

**36th INTERNATIONAL
CONGRESS**
of the Hellenic Society of
Intraocular Implant and
Refractive Surgery

ABSTRACTS BOOK



EP01.

ANTERIOR CHAMBER DEPTH ALTERATION AFTER CATARACT SURGERY IN PATIENTS WITH PSEUDOEXFOLIATION SYNDROME

Ioanna Mylona, Ioannis Tsinopoulos

2nd Department of Ophthalmology, Aristotle University of Thessaloniki

Aim: The aim of the study was to evaluate the change in anterior chamber in patients with pseudoexfoliation syndrome after phacoemulsification surgery for cataract.

Methods: A total of 22 eyes of 22 patients (12 males and 10 females; mean age, 71.1 ± 11.5 years). Patients were operated for cataract by the same surgeon with the same method and a lens was fitted without any major postoperative complications. Mean anterior chamber depth (ACD) was measured with the Visante OCT before the operation and one month after the operation.

Results: Mean ACD measurement before the operation was 2.78 ± 0.39 mm which was increased to 4.01 ± 0.41 mm at the one-month follow-up ($p < 0.001$). The increase in ACD before and after the operation was negatively correlated with the preoperative ACD value ($r = 0.5$, $p < 0.05$)

Conclusions: Our results indicated considerable axial instability during the first month after cataract surgery. A better understanding of the underlying factors may allow better prediction of the final effective lens position and more research in this area is warranted.

EP02.

EVALUATION OF THREE FORMULAS FOR LENS POWER CALCULATION IN PATIENTS WITH PSEUDOEXFOLIATION SYNDROME (PEX)

Ioanna Mylona, Ioannis Tsinopoulos

2nd Department of Ophthalmology, Aristotle University of Thessaloniki

Aim: To compare refractive outcomes after cataract surgery in pseudoexfoliation syndrome (PEX) and control eyes and to investigate the accuracy of three intraocular lens (IOL) calculation formulas in patients with this condition.

Methods: A group with 35 eyes of 35 PEX patients were included in the study and assessed before the surgery and two months following surgery. Sample size was determined by power analysis. The refractive prediction error (RPE) was calculated using the standard SRK/T and the newer Hill-RBF and Barrett Universal II formulas. Ocular biometry was performed in all eyes using PCI (Version V.7.7 IOL Master 500).

Results: There were no statistically significant differences in the RPE between the 3 formulas.

Conclusions: Precise prediction of the effective lens position (ELP) is more difficult in eyes with PEX due to zonular dehiscence and capsular weakness. Thus, the accuracy of IOL calculation formulas is limited by their approach to predict the ELP. We assessed whether the new formulas would be of more help with PEX patient's eyes. Unfortunately, this was not the case.

EP03.

POSTOPERATIVE EVALUATION OF DRY EYE SYNDROME FOLLOWING CATARACT SURGERY

Nefeli-Eleni Kounatidou, Ioanna Mylona, Ioannis Tsinopoulos

Department of Ophthalmology, General Hospital of Katerini

Aim: To evaluate the parameters of perioperative dry eye syndrome (DES) after cataract phacoemulsification surgery.

Methods: 86 eyes of 86 patients (52 females and 34 males; mean age, 61.1 ± 14.5 years) were included. Patients underwent cataract surgery by the same surgeon using the same technique and a lens was fitted without any major postoperative complications.

Results: Mean TBUT was 5.28 (standard error SE=2.23) before and 4.98 (SE=2.31) after the operation. Mean Schirmer test score in mm was 9.22 (SE=5.12) before the operation and 9.65 (SE=4.99) after. T-test for paired samples was used to assess the differences between pre- and postoperative values. The TBUT and Schirmer test scores showed no statistically significant changes ($p=0.31$ and $p=0.78$ respectively). A score above 12 points in the OSDI questionnaire was considered as a diagnosis of DES. With this criterion, 28 patients (21 women and 7 men, with a mean age of 51.1 ± 18.2 years) were compared to the rest of the patient sample on the TBUT and Schirmer's test using the student's t-test. Statistically significant differences were found in the two tests ($p < 0.01$ and $p < 0.05$ respectively) with patients having DES scoring lower values.

Conclusions: Dry eye syndrome can be induced or aggravated by cataract surgery. The use of disease specific questionnaires and clinical tests can identify the patients that would benefit from additional treatment.

EP04.

CATARACT SURGERY COMPLICATIONS IN PATIENTS WITH PSEUDOEXFOLIATION SYNDROME (PEX)

Nefeli-Eleni Kounatidou, Ioanna Mylona, Ioannis Tsinopoulos

2nd Department of Ophthalmology, Aristotle University of Thessaloniki

Aim: To evaluate the odds of intraoperative complications during cataract surgery in patients with pseudoexfoliation syndrome (PEX).

Method: A total of 227 eyes with PEX of 185 patients undergoing planned cataract surgery were included in a prognostic study, based on the review of a clinical database of 1792 cataract surgeries.

Results: In thirty out of 227 eyes (13.21%) intraoperative complications occurred (posterior capsule rupture in 26 eyes, nucleus drop in 2 eyes and Zinn's zonule dialysis in 2 eyes). This percentage was compared favorably to the one of the eyes of patients without PEX, who had intraoperative complications (227/1565 eyes, 14.5%). The difference was not statistically significant, chi-square test = 0.268, $p=0.605$.

Conclusions: PEX syndrome is associated with complications during cataract surgery, due to impaired pupillary dilation and Zinn's zonular weakness among others. A thorough preoperative evaluation and surgical experience in complication management play a decisive role in achieving good surgical outcomes.

EP05.

EFFECTIVENESS OF A NOVEL LASER TREATMENT FOR DRY EYE DISEASE DUE TO MEIBOMIAN GLAND DYSFUNCTION

Kappos N.^{1,2}, Koulotsiou K.¹, Kavalarakis E.², Georgalas I.¹, Papakonstantinou D.¹, Droutsas K.¹

1 First Department of Ophthalmology, National and Kapodistrian University of Athens, Athens

2 Department of Ophthalmology, Naval Hospital of Athens, Athens

Purpose: To investigate the efficacy of a novel treatment (sub-threshold laser) for dry eye disease (DED) due to meibomian gland dysfunction (MGD) with eyelid-margin vascularity.

Methods: A total of 24 eyes from 12 patients with refractory to conventional treatment DED due to MGD with eyelid-margin vascularity 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, while 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, expressivity of the MG and corneal staining of the treated eyes were significantly improved 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 on the control eyes did not significantly changed ($p>0,05$) compared to baseline values. No local or systemic side effects were observed at follow-up visits.

Conclusion: This study is the first to investigate a novel (subthreshold laser) therapy for MGD. It demonstrates its effectiveness and safety in eliminating eyelid-margin vascularity, improving MG function and relieving clinical symptoms and signs of DED due to MGD.

EP06.

DR SQUIER LITTELL AND HIS WORK 'A MANUAL OF THE DISEASES OF THE EYE' THE ESTABLISHMENT OF OPHTHALMOLOGY IN THE UNITED STATES

Georgios N. Balanikas¹ MD, PhD, Dimitrios Pirounides¹ MD, PhD, Michael Angelou² MD, PhD, Nikolaos Makris² MD, PhD, Petros Rasoglou³ MD, PhD, Prof. Vasileios Karampatakis⁴ MD, PhD

1 A' Ophthalmologic Clinic, AHEPA Hospital, Aristotle University, Thessaloniki, Greece

2 Private Practice, Athens, Greece

3 Institute Ophthalmica, Thessaloniki, Greece

4 Laboratory of Experimental Ophthalmology, Aristotle University, Thessaloniki, Greece

Purpose: Dr Squier Littell Jr. was one of the pioneers in Ophthalmology in America and his work was based in his long experience from his service in Wills Hospital as well as in his private practice. Dr Littell considered as the father of Ophthalmology in the United States

Settings: The facts took place at the Wills Hospital in the United States and this presentation was conceived and realized mainly in the first Ophthalmologic Clinic of Aristotle University of Thessaloniki

Methods: The first and second edition (1837, 1848 Philadelphia) from the work of S. Littell's (1803-1886) 'Manual of the diseases of the eye' are the main sources for this presentation. His surgical skills, his educational and writing work are also objects of study of the present work. Biographical data are derived from the 1887 "Memoir of Squier Littell M.D." written by his son-in-law, Andrew Douglass Hall, published in 1887 in the Transactions of the College of Physicians of Philadelphia.

Results: Dr Littell was a founding member of Wills Hospital's surgical team 'For the Indigent Blind and Lame' from 1834. Three years later his work 'Manual of the Diseases of the Eye' was published based on his experience at Wills Hospital as well as his private. Littell's work was a milestone in the literature and practice of Ophthalmology in the 19th century, especially in English-speaking countries. The second edition appeared in 1846 and Littell was now recognized as a skilled ophthalmologist who contributed to the development of Ophthalmology with his important articles and articles in scientific journals and other books.

Conclusion: Squier Littell Jr. is widely regarded as the father of Ophthalmology and with his work 'Manual of the diseases of the eye', he marked the American literature and education, based on the rich experience he gained during his long tenure at Wills Hospital. He was also one of the first surgical team at Wills Hospital, which established its reputation as one of the most brilliant Ophthalmological Institutions in the world. A pleasant surprise is the addition to his book of the vocabulary of the medical terms using, along with, among others, their Greek etymological origin and Greek characters.

EP07.

WHEN SHOULD CATARACT SURGEONS SEEK ASSISTANCE FROM EXPERIENCED COLLEAGUES?

MD Eirini Oustoglou¹, PhD Argyrios Tzamalis¹, MD Lamprini Banou¹, MD Chrysanthos D. Christou¹, PhD Ioannis Tsinopoulos¹, MD Maria Samouilidou¹, PhD Asimina Mataftsi¹, PhD Nikolaos Ziakas¹

1B' Οφθαλμολογική Κλινική ΑΠΘ, Νοσοκομείο Παπαγεωργίου 2nd Department of Ophthalmology, Aristotle University of Thessaloniki, Papageorgiou General Hospital, Θεσσαλονίκη, Ελλάδα, Greece

Purpose: To assess which cases should be assigned exclusively to high-volume surgeons and identify when should a cataract surgeon seek assistance from a senior colleague.

Methods: Medical records of 2853 patients with age-related cataract were reviewed. Preoperative risk factors were documented for each case, and they were all divided into surgeons with more (>400 surgeries per year) or less experience (<400 surgeries per year). Trainees were excluded. Complicated cases were defined as posterior capsule rupture, dropped nucleus, zonular dehiscence and anterior capsular tear with or without vitreous loss.

