcome is considered controversial, cataract surgery can ameliorate the quality of patient's life as peripheral vision is their only functional vision. It is important for patients with macula disorders to be offered the chance for even a slight benefit in their vision, provided that pre-operatively they get sufficiently informed about the expected outcome.

EP10. Multifocal IOL explantation: Review of the literature

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MSC «Ocular Surgery», Medical School, AUTH

Purpose: A systematic literature review to identify the reasons that lead to multifocal IOL explanation.

Method: Studies were systematically searched on PubMed, Medline, Google Scholar databases and Cochrane library, from inception to 06 July 2023. Two independent investigators reviewed titles and abstracts of all studies found, applying eligible criteria and a specific search strategy. The reported patient symptoms and clinical findings which resulted in IOL explantation were collected from the selected articles and an incidence analysis was performed following PRISMA guidelines.

Results: In total, 276 eyes of 38 studies were included in the analysis. Most reported patient symptoms were blurred vision(n=162) and dysphotopic phenomena(n=80). Loss of contrast sensitivity(n=21), persistent photophobia(n=6) and other reasons(n=7) were less reported as the primary cause of explantation. Regarding clinical findings in these cases from the surgeon's perspective, in 131 cases no clinical findings were found or reported. Lens opacification(n=78), lens dislocation(n=39), deviation from the expected refraction(n=22) and other clinical findings(n=6) were the most common reasons that led to the explantation.

Conclusions: The research revealed that in the majority of patients no profound explanation was found that could explain the symptoms which eventually led to the explanation. Blurred vision, photic phenomena and reduction of contrast sensitivity accounted for about 95% of the explanation cases. The ability of the patient to neuro-adapt to the multifocal IOL is essential for optimal visual function and patient satisfaction.

EP11. Ocular biometric parameters in patients undergoing cataract surgery and their correlations with clinical and demographic data

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Purpose: To report data from optical biometry in a cohort of Greek patients undergoing cataract surgery and investigate possible correlations with demographic and clinical parameters.

Method: In this cross-sectional study, adult patients that underwent ocular biometry were included. Exclusion criteria included corneal, retinal abnormalities or history of trauma. Biometric data included spherocylindrical error, axial length (AXL), keratometry (Kf,Ks), anterior chamber depth(ACD), lens thickness(LT) and white-to- white distance(WTW). Clinical parameters included the presence of glaucoma, pseudoexfoliation, arterial hypertension, diabetes, thyroid or rheumatic disease and dyslipidaemia.

Results: 314 eyes (53% OD,61% female) were included. 20.4%, 57.6% and 58.3% had diabetes mellitus, arterial hypertension and dyslipidaemia respectively. 10% had some form of thyroid and/or rheumatic disease and 11.8% had glaucoma. Mean age was 73 years (SD=7.9), sphere -0.22D(SD=2.59), cylinder -1.2D(SD=0.86), AXL 23.70mm (SD=1.16), ACD 3.20mm (SD=0.56) and LT 4.34mm (SD=1.15). Spearman's test showed statistically significant strong correlations between AXL and ACD (r= 0.587, p=0.01) and between ACD and LT (r= -0.507, p=0.01). Age was correlated with AXL (r=-0.196 p=0.01), ACD (r=-0.267 p=0.01), LT (r=-0.275 p=0.01) and with WTW distance (r=-0.247 p=0.01). Mann-Whitney U test demonstrated statistically significant differences in AXL and ACD between males and females, in ACD in patients with or without diabetes mellitus and with or without glaucoma, and in LT in patients with or without arterial hypertension.

Conclusions: Our study is ongoing aiming to analyze a big cohort in order to report ocular biometric data in the Greek population and possible correlations between various conditions.

e-POSTERS

EP13.

EP12. Minimally invasive scleral fixation technique for relocation of subluxated single-piece acrylic foldable intraocular lens with four haptics

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Purpose: To present a case report of a minimally invasive scleral fixation technique for relocation of a subluxated single-piece, four-haptic, acrylic, foldable intraocular lens (IOL).

Method: An 82-year-old male was presented with an IOL sublocation in his right eye. His uncorrected (UDVA) and best-corrected distance visual acuity (BCDVA) were counting fingers and 0.6logMAR, respectively. He underwent surgical relocation of the subluxated single-piece, four-haptic, acrylic, foldable IOL with scleral fixation. The IOL was brought into the anterior chamber. A posterior core vitrectomy was performed. The first haptic was temporarily externalized through the 2.75mm-main incision and a loop was created around the haptic using a 10-0 PC-9 polypropylene suture mounted on a curved needle. The same procedure was followed for the antidiametric haptic. Then, a 25G-curved hypodermic needle was introduced through the sclera being used to dock the curved needle and guide it out through this paracentesis. The haptic was tucked under the iris as the suture limbs were drawn through the sclera. The antidiametric haptic was secured similarly. The tension on transcleral sutures was adjusted and each side was knotted with multiple zigzag-throws.

Results: The postoperative UDVA and BCDVA were 0.8 and 0.4logMAR, respectively, at one-month follow-up. Postoperative endothelial cell density had no significant decrease. No hypotony, ocular hypertension, suture exposure, or any other complication was observed. Anterior segment OCT revealed no IOL tilt.

Conclusions: The advantage of this technique is that the same one-piece IOL is retained and secured, while the risks and manipulations associated with explantation and exchange are avoided.

Bilateral infectious corneal perforation due to Neisseria gonorrhoeae

<u>Anastasios Sepetis</u>, Dionysios Triantafyllou, Rania Rawashdeh, Fuad Alhussein, Aris Konstantopoulos Origin: University Hospital Southampton, UK

Purpose: To report a rare occurrence of bilateral corneal perforation due to gonococcal infection.

Method: A case report involving a 46-year-old male patient.

Results: The patient presented with a two-week history of ocular discharge and a one-day history of decline in visual acuity, recorded as hand movements in both eyes. Clinical examination revealed bilateral corneal perforation accompanied by copious mucopurulent discharge. Gram-negative cocci were identified from conjunctival swabs. The patient received intravenous ceftriaxone, topical ofloxacin and cefuroxime. Corneal gluing was performed the next day. He denied unprotected sexual contacts and intravenous drug usage. HIV, syphilis, Hepatitis B and C test were negative. He subsequently underwent tectonic penetrating keratoplasty in both eyes, which resulted in improved vision, achieving 0.38 LogMAR in the right eye and 0.10 unaided in the left.

Conclusions: Bilateral corneal perforation caused by gonococcus is an unusual clinical presentation in modern medicine. However, with prompt and aggressive treatment involving both systemic and topical antibiotics, followed by appropriate surgical intervention, significant visual recovery can be achieved.

EP14. Surgical pterigium removal with free conjuctiva graft

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Purpose: Pterygium is a common ocular surface disorder. Its removal poses a challenge due to its tendency to recur and cause complications. The purpose is to highlight a surgical removal technique using a free autologous graft to cover the sclera.
Method: The pterygium flap was prepared and widely excised from its base. Remnants were cleaned with a hockey knife. Then, an autologous conjunctival graft was harvested from the superior conjunctiva and placed to cover the sclera at the flap resection site, orienting the epithelium towards the limbus. The graft was stabilized with sutures to both the conjunctiva and sclera.
Results: The procedure was performed without complications. The patient demonstrated good postoperative recovery. At the 6-month follow-up, there was no evidence of recurrence or discomfort.

Conclusions: Wide resection of the pterygium flap using a free conjunctival graft is a method with very low recurrence and complication rates. However, the longer surgical duration and technically demanding skill should be considered.

Cosmetic Contact Lens-Related Pseudomonas aeruginosa Keratitis: A Case Report

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Purpose: This case report aims to highlight the individual risk and societal implications of contact lens-related microbial keratitis. **Method:** A 37YO female presented with complaints of pain, excessive tearing, and photophobia in her right eye after cosmeticplano contact lens use. She had purchased the lenses a week before the onset of symptoms and had used them three times, each time for five hours, with lens removal at night. On the third use, she experienced the above symptoms three hours after wearing the lenses and promptly removed them. However, she sought medical attention 24 hours later. The patient denied any underlying medical conditions and had adhered to recommended contact lens hygiene practices. Upon examination, her visual acuity was limited to counting fingers at a distance of four meters. Slit lamp examination revealed significant conjunctival injection (2+), a 4x4 millimeter epithelial defect, subepithelial ring infiltration, and 4+ cells in the anterior chamber. Within eight hours of admission, necrotic stromal infiltration, corneal melting, and edema resulting in corneal thinning were observed.