Results: From the 3247 eyes included, the two groups did not have any statistically significant difference in the complication rates. In the stepwise regression analysis, both groups supported advanced age (>85) and mature cataracts with up to fourfold odds ratios (OR). Low volume surgeons had a fivefold OR in the presence of phacodonesis and fourfold in the case of posterior polar cataract. Finally, the low and high-volume groups had their highest complication rates in the cumulative four and five risk factors, respectively.

Conclusion: In the presence of certain risk factors such as advanced age (>85), mature cataract, phacodonesis and posterior polar cataract, the complication rates appear to increase in less experienced surgeons. The meticulous registration of risk factors in the preoperative assessment can prevent complications through assistance or assignment to a more experienced surgeon.

e-POSTERS

EP08.

CATARACT SURGERY RESULTS IN CONSIDERABLE IMPROVEMENT OF DEPRESSIVE SYMPTOMATOLOGY

Kalliopi Papadopoulou, Ioanna Mylona, Ioannis Tsinopoulos

2nd Department of Ophthalmology, Aristotle University of Thessaloniki

Aim: The objective of this study is to ascertain whether the outcome on best-corrected visual acuity (BCVA) following cataract surgery is associated with depressive symptomatology.

Methods: This is an observational prospective study of a cohort of 150 consecutive patients who underwent phacoemulsification surgery and who were evaluated for changes in depressive symptomatology with Beck's Depression Inventory-II (BDI-II).

Results: The difference in BDI-II scores pre- and postoperatively correlated with the difference in BCVA pre- and postoperatively ($p < 0.001$). A paired-samples t test revealed a statistically significant difference in the preoperative and postoperative BDI-II scores ($p < 0.001$). A stepwise regression analysis concluded that the only statistically significant predictor in assessing the difference in total BDI-II score before and after the operation was the respective difference in visual acuity.

Conclusions: The success of phacoemulsification surgery for cataract as evaluated with the change in BCVA is related to the rate of improvement in depressive symptomatology.

EP09.

PRACTICAL APPLICATION OF A STATISTICALLY VERIFIED CATARACT RISK STRATIFICATION SYSTEM TO REDUCE PHACOEMULSIFICATION COMPLICATIONS

Kalliopi Papadopoulou, Ioanna Mylona, Ioannis Tsinopoulos

2nd Department of Ophthalmology, Aristotle University of Thessaloniki

Aim: The aim of the study was to determine whether the use of a statistically validated risk factor classification system for intraoperative complications in phacoemulsification surgery brings benefits to clinical practice.

Methods: This is a retrospective study of a cohort of 200 consecutive patients who underwent phacoemulsification surgery and who were evaluated for risk factors for intraoperative complications.

Results: The system scores predicted a sufficient percentage of intraoperative complications. Complications were iris prolapse 2%, rupture of the posterior capsule 1.5%, detachment of the zonula 1%.

Conclusions: The system of classification of risk factors for intraoperative complications in phacoemulsification surgery satisfactorily predicts the occurrence of complications and can be used prophylactically.

EP10.

IMPACT OF COVID-19 PANDEMIC ON PATIENT ATTENDANCE AND SCHEDULE OF CATARACT SURGERIES IN THE OPHTHALMOLOGY DEPARTMENT OF A TERTIARY HOSPITAL OF ATHENS

Rapti Eleni, Legaki Anthi, Dettoraki Maria

Department of Ophthalmology, «Elpis» General Hospital of Athens, Athens

Purpose: To evaluate the impact of Covid-19 pandemic on patient attendance in the ophthalmological emergency and outpatient departments of «Elpis» General Hospital of Athens and the impact on scheduling of cataract surgeries.

Methods: We searched our hospital files and recorded the number of patients who came to the emergency and outpatient department during the period 23/03/2018 - 23/12/2019 and we compared them with those who came during the period of pandemic 23/03/2020-23/12/2021. Also, we recorded all the cataract surgeries performed during these periods (before and during the pandemic).

Results: The total number of patients examined in the ophthalmological emergency department before the pandemic during 23/03/2018 and 23/12/2019 was 8105, while during the pandemic period from 23/03/2020 until 23/12/2021 the number of patients was 5438, which corresponds to a 33% reduction. During the same periods, the outpatient visits decreased from 2748 to 2104, a decrease of 23%. There was also a decrease from 2156 to 1550 in cataract surgeries, corresponding to a 28% reduction compared to the pre-Covid period.

Conclusions: Our findings indicate that during the pandemic and lockdowns there was a significant reduction in both ophthalmological emergency and outpatient visits in our hospital. In addition, cataract surgeries were significantly reduced, resulting in a markedly increased waiting time of patients for surgery.

EP11.

MANAGEMENT OF POSTERIOR CAPSULAR CATARACT CAUSED BY ANTI-VEGF INJECTION

Makrigiannis G, Plaka A., Antoniou E, Zoiakis D, Petrakis I, Katsifaras I, Kontadakis S.

Ophthalmology Clinic, General Hospital of Chania

Aim: To evaluate the odds of intraoperative complications during cataract surgery in patients with pseudoexfoliation syndrome (PEX).

Method: A total of 227 eyes with PEX of 185 patients undergoing planned cataract surgery were included in a prognostic study, based on the review of a clinical database of 1792 cataract surgeries.

Results: In thirty out of 227 eyes (13.21%) intraoperative complications occurred (posterior capsule rupture in 26 eyes, nucleus drop in 2 eyes and Zinn's zonule dialysis in 2 eyes). This percentage was compared favorably to the one of the eyes of patients without PEX, who had intraoperative complications (227/1565 eyes, 14.5%). The difference was not statistically significant, chi-square test = 0.268, $p=0.605$.

Conclusions: PEX syndrome is associated with complications during cataract surgery, due to impaired pupillary dilation and Zinn's zonular weakness among others. A thorough preoperative evaluation and surgical experience in complication management play a decisive role in achieving good surgical outcomes.

EP12.

LONG TERM OUTCOMES AFTER PHACOEMULSIFICATION WITH INTRAOCULAR IMPLANTATION FOLLOWING PARS PLANA VITRECTOMY

Pirounides D. MD, PhD, Balanikas G. MD, PhD, Ageladarakis P. MD, Mokka A. MD, Malliarou S.
Aristotle University of Thessaloniki, A' Ophthalmology Department.

Purpose: To report the outcomes of cataract surgery in vitrectomised versus non-vitrectomised eyes, in a tertiary referral hospital in Northern Greece, to determine any complications and to compare the results using an Internet-Based EUREQUO Database.

Methods: A retrospective study of 1612 consecutive cataract operations performed over a 5-year period by a single surgeon between 8/2015 and 8/2020. Parameters including patient characteristics, type of surgery and perioperative manoeuvres employed, difficulties and complications, preoperative visual acuity and final visual outcomes, were analysed.

Results: In total, 32 (1.98%) vitrectomised out of 1580 non-vitrectomised eyes were included. Mean age of vitrectomised group was 67 (48% female, 52% male). Postoperative visual acuity was equal or superior to 6/12 in 72.41 % of patients. 90.62 % were subjected to phacoemulsification with posterior chamber IOL implantation while an iris claw IOL was fixed in a retropupillary position in 3.13% and an anterior chamber IOL in 6.25% was implanted. In 3.13 % of cases a mechanical dilation of the iris was required. Complications included dropped nucleus, corneal opacification and post-operative macular oedema in one case.

Conclusions: Previous pars plana vitrectomy was not associated with a higher risk of intraoperative complications while cataract surgery in vitrectomized eyes appears not to be uncommon amongst patients with co-morbidities and is associated with well-established difficulties. Our five-year data is comparable to that of both Greece and Europe.

EP13.

EFFICACY OF SEQUENTIAL ACCELERATED COLLAGEN CROSS LINKING AND INTRACORNEAL RING IMPLANTATION IN CORNEAL ECTASIA USING THE FEMTOSECOND TECHNOLOGY

Medical Student Eleni Antoniou¹, MD MRCPhtth Konstantinos Samaras²
1 UOA, Athens, Greece, 2Athens Laser Sight, Athens, Greece

Purpose: To evaluate visual acuity improvement and symmetrical corneal flattening in patients with keratectasias (keratoconus and pellucid marginal degeneration) implanted with asymmetric progressive thickness intrastromal corneal ring segments (Keraring, Mediphacos, London, UK)

Methods: This single-center, retrospective, observational study compared changes in best corrected visual acuity (BCVA), spherical equivalent (SE) and refractive astigmatism before ICRS implantation and 2,4,6 months after in patients with keratectasias that previously underwent accelerated CXL. The intrastromal tunnel/s were created with a femtosecond laser and the one (or two) rings implanted were of various arcs and thickness.

Results: The study cohort included 8 eyes of 6 patients with a mean age of 32.5 years old. During 6 month follow-up, mean BCVA increased from 0.49 (Decimal) to 0.75 (p-value<0.001), mean SE decreased from -4.82 diopters(D) to -1.07(D) (p-value<0.1) and Refractive Astigmatism decreased from 5.21 D to 1.89D (p-value<0.05).

Conclusions: Keraring ICRS implantation is a safe and efficient method of improving visual acuity by minimizing refractive error and corneal asymmetry.

EP14.

FUNGAL KERATITIS AFTER CATARACT SURGERY

Mouriki K., Kavroulaki D., Gardeli I.

State Ophthalmology Clinic, Cornea Department, General Hospital of Athens G. Gennimatas, Greece

Purpose: The purpose of this paper is the presentation of the clinical course and management of a case complicated with fungal keratitis after cataract surgery.

Setting: This case is about an 88-year-old male with glaucoma and a history of cataract surgery in his right eye 3 weeks ago who presented to the outpatient clinic. The slit-lamp examination revealed conjunctival hyperaemia and a central corneal ulcer with stromal infiltration in his right eye. He was using topical dexamethasone.

Methods: The superficial corneal swab was used for cultures and Polymerase Chain Reaction (PCR). PCR results were found to be positive for fungi. In this case cultures of Fusarium spp were grown.

Results: In this case, according the fungal susceptibility test, for the treatment of fungal keratitis we used tab Voriconazole and coll voriconazole. We achieved good treatment efficacy and the clinical course of the patient was good in follow up.

Conclusions: Prompt diagnosis and treatment of fungal keratitis in a patient after cataract surgery is challenging and essential for a good visual outcome.

Financial Disclosure of all authors: No disclosure.

EP15.

RECURRENT CORNEAL EPITHELIAL DEFECTS: A SIGN OF CORNEAL DYSTROPHY

Mouriki K., Korompilia A., Gardeli I.

Cornea Department, State Ophthalmology Clinic, General Hospital of Athens G. Gennimatas, Greece

Purpose: The purpose of this paper is the presentation of a case with recurrent corneal epithelial defects.

Setting: This case is about a 15-year-old male that was referred to cornea department for recurrent corneal epithelial defects in his left eye. He presented with a persistent epithelial defect and central corneal opacity in the bowman's layer with a honeycomb appearance in his left eye. He has received treatment for herpes simplex before he presented to cornea department. Corneal sensation was reduced.

Methods: Pentacam scan was performed.

Results: The epithelial defect in his left eye closed after 10 days, whereas the central corneal opacification in the bowman's layer remained. In follow up, one month later the patient presented with central corneal opacity in the bowman's layer in both eyes. His father's examination revealed the same corneal dystrophy. Based on the clinical findings and the family history the diagnosis of Reis-Bucklers corneal dystrophy was established.

Conclusions: Reis-Bucklers corneal dystrophy is a rare bilateral corneal dystrophy and is autosomal dominant with strong penetrance. It usually presents within the first decade of life and is diagnosed by clinical history and physical examination of the eye.

Financial Disclosure of all authors: No disclosure.

e-POSTERS

EP16.

HERPETIC KERATITIS AFTER CATARACT SURGERY

Mrs Dimitra Mitsiou¹, Mrs Styliani Stamelou¹, Mrs Konstantina Andrianopoulou¹, Mr Dimitrios Papantoniou¹, Dr Aliki Liaska¹
1 General Hospital of Lamia, Lamia, Greece, LAMIA, Greece

Purpose: herpetic keratitis during the immediate postoperative period may be misdiagnosed as drug induced epitheliopathy. Prompt diagnosis and antiherpetic treatment helps in faster corneal recovery.

Patients-method: case series of eight patients who presented with epithelial defect at the first postoperative visit (5th-6th postoperative day). The defects showed herpetic ulcer characteristics both in biomicroscopy and fluorescein dye. 7/8 patients were commenced on treatment with famciclovir or valaciclovir until full recovery of the epitheliopathy and remained under prophylactic treatment at 1/3 of full dose for the whole postoperative period. One patient was commenced on antiherpetic treatment after 20 days.

Results: In 7/8 patients there was full corneal recovery in 7 days without relapse for the whole postoperative period. The patient with the delayed treatment initiation ended with topical corneal haze at the site of the epitheliopathy.

Conclusions: at the 5th-6th postoperative day herpetic epitheliopathy may appear. Prompt systemic antiherpetic treatment initiation allows for full postoperative treatment and prevents from further corneal complications.

EP17.

FIVE-YEAR FOLLOW-UP OF CORNEAL REFRACTIVE POWER CHANGES AFTER UNEVENTFUL DMEK

Apostolos Lazaridis¹, Bogdan Spiru¹, Elefterios Giallourou¹, Walter Sekundo¹, Frank Michael Schroeder¹,
Anke Messerschmidt-Roth¹, Konstantinos Droutras^{1,2}

1 Department of Ophthalmology, Philipps University of Marburg, Germany

2 First Department of Ophthalmology, National and Kapodistrian University of Athens, Athens, Greece

Purpose: To evaluate changes of total corneal refractive power (TCRP) over a course of 60 months after uneventful Descemet membrane endothelial keratoplasty (DMEK) and investigate possible correlations with changes of corneal thickness spatial profile (CTSP).

Methods: Sixty DMEK cases without intraoperative and postoperative complications were included. The TCRP at 2, 4, 6 and 8mm zones and the CTSP at corneal apex (CCT) and at 2, 4, 6 and 8mm rings were evaluated. The measurements were performed preoperatively and at 3, 6, 12, 24 and 60 months postoperatively.

Results: The TCRP showed in all zones a significant decrease (hyperopic shift) at 3 months ($P<0.001$), followed by a continuous and significant increase (myopic shift) at 60 months ($P<0.001$). A decrease of CTSP was observed up to 6 months, followed by a continuous increase thereafter. A significant positive correlation between the reduction of CCT and the reduction of TCRP at 2, 4, 6 and 8mm zones (preoperative – 3-month values; $P<0.001$; r ranging from 0.553 to 0.590) was found. There was a weak positive correlation between the change of CCT and the increase of TCRP at 2 and 4mm zones following the 3-month examination (60-month – 3-month values; $P\geq 0.351$; r ranging from 0.055 to 0.132).

Conclusion: Our study quantified the amount of the expected hyperopic shift observed shortly after DMEK and showed a significant positive correlation between the reduction of CCT and the reduction of TCRP. The myopic shift observed after the third postoperative month was associated with the continuous increase of TCRP.

EP18.

INTER-SESSION RELIABILITY AND SMALLEST RELIABLE DIFFERENCES FOR INDICES OF PROGRESSION IN KERATOCONUS USING SCHEIMPFLUG TOMOGRAPHY

Anastasios Sepetis, Chris Schulz, Mohamed Oshallah, Ramez Borbara, Aristides Konstantopoulos
Ophthalmology Department, University Hospital Southampton NHS FT, UK

Purpose: To determine real-life inter-session repeatability of several markers of keratoconic progression measured by Scheimpflug tomography and the reliability of two classification systems for staging keratoconus; the Amsler-Krumeich scale and the ABCD scale.

Methods: A retrospective study of all keratoconus patients who had a Pentacam® scan performed between 2014 and 2020 at a single tertiary unit with two separate scans performed > 1 day and ≤ 14 days apart. Patients were excluded from the analysis if they had a clinically explainable reason for potential change between their scans in both eyes. Parameters evaluated included amongst other, Kmax, topography-derived astigmatism (Cyl), corneal thickness at both the apex (CTapex) and thinnest location (CTmin), anterior and posterior Kmean. The standard error of measurement was used to calculate the minimal detectable change (MDC) which a measurement of real change rather than a random measurement of error.

Results: 45 patients were included in this study (Median age 30 years old 68.9% Males). Median time between the scans was 13 days. The MDC was found to be 24.66 microns in CTapex and 28.92 microns in CTmin, 2.68 Dioptries in Cyl, 2.99 Dioptries in Kmax.

Conclusions: Across all parameters, the degree of noise found to be higher than that reported by others. This may be due to differences in study populations. The higher margin of measurement error found likely represents additional noise introduced by day-to-day variation and real-world daily clinical practice. Basing any clinical decisions on the changes in these measurements must be done so within the context of this noise.

EP19.

PTERYGIUM SURGERY: PATIENTS' PREFERENCES REGARDING SURGICAL TECHNIQUES**Mrs Dimitra Mitsiou¹, Mrs Styliani Stamelou¹, Mrs Konstantina Andrianopoulou¹, Mr Dimitrios Papantoniou¹, Dr Aliki Liaska¹**

1 General Hospital of Lamia, Lamia, Greece, LAMIA, Greece

Purpose: Pterygia are fibrovascular degenerations of the conjunctiva that advance across the cornea over time. Treatment for pterygia begins with conservative measures, such as lubricants and sunglasses. Surgery can be performed in cases where the patient desires symptomatic, optical, or cosmetic improvement. There are a variety of techniques employed in surgery for pterygia. Options after excising the pterygia include, primary closure of the conjunctiva, conjunctival autograft, limbal-conjunctival autograft (LCAG), conjunctival rotational graft, conjunctival flaps, and amniotic membrane graft. Currently, the gold standard for pterygia surgery is excision with conjunctival autograft due to its lower (1.9–8%) recurrence rate. The purpose of the study is to investigate the indications and the preferred surgical treatment in a secondary regional hospital. Patients-methods. Retrospective chart review of 48 patients (32 males-16 females, 24-82 years old) who underwent pterygium surgery in General Hospital of Lamia during 2016-2021. Symptoms, type of pterygium and preferred surgical treatment after consultation were recorded.

Results: All cases were either advanced primary or recurrent pterygium with no optical zone involvement (Type II) or advanced primary or recurrent pterygium with optical zone involvement (Type III). Age varied significantly with older patients presenting with Type III pterygium. The main indication for surgery was cosmesis for the younger patients and vision reduction or the need for keratometric measurements for cataract operation for the older ones. Patients' preference was for conjunctival autograft when vision disturbance was the main symptom while patients who needed cataract operation went for either conjunctival autograft or primary closure of the conjunctiva (after pterygium excision). The duration of surgery and patients' comorbidities were significant factors for patients' preference.

Conclusions: the current gold standard treatment for clinically significant pterygium is excision with conjunctival autograft, as this has demonstrated a low recurrence rate that has been reproduced in multiple studies. However, in older patients with comorbidities who need cataract surgery, primary closure of the conjunctiva (after pterygium excision) may be a viable option given the shorter duration of the procedure.

EP20.

WITHDRAW

EP21.

THE USE OF SCLERA GRAFT COMBINED WITH CONJUNCTIVAL FLAP FOR ANTERIOR SEGMENT RECONSTRUCTION FOLLOWING REPEATED TRAUMATIC LOSS OF FULL THICKNESS CORNEAL GRAFT**Agni Mokka, Katerina Giannoukaki, Kostas Boboridis**

1st & 3rd Ophthalmology Department, Aristotle University of Thessaloniki

Purpose: To describe the use of sclera graft and conjunctiva flap for the reconstruction of traumatic loss of corneal graft following penetrating keratoplasty and anatomical reconstruction of the globe.

Methods: Female patient 72 years old presented with traumatic loss of corneal graft following penetrating keratoplasty with loss of anterior chamber and tamponade of the defect with iris. A similar incidence led to the redo of the first PK. Due to limited visual potential and lack of available corneal tissue, we used a sclera graft of 8 mm diameter for replacing the lost corneal graft. We reformed the anterior chamber and covered the surface with a Gunderson conjunctival flap from the upper fornix.

Results: This technique for covering the corneal defect led to a complete anatomical rehabilitation of the globe covered with regular conjunctival epithelium, formed anterior chamber and light perception. There was no infection or other complications 6 months following surgery.

Conclusions: The use of sclera graft with conjunctival cover may replace the lost corneal graft in cases of PK when there is no available corneal tissue or when keratoplasty is no longer indicated. Sclera graft offers stable tectonic reconstruction of the globe with no risk of rejection or other complications.

e-POSTERS

EP22.