Results: The corneal ulcer scrape was performed, and the specimen was sent for smear and culture. Gram-negative bacilli were identified in the smear, while the culture remained negative. Pseudomonas aeruginosa is the predominant pathogen responsible for contact lens-induced keratitis and corneal ulcers.

Conclusions: Pseudomonas keratitis displays a rapidly progressive course. Timely diagnosis and appropriate antibiotic treatment are imperative to prevent vision loss and severe visual impairment. Patients using cosmetic contact lenses face a higher risk due to limited education and infrequent follow-up visits.

Surgical management of Salzmann's nodular degeneration using a tan DALK marginal dissector; an «onion peeling» technique

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Purpose: To report a case of Salzmann's nodular degeneration managed surgically by nodule excision in an "onion peeling" manner. **Method:** We report a case of a 59-year-old female with a history of blepharitis and ocular rosacea who presented to the corneal department due to progressive worsening of the vision and foreign body sensation. At the presentation, the patient complained of frequent changes in eyeglasses prescription resulting in significant hyperopia. Slit lamp examination revealed bilateral grey-white to bluish subepithelial nodules in multiple quadrants that extended centrally in the right eye; findings consistent with Salzmann's nodular degeneration. Uncorrected distance visual acuity (UDVA) was counting fingers in both eyes while corrected distance visual acuity (CDVA) was 2/10(+6.00, -6.25/330) in the right eye (OD) and 5/10(+6.25, -2.00/840) in the left eye (OS). Excision of the nodules was performed using a tan DALK marginal dissector to cut the nodules and forceps to peel them off. A minimal hyperopic PRK (+1.00 diopters) was then applied to further smoothen the periphery.

Results: One month after the procedure, UDVA improved to 3/10 and CDVA to 7/10 (-1.00, -0.75x150). Three months later, UDVA and CDVA improved even further to 8/10 and 10/10 (-0.25sph), respectively.

Conclusions: Salzmann's nodular degeneration can be managed by this surgical excision technique, providing fast visual rehabilitation and avoiding the need for corneal transplantation.

EP17. Aliki Liska Alavandra Tantau

Aliki Liaska, Alexandra Tantou

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EP16.

Purpose: Corneal nodular lesions are not uncommon in clinical practice. Diagnosing and managing this condition can be challenging due to its variable causes and is of great importance when it comes for keratometry for intraocular lens calculation in cataract patients.

Method: Two patients presented with cataract and Saltzmann nodular degeneration which was further demonstrated on anterior segment optical coherence tomography. The nodular degeneration prevented keratometry due to irregular astigmatism. Both patients underwent removal of the nodules via manual superficial keratectomy. Six weeks after corneal surgery both patients underwent keratometry.

Results: The corneal nodules resolved with minimal scarring (haze) after the period of treatment. Keratometry and anterior segment optical coherence tomography were performed.

Conclusions: Corneal nodular lesions can prevent accurate keratometry and subsequent biometry in cataract patients and should be addressed preoperatively. Serial anterior segment images and AS-OCT are useful to monitor progression and treatment response.

e-POSTERS

EP18.

Performing a combined traumatic cataract and corneal laceration suturing in an acutely traumatized eye Ioanna Gardeli, Athina Athanasiou, <u>Nikolaos Ktistakis</u>, Emmanouel Mavrikakis

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Purpose: To present the management of an acutely traumatized eye of a 33-year- old male patient.

Method: The patient presented to the emergency department complaining of acute trauma to the OD by means of a metal rod. Vision was hand motion and anterior chamber was shallow. A perforating trauma was found, with large full thickness laceration of the cornea with positive seidel sign at the 11th until the 9th hour temporally. The anterior capsule was also lacerated so lens particles had gone into the anterior chamber. The lens was opacified and a fundus examination was not possible to be performed. B scan did not reveal retinal detachment and CT scan did not reveal intraocular foreign body. The patient was admitted to the operating room where a successful phacoemulsification procedure took place.

Results: The surgery was very challenging as an accepted ocular consistency by means of viscoelastic agents was difficult to be achieved. Capsulorhexis was also a challenge as it was performed in two steps at the upper and lower semicircles of the anterior capsule. During the surgery an intact posterior capsule was revealed. As a result, a one-piece IOL was placed in the bag. The cornea trauma was sutured with 3 nylon 10.0 sutures.

Conclusions: The postoperative period was uneventful, and the patient slowly recovered vision at 8/10.