ASSESSMENT OF THE REPORTING QUALITY AND VALIDITY OF META-ANALYSES OF RCTS IN NEOVASCULAR AMD USING THE PRISMA STATEMENT

Tounakaki Ourania , Malamas Angelakis , Doxani Chrisoula , Stefanidis Ioannis , Zintzaras Elias

Department of Ophthalmology, Achilopouleio General Hospital, Volos, Greece

Purpose: To evaluate the reporting quality of meta-analyses of RCTs for nAMD treatment (efficacy and safety profile) published from April 2014 to May 2018 using the PRISMA statement.

Methods: From 210 articles searched, 12 meta-analyses(MAs) were analyzed and scored. Scoring was determined based on the 27-item PRISMA checklist. PRISMA ITEMS percentage score was also calculated. Analysis of scoring and characteristics of MAs was conducted(SPSS 23.0). Pearson correlation was calculated for investigation of correlation between PRISMA evaluation and other variables, e.g. journal impact factor. Subgroup multivariate analysis was also conducted.

Results: All 3 Cochrane MAs were assessed with the highest PRISMA score 27/27 (100%). The mean PRISMA score is 23,2/27 (86,1%) for all 12 MAs. Excluding Cochrane MAs, the mean PRISMA score for 9 MAs changes to 22/27 (81,4%). Sixteen PRISMA ITEMS were 100% reported. There is statistically significant evidence of difference between all 12 MAs and 9 non-Cochrane MAs in means of PRISMA ITEMS percentage score ($P=0,003$). There is statistically significant positive strong correlation between PRISMA percentage score in individual meta-analyses and journal impact factor ($P=0,002$). Finally, multivariate analysis revealed significant difference between MAs with high PRISMA score $\geq 24/27$ and MAs with lower PRISMA score $\leq 23/27$ taking account for variables as Number of authors, Number of patients, Number of Studies, Year of Publication and Impact factor of publication journal ($P=0,026$) simultaneously.

Conclusions: The reporting quality of ophthalmological Meta-analyses in exudative AMD treatment and safety profile was generally optimal. Under-reporting of specific items (protocol, search strategy and assessment of risk of bias) indicate the urgency for PRISMA compliance.

EP23.

VISION AND ART, AESTHETIC PERCEPTION AND SYMBOLISM IN THE ART OF COSTAS EPHEMIDIS, LIGHT, FORM AND COLOR

Georgios N. Balanikas¹ Md, Phd, Dimitrios Peirounides¹ Md, Phd, Petros Rasoglou² Md Phd, Prof. Vasileios Karampatakis³ Md, Phd, Prof. Dimitrios Christodoulou⁴, Md, Phd

1 A' Ophthalmologic Clinic, AHEPA Hospital, Aristotle University of Thessaloniki

2 Institute Ophthalmica, Thessaloniki

3 Laboratory of Experimental Ophthalmology, Medical School, Aristotle University of Thessaloniki

4 Laboratory of History of Medicine, Aristotle University of Thessaloniki

Introduction: Symbolism in art is one of the elements of visual perception in the visual function during the observation of artistic creativity. This trend comprises the fundamental elements in our vision of aesthetics and light, color, and form. Costas Ephemidis (b. 1962) is a contemporary artist who expressed these elements and provoked the observer of his works to identify and understand them. We have used his works and explored how our visual function can perceive them.

Subject: A wealthy inspiration in Ephemidis' art and the wide use of all the parameters in the composition of a project or a series of similar thematic unity are always present. The skillful application of the cognitive visual rules produces highly artistic works that interpret and exhaust the dealing issue in each case. Costas Ephemidis in every thematic entity highlights a feature of the human visual perception leading to a challenging imaging.

Results: Costas Ephemidis, a contemporary painter postmodern artist, presents with his works the cognitive path in artistic creation. An observer-viewer of his work, with minimum attention, finds rules of the visual perception in the art and confirms the existence and universality of these parameters. Besides, the artist starting the pictorial representation of the humans, objects, and environment penetrates mentally intangible images trying to translate the image into feelings and mental energy. His various topics have a common component in the human form and existence even in the works that visually is absent, but mostly at trace tangible or conceivable that this leaves from its primordial appearance in the universe.

Conclusion: Costas Ephemidis, with his paintings, shows us how the human brain can conceive the light and objects with another aspect than the usual human reaction. This element is the mental acceptance that makes the difference from our view. Ephemidis's symbolic art proves this different side of the usual human visual perception with the elements that form his reality.

EP24.

CASES OF MILD TO MODERATE KERATOCONUS TREATED WITH FEMTOSECOND LASER ASSISTED IMPLANTATION OF INTRASTROMAL CORNEAL RING SEGMENTS: A 3-YEAR STUDY

E. Spanos, S. Atzamoglou, G. Kontadakis, G. Mpatsos, L. Kontomichos V. Peponis

Ophthalmiatreio Eye Hospital of Athens

Purpose: To evaluate the 3-year results of femtosecond assisted intrastromal corneal ring segment (ICRS) implantation for the treatment of mild to moderate keratoconus.

Methods: Prospective case series including 4 eyes of 4 consecutive patients with keratoconus. Each patient was implanted with ICRSs according to the preoperative topography and refraction. The segments were implanted in intracorneal pocket created with the FS200 femtosecond laser. Planning of the operation was done based on the nomograms provided by the manufacturer. Patients' follow-up involved visual acuity measurement, refraction control, clinical examination, corneal topography (Pentacam and Orbscan) and anterior segment OCT. The operation was performed due to patients' unsatisfying spectacle corrected visual acuity and contact lens intolerance.

Results: Preoperative average steep keratometry was reduced from 53,3D (range 50,7-55,7D) to 48,6D (range 46,9-50D) 3 years postoperatively. Preoperative average topographic astigmatism was 5,35D (range 4,2-7,9D) while postoperative was 2,7D (range 0,7-4,3D). Refraction assessment showed reduction of the refractive astigmatism from 3,5D (range 2,0-5,0D) to 2,5D (range 0,5-3,75D) and improvement of spherical equivalent from -5,0D (range -4,0 to -7,25D) preoperatively to -2,5D (range -1,25 to -3,25D) 3 years postoperatively. Average pre-op spectacle corrected visual acuity was 4/10, when post-op visual acuity assessment on Snellen scale showed average improvement by 2 lines (range from 0 to 5 lines).

Conclusions: The femtosecond assisted ICRS implantation based on the results of our study, improved all patients' visual acuity, topographic and refractive parameters 3 years postoperatively.

EP25.

CREATION OF SMALL INCISION USING CIRCLE SOFTWARE TO MANAGE SUCTION LOSS DURING SMALL-INCISION LENTICULE EXTRACTION (SMILE)

Dimitrios A. Liakopoulos¹, Michael A. Grentzelos^{1,2,3}, Vardhaman P. Kankariya³, Ankita B. Dube³, George D. Kymionis⁴, Ioannis G. Pallikaris¹

1 Vardinoyiannion Eye Institute of Crete (VEIC), School of Medicine, University of Crete, Greece

2 Epsom and St Helier University Hospitals NHS Trust, Surrey, UK

3 Asian Eye Hospital and Laser Institute, Pune, Maharashtra, India

4 Department of Ophthalmology, Medical School, University of Athens, Athens, Greece

Purpose: To present a case of suction loss during small incision lenticule extraction (SMILE) successfully managed by small incision creation using Circle software.

Methods: A 26-year-old female presented for refractive error correction. SMILE was planned for both eyes. Towards the end of cap interface cut in her right eye, unstable suction resulting in intrusion of conjunctival tissue under the contact interface was noted. Although femtosecond laser application was completed, it was ineffective in creating the small incision. Circle software was used to create a 50° wide small incision (310° wide hinge) avoiding cap conversion to a flap.

Results: Lenticule extraction was performed through the new small incision and the procedure was completed uneventfully. Uncorrected distance visual acuity was 20/20 on first post-operative day.

Conclusions: Circle software can be successfully used after suction loss in SMILE for the creation of the small incision without cap-to-flap conversion allowing completion of the flapless SMILE procedure.

EP26.

SMALL INCISION LENTICULE EXTRACTION (SMILE) RETREATMENT TO A PATIENT WITH HIGH RESIDUAL REFRACTIVE ERROR AFTER PHOTOREFRACTIVE KERATECTOMY (PRK)

Michael A. Grentzelos^{1,2,3}, Dimitrios Liakopoulos¹, Vardhaman P. Kankariya³, Ankita B. Dube³, George D. Kymionis⁴, Ioannis G. Pallikaris¹

1 Vardinoyiannion Eye Institute of Crete (VEIC), School of Medicine, University of Crete

2 Epsom and St Helier University Hospitals NHS Trust, Surrey, UK

3 Asian Eye Hospital and Laser Institute, Pune, Maharashtra, India

4 Department of Ophthalmology, Medical School, University of Athens, Athens, Greece

Purpose: To present a case of a small incision lenticule extraction (SMILE) retreatment to a patient with high residual refractive error after photorefractive keratectomy (PRK).

Methods: Case report.

Results: A thirty-six-year-old male underwent uneventful SMILE for the correction of his residual refractive error twelve years after PRK. Preoperatively, uncorrected distance visual acuity (UDVA) was counting fingers in both eyes. Corrected distance visual acuity (CDVA) was 20/20 at the right (-4.75 -2.50 x 180) and 20/30 at the left (-7.50 -1.00 x 160) eye due to amblyopia. Slit-lamp examination revealed mild corneal haze in both eyes. One month after SMILE, UDVA was 20/20 at the right and 20/30 at the left eye; post-PRK corneal haze had reduced. During the 4-year follow-up, UDVA remained stable and there were no complications.

Conclusions: SMILE could be a good alternative approach for retreatment to a post-PRK patient.

EP27.

HYPEROPIC SMILE WITH THE VISUMAX FEMTOSECOND LASER – 12-MONTH VISUAL AND REFRACTIVE OUTCOMES

Dr. med. Apostolos Lazaridis¹, Dr. rer. med. (M. Sc.) Anke Messerschmidt-Roth¹, Professor Walter Sekundo¹

1 Department of Ophthalmology, Philipps University of Marburg, Germany

Purpose: To evaluate the visual and refractive outcomes and assess the effectiveness and safety of the Small Incision Lenticule Extraction (SMILE) technique for correction of simple hyperopia and hyperopia with astigmatism.

Method: Ninety-one eyes of 48 patients, who were enrolled in the clinical trial, underwent SMILE for simple hyperopia or hyperopia with astigmatism. Inclusion criteria were a preoperative corrected distance visual acuity (CDVA) of 20/25 or better in each treated eye and a predicted postoperative keratometry less than 51 Diopters (D). The target refraction was plano in 25 eyes. A primary overcorrection was set in 66 eyes. The uncorrected distance visual acuity (UDVA), CDVA and manifest refraction were recorded preoperatively and at 1, 3, 6, 9 and 12 months.

Results: At 12 months 78% of the cases showed no change in Snellen lines of CDVA, 13% gained 1 line and 9% lost 1 line. The 12-month UDVA was 20/20 or better in 76% of the cases with plano target. The 12-month refractive astigmatism was less than 0.50 D in 68% of the cases and less than 1.0 D in 91% of the treated eyes. Between 9 and 12 months 8% of the cases showed a regression higher than 0.50 D. An undercorrection trend was noted in cases with a correction of spherical equivalent higher than 3.0 D.

Conclusions: The hyperopic SMILE is a safe procedure that results in very good visual outcomes and a very good refractive stability. Further nomogram adjustments would improve the predictability in high hyperopic corrections.

EP28.

THE DIAGNOSTIC VALUE OF CONTRAST SENSITIVITY TEST IN OCULAR DISEASES CAUSING LOW VISION

Stavroula Almpanidou¹, Diamantis Almaliotis¹, Eleni P. Papadopoulou¹, Vasileios Karampatakis¹

1 Laboratory of Experimental Ophthalmology, School of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece

Purpose: Contrast sensitivity (CS) is considered as a significant parameter of visual function and its clinical evaluation can provide useful information regarding the visual function of a patient that may not be revealed by visual acuity. The aim of the study was to investigate the diagnostic value of CS in ocular diseases that could lead to low vision.

Methods: A comprehensive literature review was conducted with appropriate keywords using PubMed, GoogleScholar and Cochrane Library between January 2015 and January 2022.

Results: In patients with maculopathies, CS function may significantly be reduced especially at low and intermediate spatial frequencies despite good visual acuity. Recently, it was announced that in patients with mild non proliferative diabetic retinopathy, letter CS sensitivity was associated with the outer-retinal thickness while it is well known that spatial contrast sensitivity decline also occurs in different types and stages of glaucoma. Furthermore, in patients with normal tension glaucoma, retinal blood flow alterations were significantly associated with contrast sensitivity loss and hypoxia related changes in CS function have also been suggested. It is important that hypoxia is involved in the pathophysiology of many retinal diseases. Results from our ongoing research concerning the application of a new digital contrast sensitivity examination within the frame of our research project, reflect similar findings in various diseases.

Conclusions: These findings highlight the importance of CS evaluation as a promising visual function endpoint in a wide range of ocular diseases that may have a serious impact on visual function.

EP29.

THE EFFECT OF MESENCHYMAL STEM CELLS IN THE INFLAMMATORY PROCESS IN AGE RELATED MACULAR DEGENERATION

Stavroula Almpanidou^{1,4}, Eleni Gounari², Dimitra Moschou¹, Fotios Topouzis³, George Koliakos², Eleni Papakonstantinou⁴, Vasileios Karampatakis¹

1 Laboratory of Experimental Ophthalmology, School of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece

2 Department of Biological Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece

3 1st Department of Ophthalmology, University Hospital AHEPA, Aristotle University of Thessaloniki, Thessaloniki, Greece

4 1st Laboratory of Pharmacology, School of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece

Purpose: Chronic inflammation constitutes a major mechanism in the pathogenesis and progression of the Age-related Macular Degeneration (AMD) characterized by the local upregulation of pro-inflammatory mediators, inducing breakdown of the blood– retinal barrier and subsequent immune cell infiltration such as macrophages which form an inflammatory retinal microenvironment. The aim of this study is to highlight the beneficial effect of the mesenchymal stem cells (MCSs) in the inflammatory environment of the retina in patients with AMD.

Methods: A comprehensive literature review was conducted with appropriate keywords using PubMed, GoogleScholar, between January 2015 and January 2022.

Results: MCSs, when exposed to an inflammatory environment, exhibit significant immunomodulatory capabilities through the release of cytokines, chemokines, and various metabolites, such as the indoleamine 2,3-dioxygenase (IDO), interleukin-6 (IL-6) and the transforming growth factor (TGF)-b1, with IDO being the main immunosuppression mediator in human MSCs. Furthermore, MCSs can suppress the proliferation of T- and B- cells and natural killer cells and have been found to inhibit the differentiation and maturation of dendritic cells. MCSs also promote the generation of regulatory T cells. Intravitreal injection of bone marrow MSCs seems to reduce the expression of pro-inflammatory factors such as interleukin-1a (IL-1a), IL-6, inducible nitric oxide synthase (iNOS), tumor necrosis factor-a (TNF-a), and vascular endothelial growth factor (VEGF), reducing also the macrophage infiltration.

Conclusions: The aforementioned findings support the beneficial effect of MSCs regarding the regulation of the inflammatory process, which plays a key role in the pathogenesis of AMD.

EP30.

THE READING SPEED IN VARIOUS OCULAR DISEASES

Diamantis Almaliotis, Stavroula Almpanidou, Eleni P. Papadopoulou, Vasileios Karampatakis

Laboratory of Experimental Ophthalmology, School of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece

Purpose: Chronic inflammation constitutes a major mechanism in the pathogenesis and progression of the Age-related Macular Degeneration (AMD) characterized by the local upregulation of pro-inflammatory mediators, inducing breakdown of the blood– retinal barrier and subsequent immune cell infiltration such as macrophages which form an inflammatory retinal microenvironment. The aim of this study is to highlight the beneficial effect of the mesenchymal stem cells (MCSs) in the inflammatory environment of the retina in patients with AMD.

Methods: A comprehensive literature review was conducted with appropriate keywords using PubMed, GoogleScholar, between January 2015 and January 2022.

Results: MCSs, when exposed to an inflammatory environment, exhibit significant immunomodulatory capabilities through the release of cytokines, chemokines, and various metabolites, such as the indoleamine 2,3-dioxygenase (IDO), interleukin-6 (IL-6) and the transforming growth factor (TGF)-b1, with IDO being the main immunosuppression mediator in human MSCs. Furthermore, MCSs can suppress the proliferation of T- and B- cells and natural killer cells and have been found to inhibit the differentiation and maturation of dendritic cells. MCSs also promote the generation of regulatory T cells. Intravitreal injection of bone marrow MSCs seems to reduce the expression of pro-inflammatory factors such as interleukin-1a (IL-1a), IL-6, inducible nitric oxide synthase (iNOS), tumor necrosis factor-a (TNF-a), and vascular endothelial growth factor (VEGF), reducing also the macrophage infiltration.

Conclusions: The aforementioned findings support the beneficial effect of MSCs regarding the regulation of the inflammatory process, which plays a key role in the pathogenesis of AMD.

FP01.

OUTCOMES OF COMBINED PENETRATING KERATOPLASTY AND LIMBAL STEM CELL TRANSPLANTATION: SIMULTANEOUS VERSUS SEQUENTIAL SURGERY

Ioannis Giachos MD¹, Konstantinos Angelidis MD¹, Spyridon Doumazos MD¹, Sotiria Palioura MD PhD^{2,3}

1 First Department of Ophthalmology, School of Medicine, National and Kapodistrian University of Athens, 11527, Athens, Greece

2 Athens Eye Care, Athens, Greece

3 Department of Ophthalmology, University of Cyprus Medical School, Nicosia, Cyprus

Purpose: To review and compare the published studies on the outcomes of limbal stem cell transplantation (LSCT) combined with penetrating keratoplasty (PK) performed either simultaneously in the same setting or sequentially in different settings.

Methods: A systematic review and meta-analysis of prospective and retrospective trials and case series reporting on the outcomes of LSCT with PK was conducted in accordance with the Cochrane Library recommendations and the PRISMA guidelines. Primary outcomes were the stability of the ocular surface and the rejection and/or failure of the corneal graft.

Results: A total of 194 eyes from 15 studies were included in the Simultaneous group and 481 eyes from 34 studies in the Sequential group. The stable ocular surface rate was 88% for sequential cases and 66% for simultaneous cases. The graft failure rate was 15% for sequential cases and 44% for simultaneous cases. Subgroup analysis in sequential cases revealed a stable ocular surface in 94% of cases done with an autograft and 67% of those done with an allograft. The graft failure rate was 9% for autografts and 36% for allografts.

Conclusion: Sequential LSCT followed by PK demonstrated superior results in terms of ocular surface stability and graft retention compared to simultaneous LSCT and PK. Moreover, limbal stem cells of autologous origin fare better than allogeneic ones in sequential cases. We, thus, recommend that LSCT and PK are performed sequentially and with autologous limbal stem cells where possible.

FP02.

CENTRAL CORNEAL REMODELING (CCR) WITH THE IVIS LASER SUITE, COMBINED WITH CROSS LINKING (CXL) IN KERATOCONIC EYES

Charalambos Koulas¹, Marianthi Hirides¹, Evangelos Pateras², Constantinos Karabatsas^{1,2}

1 Attico Ophthalmologiko Eye Center

2 Department of Biomedical Sciences, UNIWA

Purpose: To analyze the surgical outcomes and safety of the Central Corneal Remodeling (CCR) combined with cross linking (CXL) in patients with Keratoconus.

Methods: Thirteen (13) keratoconic eyes underwent the customized CCR+CXL procedure. The central corneal ablation (trans-PRK) with a 1000 Hz excimer laser was executed based on preoperative pachymetry and Ray Tracing measurements with the patented Precisio system, and ideal pupil measurements with the pMetrics pupilometry.

Results: All measured parameters showed significant improvements (mean preop vs postop measurements) after the CCR+CXL procedure. Uncorrected VA (0.27 vs 1,03), BCVA (0.87 vs 1,05), High Order Corneal Aberrations (HOCMA) 29,9 vs 12,02. The Anterior Corneal Astigmatism is reduced (-2,48 vs. -1,68), as well as the Anterior irregularity Index (24,62 vs 15). The technique, due to the smooth tissue removal with a 1000 Hz excimer laser, significantly accelerates the cornea healing (average 3 days), with tolerable levels of pain.

Conclusions: The CCR+CXL protocol of the iVis platform is an excellent choice for the correction of corneal abnormalities and aberrations in Keratoconic eyes, not dependent on the operator. The iVis platform, using Ray Tracing technology, provides optimal security, excellent correction accuracy and tissue saving capabilities through the individualized ideal pupil software.