EP19. Comparing reading performance in toric vs. best-spherical correction of patients with astigmatism: preliminary results

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Purpose: Given the popularity of digital devices, the ability to read is a primary objective of functional vision. In this study, reading speed and oculomotor indices are evaluated in patients with low astigmatism corrected with a spherical or a toric contact lens (CL).

Method: Visual performance of fifteen volunteers (age: 33 ± 7 yrs), with myopic astigmatism (cyl: -1.00 ± -0.40 D) was assessed binocularly at two contrast levels (100%-10%) using daily disposable CLs (Precision1, Alcon Laboratories) with: (a) best- sphere and b) toric correction. Visual acuity (VA) at near was measured with ETDRS charts. Reading performance was evaluated, before and after completing a 15- minute reading task on a tablet, using standard IReST paragraphs (0.3 logMAR print size at 40cm distance). Eye movements were monitored with an infrared eyetracker. Data analysis included computation of reading speed (RS), fixation duration, fixations per word and regressions.

Results: VA at near was found statistically significantly improved with toric vs spherical CLs, with the effect being more pronounced at low contrast conditions (p<0.001). Average RS was 241±69 wpm with toric and 229±56 wpm with spherical CLs-the difference did not reach statistical significance (p=0.25). A significant overall effect of contrast on RS was found (p=0.003). Average RS following 15-minute sustained reading was not statistically significantly improved by 10 wpm. Eye movement parameters did not differ between the conditions tested.

Conclusions: A non-statistically significant improvement in RS was found in patients with astigmatism when corrected with toric compared to best-sphere CLs. Since an improvement of >10 wpm is considered to be clinically relevant, it is expected that results will reach statistically significant levels upon completion of the study (N=25).

Financial Disclosure: The study was supported by an investigator-initiated study grant from Alcon (IIT# 73072439).

EP20. Interesting case with ugh syndrome

Panagiota - Sofia Apostolidou, Sofia Ntisiou, Konstantina Misiou, Frageskos Loizou, Anna Lioura - Sofronidou, Eleni Psimenidou, Flora Mousiou, Sevasti Tsironi

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Purpose: Presentation of an interesting case with uveitis-glaucoma-fibrosis syndrome.

Method: A 79-year-old woman pseudophacic (IOL 3p sulcus OD, IOL in the bag OS) bilaterally, pseudoexfoliation glaucoma under medication and Sjogren's syndrome. She was examined as an outpatient with reported pain in the right eye and blurred vision. From the clinical examination of the right eye, the patient has a 3p sulcus IOL with mild subluxation, anterior chamber cells (5+), hypertony and hyphema. UBM examination revealed iris-IOL contact. The patient was already receiving anti-inflammatory treatment for three months from a private clinic. Topical anti-inflammatory treatment was enhanced, as was glaucoma topical and systemic medication. In collaboration with the rheumatologist, a full systemic and immunological check was done again and the systemic treatment with p.o. cortisone was amplified.

Results: Despite modifications to the local and systemic medical therapy, the uveitis, intraocular pressure, and hyphema failed to improve to a satisfactory degree. The immunological test results provided no additional informative data. In light of the ultrasound findings, a diagnosis of uveitis-glaucoma- hyphema (UGH) syndrome was established. We subsequently performed removal of the intraocular lens along with vitrectomy.A vitreous specimen was obtained for culture and PCR (HSV, CMV, VZV), with no pathogenic microorganism found.

Conclusions: Recurrent chronic uveitis accompanied by hyphema and ocular hypertension in pseudophakic patients should prompt consideration of uveitis- glaucoma-hyphema (UGH) syndrome in the differential diagnosis. UGH syndrome constitutes a rare late postoperative complication that, if unresponsive to conservative medical management, necessitates surgical intervention.

EP21. Toric IOL Implantation in Cataract Patient with Keratoconus and Post-Penetrating Keratoplasty

Astigmatism-A Case Report Tsarouchi Dimitra, Spanos Evangelos, Kalogera Efthymia, Peponis Vasileios

EP22.

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Purpose: To evaluate the outcomes of toric IOL implantation in cataract patient with non- progressive keratoconus and post-penetrating keratoplasty astigmatism.

Method: A 55 year old patient presented to our department with a bilateral cortical cataract and a medical history of keratoconus. She had undergone PK surgery on her left eye 20 years ago. The right eye had a non-progressive keratoconus. Preoperative assessment with Scheimpflug tomography on her right and left eye, demonstrated 4,30D and 10,6D irregular astigmatism, respectively. Toric IOL was calculated using IOL Master 700 measurements, SRK II formula, Scheimpflug's keratometry evaluation and the online toric calculators. The toric lens with the highest available cylindrical power(5,75D) was implanted on both eyes in situ, aligned on the steep axis. Limbal marks were made at 180 degrees before the surgery with the patient in a sitting position focusing at distance.

Results: Postoperatively, on the right eye, BCVA was 3-4/10, spherical equivalent was -0.75D with a refractive astigmatism of -0.50D. On the left eye BCVA was 6-7/10, spherical equivalent was -0.50D with a refractive astigmatism of -6.50D. No IOL misalignment was observed during the 6-month follow-up.

Conclusions: On our case, toric IOL implantation showed great results reducing the postoperative refractive astigmatism despite the high corneal irregular astigmatism and leading to increased spectacle tolerance and a better quality of vision.

Ophthalmic Surgery, A Clinical Manual Of 19th and 20th Century for The Practitioners and Students of Medicine by Robert Brudenell Carter and William Adams Frost

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Purpose: The 19th century was the era when the foundations of modern medical science were laid. The treatise "Ophthalmic Surgery," a handbook of knowledge and experience, was given to medical students by two of the leading ophthalmologists of the time, Robert Brudenell Carter and William Adams Frost. This presentation highlights the pioneering work of these two famous doctors in ophthalmology and cataract surgery. The book was published in 1887 when Carter was 59 years old and one of the most influential figures in English Medicine. His student and friend William Adam Frost was 34 years old, and this manual helped to establish him as an important figure in Ophthalmology.

Setting: The facts took place in Victorian England, and this presentation was designed and completed at the 1st Ophthalmological Clinic of AHEPA Hospital of the Aristotle University of Thessaloniki.

Method: The book consists of 556 pages and includes fifteen chapters and an appendix of reading tests and formulas for treatment. The first four chapters concern the basic study of the eye (anatomy, examination, affection of the eyelids, cornea, and sclera). From the 5th to the 12th chapter, there are detailed descriptions of cases of any medical condition of the eyes. At the end of the manual are three chapters concerning refraction, ocular muscles, and orbit. In the surgical part, 78 operations were recorded, 13 cataracts were removed by extracapsular, 1 by intracapsular technique, 2 were couched, one was a curette evacuation, and 6 discissions. They changed the making of the corneal section with Beer's knife to a Graefe Knife in a series in 1869.

Results: These two distinguished physicians were the successors of the famous William Bowman, Albrecht von Graefe, and Donders, the founders of modern Ophthalmology. Robert Brudenell Carter regularly visited Moorfields, attended the lectures of Bowman, Critchett, Hulke, and Soelberg Wells, and made their acquaintance. He settled in Nottingham and played a leading role in founding the Nottingham and Midland Eye Infirmary in 1859. His long career included the Royal Eye Hospital in Southwark and after Henry Power as the Ophthalmic Surgeon at St. George's Hospital. He continued until 1892, when he was succeeded by his student and friend William Adams Frost, who spent his major professional life at St. George's as a lecturer in ophthalmic surgery. **Conclusions:** Those inspired ophthalmic surgeons Robert Brudenell Carter (1828-1918) and William Adams Frost (1853-1935) promoted and elevated Ophthalmology to one of the most interesting medical specialties through continuous research, practice, and persistence in avoiding complications in their surgeries. An academic teacher and an enthusiastic student made a scientific company until the end of their lives. Their work was significant in educating young doctors, and this handbook certifies their contribution to our science and was still in practice even after the death of Adams Frost in 1935.

e-POSTERS

FERDINAND RITTER von ARLT, A Reformer of Medicine, and his Work 'Clinical Studies on Diseases of the Eye' Georgios N. Balanikas¹, Dimitrios Peirounides¹, Athina Misioni¹, Angeliki Foundouki¹,

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Purpose: Ferdinand Arlt was born on April 18th, 1812 in Obergraupen, in Erz Mountains of northern Bohemia. From the experiences of his hard youth, he had acquired the qualities that served him well in his professional life: "Primum medici est humanitas' became his guiding principle and as the basis for friendships Donders and the genius Albrecht von Graefe. In 1839 he graduated from the University of Prague and became a student in ophthalmology of Johann Nepomuk Fischer (1777-1847), professor of Ophthalmology at the University of Prague. Arlt followed him to Vienna and became his assistant. After his return to Prague Arlt published a series of papers that appeared in the journal "Prager Vierteljahrschrift and referred to staphyloma, pterygium and trachoma and his operative method of trichiasis. Arlt's most important research in Prague was his work on myopia.