Financial Disclosure: None

FP03.

HSV ACTIVATION ON PKP GRAFT FOLLOWING ANTI-COVID-19 VACCINATION WITH JOHNSON & JOHNSON VACCINE. CASE REPORT

Dr Dimitrios Miltsakakis¹

1 'OMMA' Ophthalmology Institute, Athens, Ελλάδα

Purpose: To report a case of HSV activation with corneal melting in a patient with a PKP graft, following anti-Covid-19 vaccination with Johnson & Johnson vaccine.

Method: A male patient of 82 years old, who had undergone the first PKP for HSV scar 20 years ago and the second PKP graft in the same eye, 15 years ago, was vaccinated with a Johnson & Johnson vaccine in September 2021. About a week later, he reported a foreign body sensation and a red eye. His vision was gradually reduced. He was examined by the writer 28 days later and a geographic ulcer with stromal melting was found. Eye drops of Lottemax, that he was using 2 times daily, were discontinued and he was placed under treatment with tab Valacyclovir 500 mgr 1X3, gel ophth Gancyclovir 0.15 % 1X5, eye drops Ofloxacin 1X4 and artificial tears without preservatives.

Results: Three days later initial epithelialization was noticed and a therapeutic soft contact lens was applied. The ninth day from his examination, tab Methylprednisolone 16 mgr 1X1 and tab Doxycycline 100 mgr 1X1 were added. Therapy was modified during the follow up period, melting was stopped and epithelialization was completed in six weeks.

Conclusion: We must be aware of HSV reactivation following vaccination against Covid-19 with the Johnson & Johnson vaccine.

FREE PAPERS

FP04.

MANAGEMENT OF ADVANCED CORNEAL IRREGULARITIES WITH CONTACT LENSES

Dr Sotiris Plainis^{1,2}, Miss Sofia Anastasiadou², Prof George Kymionis³

1 University Of Crete, School of Medicine, Lab Optics & Vision (Iov), Heraklion, Greece

2 contact-lenses.gr, Heraklion, Greece

3 School of Medicine, National and Kapodistrian University of Athens, Athens, Greece

Purpose: Remarkable progress has been made in the last two decades in the materials and manufacturing of large diameter rigid gas-permeable (RGP) contact lenses for therapeutic indications. This work provides an update with clinical cases on the use of corneal and scleral RGP lenses in the management of patients with advanced corneal irregularities.

Findings: Advanced corneal irregularities describe cases with high levels of corneal aberrations (eg., astigmatism, coma, spherical aberration), other than keratoconus, usually encountered in patients undergoing penetrating keratoplasty or intra-stromal corneal ring treatment, or showing complications following refractive surgery (i.e. radial keratotomy or LASIK). Advanced corneal irregularities may also be associated with corneal scarring at the point of contact of the lens and cornea, which highlights the importance of contact lens fitting. Clinicians who encounter patients with irregular corneas should be aware of recent advances in corneal and scleral RGP lenses. Such lenses seem to improve significantly patients' visual performance, forming an alternative to surgical intervention.

FP05.

SCHEIMPFLUG CORNEAL DENSITOMETRY OF CORNEAS AFTER DMEK COMPARED TO HEALTHY CORNEAS: 5 YEARS FOLLOW UP

Nikolaos Kappos¹, Apostolos Lazaridis², Vasiliki Katsiampoula¹, Konstantina Koulotsiou¹, Ioannis Giachos¹, Walter Sekundo², Konstantinos Droutsas^{1,2}

1 First Department of Ophthalmology, National and Kapodistrian University of Athens, Athens, Greece

2 Department of Ophthalmology, Philipps University of Marburg, Germany

Purpose: To compare corneal densitometry (CD) following uneventful Descemet membrane endothelial keratoplasty (DMEK) with healthy corneas throughout 5 years follow up.

Methods: Medical records of 212 consecutive surgeries were reviewed. Sixty cases without intraoperative and postoperative complications were included (group 1). Scheimpflug CD of the 0- to 2-mm zone, 2- to 6-mm and 6- to 10-mm annulus were evaluated preoperatively and at 3, 6, 12, 24, and 60 months postoperatively. All results were compared with an age matched group of uncomplicated pseudophakic eyes (group 2; n = 20) and a group of healthy, young subjects (group 3; n = 30).

Results: Total CD at 0 to 2 mm was 33 ± 10 grayscale units (GSU) preoperatively and decreased to 21.8 ± 3.1 GSU at 60 months ($p < 0.001$), being significantly higher compared with both control groups ($p \leq 0.043$). Respectively, total CD at 2 to 6 mm was 27.8 ± 8 GSU preoperatively and decreased to 22.2 ± 4.2 GSU at 60 months ($p < 0.001$), showing statistically significant difference compared with both groups ($p \leq 0.016$). On the contrary, total CD at 6 to 10 mm was 30 ± 8.3 GSU preoperatively and increased to 34.6 ± 7.8 GSU at 60 months ($p < 0.001$), showing no statistically significant difference compared with group 1 ($p \geq 0.093$).

Conclusions: Sixty months after uneventful DMEK, total CD was significantly higher than uncomplicated pseudophakic eyes and healthy, young subjects at the 0- to 2-mm zone and 2- to 6-mm annulus. On the contrary, no significant difference was noted with pseudophakics at the 6- to 10-mm annulus.

FP06.

IDEO-BASED EYE BLINK IDENTIFICATION AND CLASSIFICATION SYSTEM: DEVELOPMENT AND VALIDATION

Eirini-Kanella Panagiotopoulou¹, Panagiota Ntonti¹, Minas Mpakirtzis¹, Konstantinos Delibasis², Doukas Dardabounis¹, Georgios Labiris¹

1 Department of Ophthalmology, University Hospital of Alexandroupolis, Alexandroupolis

2 Department of Computer Science and Biomedical Informatics, University of Thessaly, Lamia

Purpose: To design, develop and validate a system that automatically detects and classifies blinks as "complete" or "incomplete" in high resolution image sequences.

Method: A short video was shown to 15 participants (with or without spectacles), while their faces were recorded with an infrared camera. The iris and eyelids were segmented in both eyes from the acquired videos, using two deep learning encoder-decoders DeepLabv3+ (DLEDs). DLEDs were trained with manually segmented images acquired from a 4-minute video. The segmented images were further processed for the calculation of palpebral fissure height and iris diameter of each eye for the blink detection and classification. For the validation of the system, blink classification, as well as starting and ending time calculated automatically by the system were compared to the same parameters measured manually by three independent experts. Expert conflicts were resolved by a senior expert.

Results: The proposed system achieved a blink classification accuracy of 95.3% and 80.9% for complete and incomplete blinks, respectively, collectively for all 15 participants, outperforming all 3 experts. Finally, the system was proven robust in handling unexpected movements of the face, face obstruction by facemasks, actions like putting on and off reading glasses, as well as glare and reflections from the glasses.

Conclusions: The proposed system achieved high accuracy both in blink detection and blink classification into complete and incomplete blinks, for 15 participants, with and without spectacles. System accuracy was comparable to or better than the experts.

FP07.

BILATERAL AGGRESSIVE MOOREN`S ULCER IN EXTRAPULMONARY TB**Dagalaki I.¹, Siriga M.¹, Kampolis C.², Ioannou Z.¹, Theodorou M.¹, Kousianas C.³**

1 Hippokration General Hospital, Athens

2 Ophthalmology Clinic

3 Pneumonologist

4 Reumatologist, B IM UniversityClinic

Purpose: A case report of bilateral aggressive Mooren's ulcer with QuantiFERON +ve**Methods:** A 41y old Nigerian female nondiabetic patient, arrived to ophthalmology OPD, complaining of eye pain and photosensitivity in the past 2 months. 18 m ago underwent hysterectomy due to endometriosis and 6m thereafter frozen pelvis hemicolectomy. Post-surgically pleural effusion and intra-abdominal collection dealt with conservative treatment BCVA found 10/10cc. SL examination reveals deep binasal corneal ulcer along with inflamed conjunctiva. Extensive work up showed negative Hepatitis, tumor markers, parasitology titters, and positive QuantiFERON.**Results:** The patient underwent urgent surgical intervention with excision of the inflamed conjunctiva and autologous transplant to cover the ulcer. Immunohistochemical assay showed infiltration of plasma cells with k chains prevalence. Anti TB treatment combined with pulse iv Cyclophosphamide 500 mg biweekly, AZA, Medrol 32mg tapering plus Coll Cyclosporin 2% X3 OU. Three months thereafter signs of improvement and stabilisation were evident. Still new episode of acute abdominal pain revealed pelvis abscess that drained under C/T. Tissue samples r-RNA MTB (TOSOH) found negative.**Conclusions:** Aggressive bilateral Mooren's ulcer is a potential devastating eye condition. Tuberculosis is an under – diagnosed aetiologic agent in Mooren's ulcer. Diagnosis of Ocular TB if frequently presumptive. Delayed hypersensitivity reaction could be a possible mechanism to autoimmune nature of the disease. This is the first reported case to best of our knowledge that correlates the two entities.

FP08.

ANXIETY AND DEPRESSION IN INFLAMMATORY EYE DISEASE: EXPLORING THE POTENTIAL IMPACT OF TOPICAL TREATMENT FREQUENCY AS A PUTATIVE PSYCHOMETRIC ITEM**MD Georgios Vakros^{1,2}, Professor Philip Murray², Miss Saeeda Rauz²**

1 Vakros Eye Clinic, Egaleo, Greece

2 Birmingham and Midland Eye Center, Birmingham, UK

Purpose: To evaluate whether topical therapy is linked to scores related to anxiety, depression and quality of life (QoL) in inflammatory eye disease (IED).**Methods:** Ocular Surface Disease (OSD, N=100) and Uveitis (N=100) patients completed self-administered validated questions on ocular symptoms and wellbeing, with supplemental questions on eye drop frequency.**Results:** Forty (20%) patients had scores consistent with depression and 33 (17%) anxiety. Anxiety, depression, QoL and OSD index (OSDI) scores did not differ significantly between OSD and Uveitis groups. In those with anxiety or depression, QoL was significantly reduced in all World Health Organisation Quality Of Life-BREF (WHOQOL-BREF) domains (all p<0.001). Multivariable analysis considering demographic and disease-related factors found daily topical drop frequency to be independently associated with anxiety (p=0.009) but not depression (p=0.300).**Conclusion:** A high proportion of IED patients demonstrated scores indicative of anxiety and depression. Preliminary evidence suggests that the frequency of topical eye drops potentially plays a significant role in the psychological health status of IED patients.

FP09.

TRAUMATIC INTERFACE FLUID SYNDROM (IFS) AFTER LASIK**Evangelos Chatzizisis¹**

Ιδιώτης Ιατρός, Πανεπιστημιακός Υπότροφος Β Οφθαλμολογική Κλινική Από (νοσ. Παπαγεωργίου), Καστοριά, Greece

Purpose: Presentation of a case of Traumatic Interface Fluid Syndrom (IFS) after Lasik.**Method:** A 56-year-old woman presented with a paracentral perforating corneal injury to her left eye. She had 7 years ago a laser in situ keratomileusis (LASIK). She was treated with a therapeutic contact lens and topical therapy. In the first week after the injury was observed an interface fluid accumulation in OCT and a decrease of the posttraumatic visual acuity (VA). The follow up is 9 months and was measured VA, OCT and cornea imaging.**Results:** 5 weeks after its appearance, the interface fluid accumulation was no more detectable, the VA was improved and 9 months later is 0.6.**Conclusion:** The IFS is most commonly related to high intraocular pressure, but is also described by corneal endothelial failure or disruption, as it is after a traumatic cornea injury. There are only a few cases described in the international bibliography.

FP10.

CASE PRESENTATION OF KERATITIS IN AN 11-MONTH-OLD BABY AND REVIEW OF THE LITERATURE**Plaka A.¹, Karavitaki A.², Zoidakis D.¹, Genos E.¹, Makrigiannis G.¹**

1 Ophthalmology Clinic, General Hospital of Chania

2 Private Ophthalmologist, Chania

Purpose: the presentation of a case of keratitis in an 11-month-old infant that was treated in our clinic**Method:** A female baby was referred to our clinic due to redness, photophobia and tearing. The infant was receiving coll tobramycin for conjunctivitis without improvement. The examination revealed infiltration with corneal epithelial deficiency at 7 o'clock and the infant was treated with coll ofloxacin q1h.**Results:** The infiltration showed significant improvement over the next 2 days while the culture was negative. Since then, the child is under regular examination to treat possible amblyopia. In her last examination her visual acuity is satisfactory for her age.**Conclusions:** The treatment of keratitis in babies should be immediate as there is risk of amblyopia and permanent reduction of visual acuity.

FREE PAPERS

FP11.

CALCULATING RELATIVE EFFICACY IN PRESBYOPIC CORRECTIONS: A NOVEL APPROACH

Eirini-Kanella Panagiotopoulou, Panagiota Ntonti, Asli Perente, Niki-Ioanna Xanthopoulou, Aristeidis Konstantinidis, Doukas Dardabounis, Georgios Labiris

Department of Ophthalmology, University Hospital of Alexandroupolis, Alexandroupolis

Purpose: Introduction and validation of the novel index of relative efficacy for the assessment of pseudophakic presbyopic corrections.

Methods: The following four methods of pseudophakic presbyopic correction were evaluated by a novel mathematical model: 1. Monovision Group: myopic monovision with bilateral monofocal intraocular lens-IOL implantation, 2. Multifocal Lens Group: bilateral trifocal diffractive IOL implantation, 3. Hybrid Monovision Group: implantation of a monofocal IOL in the dominant and a diffractive trifocal IOL in the recessive eye, 4. Premium Monovision Group: implantation of a hybrid bifocal IOL in the dominant and a diffractive trifocal IOL in the recessive eye. The model included the following parameters: binocular uncorrected distance visual acuity (UDVA), binocular uncorrected reading acuity (RA) and critical print size (CPS) at 60cm and 40cm, contrast sensitivity, subjective satisfaction, dysphotopic symptoms and spectacle independence. Regression analysis and curve modeling allowed the construction of the mathematical model of relative efficacy for each surgical intervention based on the total Visual Function Index-14 (VF-14) score as a function of each measured clinical parameter score.

Results: 120 participants were recruited and populated equally the study groups. Regression analysis and curve modeling revealed the relative impact of each parameter on the dependent variable of relative efficacy and allowed its overall estimation. In accordance to our model, premium monovision demonstrated the highest relative efficacy (92.18%) followed by bilateral trifocal implantation (88.49%), hybrid monovision (87.89%), and monovision (70.78%).

Conclusions: Relative efficacy is a novel valid method for the assessment of the efficacy of pseudophakic presbyopic corrections.

FP12.

CORNEAL CONFOCAL MICROSCOPY AS AN EARLY DIAGNOSTIC BIOMARKER FOR THE DETECTION OF NEUROPATHY IN SUBJECTS WITH TYPE 1 DIABETES MELLITUS

Ziori Maria¹, Tentolouris Nikolaos², Eleftheriadou Ioanna², Voudouri Adamantia³

1 2nd Department of Ophthalmology, University of Athens Medical School, "Attikon" General Hospital, Athens,

2 1st Department of Propaedeutic Internal Medicine, National and Kapodistrian University, Diabetes Center, "Laiko" General Hospital, Athens,

3 Ophthalmological Center "Athens Eye Care", Athens

Aim: To investigate the association between small nerve fiber damage, detected by corneal confocal microscopy (CCM), peripheral neuropathy (PN) and autonomic nervous system neuropathy (AN), among individuals with type 1 diabetes mellitus (T1DM).

Methods: 96 subjects with T1DM and 35 controls with underwent examination with CCM on the right eye. Six images of the sub-basal corneal nerve plexus were selected and nerve fiber density (NFD), nerve branch density (NBD) and nerve fiber length (NFL) were quantified. The diagnosis of PN was based on neuropathy symptom score and neuropathy disability score and of AN on cardiovascular tests proposed by Ewing.

Results: Individuals with T1DM (mean age 38,6±13,6 years) compared with control group (mean age 38,6±13,6 years) had lower NFD (5,2 vs 12,5), NBD (3,1 vs 12,5) and NFL (7,6 vs 11,0), all p<0,001. Subjects with T1DM and PN compared with those without PN had lower NFD (2,1 vs 5,2), NBD (0,5 vs 4,2) and NFL (4,0 vs 7,9), all p<0,05. Patients with T1DM and AN compared with those without AN had lower NFD (4,2 vs 6,2, p=0,120), NBD (2,1 vs 4,2, p=0,146) and NFL (6,0 vs 8,0, p=0,053). In participants with T1DM, the corneal nerve parameters were negatively correlated with neuropathy disability score ($r=-0,301$ for NFD, $r=-0,257$ for NBD, $r=-0,346$ for NFL, all p<0,05) and AN score ($r=-0,261$ for NFD, $r=-0,264$ for NBD, $r=-0,321$ for NFL, all p<0,05).

Conclusions: CCM is an early diagnostic biomarker for the detection of neuropathy in subjects with T1DM.

FP13.

TOPOGRAPHY GUIDED SURFACE MODELLING, OF KERATOCONIC CONTACT LENS TO IMPROVE POINT SPREAD FUNCTION (PSF) AND VISUAL PERFORMANCE

Lefteris Karageorgiadis BScOptom¹, Nikos Vasileiou, BScOptom², Nikos Karageorgiadis MD³

1 EYEART Fitting center, Thessaloniki, Greece

2 EYEART Laboratories, Thessaloniki, Greece

3 Private practice, Thessaloniki, Greece

Purpose: Hydrophilic contact lenses are extensively used to improve vision in keratoconic patients because of the soft material modulus, initial patient comfort and patient friendly form. These designs consist of a thicker optical zone. Conversely, material flexure poses limits on visual outcome. A new custom lens fitting procedure and design is being introduced to further improve those outcomes, modifying front lens surface geometry, using corneal topography data.

Method: Corneal topography over the soft keratoconic trial lens is compared with the one without lens. Two attributes are studied which will lead to custom zone powers, to render more homogeneous the refractive surface. The first being the peak central and peripheral powers. The second attribute is the surface wavefront analysis over the trial lens. The second order spherical component of the wavefront analysis is compared at two zone diameters. Final outcome is evaluated, with Snellen visual acuity subjectively and point spread function (PSF) objectively. A patient with steep central cone is presented and the relative results with the initial Delta Conus lens worn compared, with the newly designed custom lens.

Results: Soft lenses for keratoconus improve visual acuity drastically, but soft material bending, limits the visual outcome in some cases, therefore a custom surface design can improve point spread function. The methodology described, provides the clinician an additional corrective tool to improve visual outcome.

Conclusions: Dioptric zone design can be extended via various topography or tomography systems, incorporating front and back corneal irregularity data as well as total ocular wavefront data.

FP14.

ANTERIOR OCT BASED, CUSTOM PERIPHERAL SCLERAL LENS GEOMETRY DESIGN, AS AN ALTERNATIVE TO SCLERAL TOPOGRAPHY SYSTEMS OR IMPRESSION TECHNIQUES, IN CASES OF IRREGULAR SCLERAL MORPHOLOGY

Mr Lefteris Karageorgiadis¹, Mr Nikos Vasileiou, Dr Marina Banteka

1 Eyeart Fitting centre, Thessaloniki, Greece

Purpose: Challenging issues in fitting are scleral morphology abnormalities, as pinguecula and pterygium as well as highly toric scleral shapes, found mostly in hyperopes. A standardized imaging sequence is introduced using OCT, to quantify the areas of modification which will lead to a custom scleral landing zone design.

Method: Anterior OCT is used, at primary, secondary or tertiary gaze positions. Eight peripheral areas are captured, recording the area between the lens edges and limbus. The goal of lens fitting periphery is to have minimal compression on the conjunctiva. On irregular area of the scleral shape where compression might occur, microns of desired elevation is measured using the OCT straight line tools. Recording protocol is important to securely communicate the data with the lens designer. Bringing the protocol in clinical practice, a hyperopic patient with extreme scleral toricity is fitted, with Epsilon scleral lenses, demonstrating the initial measurements and protocol described and the final custom lens fit is achieved.

Results: The protocol described using anterior OCT, provides a straightforward method for the clinician, achieving the desired results. The use of such customization is indicated when conjunctival compression or unwanted lens edge clearance is present. In addition, proves essential for those cases of contact lens intolerance, presenting no ideal fitting.

Conclusions: Anterior OCT is becoming a valuable technology in scleral lens fitting, for controlling geometry decisions as well as for modifying design with maximal precision. Alternative technology is only possible with specialized extra instrumentation of scleral geometry topographers.