Method: Of great prevalence was his Die Pflege was Arlt's three-volume textbook titled: 'Die Krankheiten des Auges (Diseases of the Eye) and according to Becker who wrote "Epoch-making has been the term used to describe the first appearance of this title in 1851. It is one of the most important works of the greatest figure in the history of the Vienna School of Ophthalmology in the 19th century"

Results: The revival of ophthalmology in Austria originated in Prague. Ferdinand Arlt became its protagonist. He introduced into his practice the new histological, physiological and ophthalmoscopic methods of work, and his pupils to study under his friends Albrecht v. Graefe (1828-1870) of Berlin and Frans Cornelis Donders (1818-1889) of Utrecht. The volume of ophthalmological pioneering work from this clinic was impressive. Arlt was an excellent teacher according to the memoirs of his assistants, including Francesco Businelli, Oto Becker, Sattler, Fuchs and Dimmer. He was surrounded by 100 students and the mass of patients (2800 cases annually). Arlt's oral teaching activity was intended above all to provide the practitioner with the necessary knowledge to recognize and treat common e diseases and those requiring assistance. The diseased eye itself provided the direct means whereby Arlt taught the beginner what to observe and how to diagnose. Arlt provided for didactic lectures and special courses for his students including advanced training in ophthalmoscopy and in histology and pathology. He personally taught the surgical techniques of ophthalmology and was considered 'the master in ophthalmic surgical technique of his time'.

Conclusions: Ferdinand Ritter von Arlt (1812-1887) was an emblematic figure of Ophthalmology of 19th century. He started from a humble peasant family in mountainous Bohemia. With a strong will and a passion for learning and education, he reached the pinnacle of 19th-century Ophthalmology, making Vienna the leading reference point of our science. He had ethics, compassion for patients, and love for his students. He was an excellent teacher, pioneer, and innovator, laying the foundations for Ophthalmology of a new era. He was a keen surgeon inventing new techniques.

Rotational stability of two different piggyback toric intraocular lenses for correction of high post-keratoplasty pseudophakic ametropia

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Purpose: To present the case of a pseudophakic patient with previous penetrating keratoplasties (PK) for keratoconus, who underwent implantation of a piggyback toric Sulcoflex lens to correct high post-PK pseudophakic ametropia, that due to persistent rotational instability had to eventually be exchanged with a toric Implantable Collamer Lens (Visian ICL, STAAR Surgical, USA).

Method: To address low uncorrected distance visual acuity (UDVA), a secondary toric Sulcoflex Intraocular lens (653T Rayner IOL, United Kingdom) was chosen due to its general acceptance in secondary procedures. IOL power calculations were performed using the manufacturer's formula. The toric IOL was placed in the ciliary sulcus, but subsequent rotational instability led to the need for repeated re- alignment. Despite two attempts at IOL repositioning, the rotational instability persisted, necessitating the replacement of the Sulcoflex IOL with a toric ICL. The standard Online Calculation & Ordering System (STAAR Surgical) was used to calculate the power and diameter of the ICL.

Results: Following the implantation of the toric ICL, the patient achieved excellent UDVA with no adverse events over a four-year follow-up period.

Conclusions: This case highlights the potential rotational instability associated with toric piggyback IOLs in keratoconic, post-PK pseudophakic eyes and the special considerations on choosing the type of piggyback lens in these eyes. The toric ICL demonstrated superior rotational stability. Literature suggests that ICL may be a good and safe option in post-PK pseudophakic eyes for correcting high residual refractive error.

EP25.

EP24.

Long-term outcome after topical Cyclosporine-A in post LASIK epithelial ingrowthK

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Purpose: To evaluate the efficiency of Cyclosporine-A as a conservative medical treatment for Grade 3 post LASIK epithelial ingrowth. **Method:** A 44-year-old male patient presented with persistent recurrent Grade 3 epithelial ingrowth after LASIK retreatment. The patient had already received unsuccessful Nd-YAG LASER alongside with topical steroid treatment and he was reluctant to an additional surgical intervention. Topical instillation of Cyclosporine-A 0.2% drops was used over a period of two years. Two separate Anterior Segment OCT devices (one Swept Source and one Spectral Domain), Ray tracing Aberrometry, Corneal Topography and Slit Lamp imaging were used at follow up.

Results: Epithelial ingrowth expansion was halted already in the first 3 months. Recession was evident after the first 6 months and continued for the following 2 years. Treatment was discontinued without recurrence with a follow up of an additional 7 years. OCT scans confirm gradual thinning of the fibrotic tissue. The epithelial map was normalized, topographical and tomographical irregularities were reduced and ray tracing aberrations were minimized after 2 years of treatment.

Conclusions: Prolonged topical treatment with Cyclosporine-A may prove efficient in persistent recurrent post LASIK epithelial ingrowth.

Change in Corneal Epithelial Thickness After Photo Refractive Keratectomy (PRK)

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Purpose: The study of change of the epithelium of the cornea in two points after Photo Refractive Keratectomy (PRK): at the peak of the cornea (ETpeak) and in the middle of the cornea (ETcenter). The study of the change of Lower Order Aberrations (LOAs) and Higher Order Aberrations (HOAs), Contrast Sensitivity (CS) and Corrected Distance Visual Acuity (CDVA) and the relationship of these parameters with the change of ETpeak and ETcenter after PRK.

Method: Twenty-seven patients (5 women and 22 men) with an average age of 27 years (age range 23-36) underwent PRK. For two years all 27 patients had stable refraction.

The refractive objective was emmetropia.

Results: After PRK, a statistically significant difference was found between pre-surgery and post-surgery measurements of ETpeak and ETcenter with in relation to LOAs, HOAs, CS and CDVA. As well as between CS and HOA (Z33).

Conclusions: In conclusion, after PRK, the change in ETcenter and ETpeak is associated with the change in CDVA and the changes in LOAs and HOAs. Also, the change in CDVA is related to CS, LOAs and HOAS. Finally, the change in the ETcenter appears to be related to the change in the CS.

EP27. Changes in Corneal Epithelial Thickness in Relation to Vision, Contrast Sensitivity and Ocular Aberrations After Lasik

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Purpose: The assessment of changes in corneal epithelial thickness at the center of the cornea (ET center) and at the apex of the cornea (ET peak) in relation to vision, corneal aberrations (LOAs and HOAs) and contrast sensitivity (C.S) after LASIK.

Method: Twenty-seven patients (27 eyes) with a mean age of 32 years (range 22-50), 9 males and 18 females were included in the study and underwent LASIK. Mean follow up was 12.18 +/- 1.48 (range from 9 to 18 months)

Results: A statistically significant difference was found between preoperative and postoperative measurements of ET center and ET peak as well as Zernike coefficients. No statistically significant difference was found for the variable of CS.

Conclusions: Changes in corneal aberrations after refractive surgery can be attributed to epithelial thickness increase which can be seen in patients that have undergone LASIK.

EP28. Refractive surgery in a public hospital during Covid era

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Ophthalmiatreio Athinon, A' Department

Purpose: To present the results of the preoperative studies of the A' Ophthalmology Clinic's Refractive Department.

Method: Preoperative studies were collected and analyzed during the period 03/2020- 12/2023. Due to urgent sanitary measures, the department was closed or operated with reduced appointments for a long time. During the preoperative study, patients underwent complete refractive examination, pupil diameter measurement, Schirmer's test, pachymetry, slit-lamp examination, tonometry, funduscopy and Pentacam topography.

Results: A total of 223 studies were performed, of which 119 were deemed unsuitable for refractive surgery. The most common reasons for unsuitability of the candidates were: unstable refraction (n=44), reduced corneal thickness (n=19), high refractive error (n=14), topographic findings (n=11), patient refusal after being informed about the procedure (n=13), concomitant ocular diseases (n=9) and other preferable treatment options were recommended to 9 patients. Out of 104 deemed suitable for PRK/ LASIK, 38 eventually proceeded to refractive surgery. 24 PRK and 14 LASIK were performed seamlessly.

Conclusions: Despite the urgent sanitary conditions, the patients' interest in being independent from spectacles has remained undiminished. It was observed that only 17% of the studies eventually proceeded to refractive surgery. This is due to the strict preoperative criteria applied, and the lack of patients' information regarding the risks of the surgery and about alternative treatment options.





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