FP15.

TREATMENT OF CORNEAL MELTING IN ACANTHAMOEBA KERATITIS: PACK-CXL OR MULTIPLE LAYER TRANSPLANTATION OF AMNIOTIC MEMBRANE? A CASE REPORT

Lafioniatis N., Korompilia A., Athanasiou A., Mavrikakis E., Rallis K.

«G. Gennimatas» Hospital, Ophthalmology Department, Cornea Unit

Purpose: To present the surgical treatment of corneal melting, caused by persistent acanthamoeba keratitis, with multiple-layer transplantation of amniotic membrane.

Method: A 34-year-old male patient with PCR-confirmed acanthamoeba keratitis was referred to our Department. The patient had been treated for 3 months as a case of herpetic keratitis with intermittent topical and systemic cortisone. Upon examination the patient exhibited a large (>7.5 mm) central corneal ulcer with a dense infiltration ring, corneal thinning, radial perineuritis and severe conjunctival hyperemia. The Brolene protocol was immediately applied along with topical instillation of autologous serum and frequent hydration for the ocular surface disease. Despite the initial response, no epithelial healing was noted and the melting persisted. Thus, the dilemma was posed whether the melting was caused by the infection per se or occurred as a result of its neurotrophic component. In the first scenario PACK-CXL would be the treatment of choice; in the second scenario transplantation of amniotic membrane would be the most indicated treatment, which was finally opted for.

Results: Following multiple-layer transplantation of amniotic membrane corneal melting was arrested and corneal epithelium started to heal. The clinical signs of infection have subsided and the patient's symptoms have improved. Three months postoperatively the patient is still under close follow-up.

Conclusions: Acanthamoeba keratitis, especially in complex cases with hypoesthesia and delayed treatment may pose considerable dilemmas, regarding the optimal surgical approach for its treatment.

FP16.

SURGICAL MANAGEMENT OF EPITHELIAL INGROWTH FOLLOWING TRAUMATIC LAMELLAR LACERATION OF THE CORNEA

Andreas Katsimpris¹, Nafiska Voulgari¹, Anna-Nina Dimitropoulou¹, Marios Katsimpris¹, Myrsini Petrelli¹, George Kymionis¹

1 First Department of Ophthalmology, National and Kapodistrian University of Athens, General Hospital «G. Gennimatas», Athens, Greece.

Aim of the study: To present a rare case of epithelial ingrowth (EI) after corneal traumatic lamellar laceration in a female patient and how it was surgically treated.

Material and Methods: A 57-year-old woman presented to our department complaining of photophobia, blurred vision and foreign body sensation in her left eye (LE). She had a history of corneal trauma on her LE after falling on an aluminum window one month ago, where the diagnosis of corneal lamellar laceration was made at another hospital. Upon presentation, best-corrected visual acuity was 1.0 in her right eye (RE) and counting fingers at 1 meter in her LE. Slit-lamp biomicroscopy of her LE showed a partial thickness corneal laceration with an undisplaced flap with EI within almost the entire flap – stroma interface and fine, diffuse granular opacities. We decided to proceed with surgical debridement of the EI, after obtaining informed consent from the patient, since it was affecting the visual axis.

Results: The procedure was well tolerated by the patient and the flap was undisplaced on the first postoperative day. At the fifth postoperative, reepithelialization of corneal surface has been completed and the bandage contact lens was removed. Slit-lamp examination at week 2 revealed a small amount of debris at interface, without any EI or flap displacement. Visual acuity of the LE was steadily improving after the surgery with subjective improvement of patient's symptoms and one month postoperatively the BCVA was 0.3.

Conclusion: In conclusion, timely mechanical debridement of post-traumatic EI can result in a favorable visual outcome.

FREE PAPERS

FP17.

SURGICAL TREATMENT OF A NEUROTROPHIC CORNEAL ULCER BY USING MULTILAYER AMNIOTIC MEMBRANE TRANSPLANTATION ALONG WITH BOTULINUM TOXIN INJECTION IN A PATIENT WITH BELL'S PALSY

Athanasiou A., Lafioniatis N., Korompilia A., Mavrikakis E., Rallis K.

«G.Gennimatas» Hospital, Ophthalmology Department, Cornea Unit

Purpose: To present the treatment of a neurotrophic corneal ulcer with descemetocele induced by severe Bell's palsy by using multilayer amniotic transplantation and botulinum toxin injection for eyelid closure.

Methods: A 54-year-old female patient with Bell's palsy attended the Cornea Department of our hospital. Bell's palsy had occurred one month before the examination that revealed a deep corneal ulcer with descemetocele. Eyelid closure was impossible and the ocular surface was totally exposed. Due to the high risk of corneal perforation, surgical treatment consisting of multilayer amniotic transplantation was opted for. Under local anesthesia four layers of amniotic membrane graft were placed with the stroma downwards, covering the corneal ulcer. These layers were adapted with fibrin glue. One larger in diameter graft of amniotic membrane with the stroma upwards covered the previous layers and was sutured with seven 10.0 nylon stitches. A few days following surgery the patient underwent injection of botulinum toxin in her upper eyelid, to ensure its proper closure. Topical antibiotic prophylaxis was administered, along with topical and systematic treatment for severe ocular surface disease.

Results: The applied surgical treatment prevented corneal perforation and the amniotic membrane graft was well adapted to the patient's cornea. The patient is still under medical follow-up in our Department.

Conclusions: Bell's palsy can induce severe neurotrophic corneal ulcers really quickly. In neurotrophic corneal ulcer cases that do not respond well to medication, multiple layer amniotic membrane transplantation, combined with botulinum toxin injection in the upper eyelid, can prevent corneal perforation.

FP18.

THE ROLE OF «CORNEOPLASTICS» IN THE MANAGEMENT OF PATIENTS WITH CORNEAL ECTATIC DISORDERS

Myrsini Petrelli¹, Andreas Katsimpris¹, Marios Katsimpris¹, Anna Nina Dimitropoulou¹, Andreas Mouchtouris¹, George Kymionis¹

1st Department of Ophthalmology, 'G. Gennimatas Hospital', National and Kapodistrian University of Athens, Greece

Purpose: To describe the use of different surgical techniques, namely corneal full-thickness wedge excision, lamellar crescentic resection and corneal plication for the management of ectatic disorders and assess their effectiveness.

Methods: We present our experience with different surgical approaches including corneal full-thickness wedge excision, lamellar crescentic resection and corneal plication in patients with pellucid marginal degeneration (PMD) and keratoconic patients with post-keratoplasty graft protrusion. All patients had progressive deterioration of best-corrected visual acuity (BCVA), increased astigmatism, and intolerance to contact lens wear. Full-thickness wedge resection was performed in 1 case, lamellar resection in 3 cases and corneal plication in one patient.

Results: In all cases normalization of the cornea shape was achieved and no intra-operative or post-operative complications were observed. Uncorrected visual acuity (UCVA), BCVA, astigmatism, corneal topography, and contact lens or spectacle tolerability markedly improved in all patients.

Conclusions: All three surgical techniques offer excellent anatomical and functional results for the management of corneal ectasia in PMD or post-keratoplasty graft protrusion in keratoconic patients. They represent effective surgical interventions that help avoid corneal (re-)transplantation by way of a penetrating or lamellar keratoplasty.

FP19.

REACTIVATION OF HERPETIC KERATITIS AFTER COVID-19 mRNA VACCINATION EVEN DURING HERPETIC PROPHYLAXIS

Dr Despina Eleftheriadou¹, Dr Michael Tsatsos²

1 LM Vision, Laser Microsurgery Vision, Day Case Surgery Unit, Thessaloniki, Greece

2 Aristotle University of Thessaloniki, Thessaloniki, Greece

Purpose: Our aim was to report two separate cases of Herpes Simplex Keratitis recurrence after the first dose of Covid-19 mRNA vaccine in patients that were on herpetic prophylaxis due to previous corneal graft and recurrent herpes keratitis respectively.

Method: Two case reports and literature review.

Results: The first case was a 58-year-old man with previous penetrating keratoplasty presented with blurred vision and evidence of endothelitis 24 after the first dose of the m-RNA vaccination. The second case concerned a 24-year-old male student that presented with dendritic ulcer 48 hours post vaccination. The original prophylactic treatment of 400mg acyclovir twice day was increased to five times per day for a week. Dexamethasone 0.1% was increased to four times a day (QDS) from once a day in the grafted patient. Improvement was noted within two days and documented at the weekly review during which both patients returned to their prophylactic antiviral regime without further recurrence. At the time of their second dose vaccination, both patients followed the same increased in treatment as per first dose of vaccination without recurrence.

Conclusions: Our two cases suggest that patients on recurrent herpetic disease, receiving prophylactic treatment might benefit from adjustment of their dose to therapeutic levels during the first days after Covid-19 mRNA vaccination.

FP20.

COMPARATIVE STUDY OF TWO IN OFFICE PROCEDURES FOR CLEANSING OF BIOFILM FROM LID MARGIN IN BLEPHARITIS CASE

Kostas Boboridis, Agni Mokka, Panagiotis Ageladarakis, Athanasios Oikonomou

1st & 3rd Ophthalmology Department, Aristotle University of Thessaloniki

Purpose: To investigate the relative effectiveness of two in office procedures for cleansing the biofilm from lid margin in blepharitis cases.

Methods: Prospective comparative pilot study of blepharitis case. The mechanical micro debridement with the Blephex which is considered the golden standard, is compared with the simple manual cleansing with wipes impregnated with 4-terpineol and 0,2% hyaluronic acid. We recorded the result right after cleansing as 0= no difference, 1= partial cleansing only on the skin in between lashes, 2= complete cleansing of skin, 3= complete removal of biofilm including lash roots.

Results: We have enrolled 40 consecutive cases of advance blepharitis over one year period (2021). Right after the Blephex procedure we have recorded complete cleansing of stage 3 in all cases. Digital cleansing with impregnated wipes achieved similar removal of biofilm from lid margin at the same time. Cleansing with wipes was more comfortable as pressure could be varied depending on the case in contrast to Blephex with stable pressure and rotation.

Conclusions: Both in office procedures offer complete cleansing of lid margin. A learning curve is required mainly for Blephex which is significantly more expensive both for device and consumables. The wipes with 4-terpineol may additionally eradicate demodex infestation. Treatment should be repeated at least 3 times with 2 weeks interval and patients should maintain adequate lid hygiene at home. The effect of cleansing on MGD, tear quality and symptoms need to be determined with a different trial.

FP21.

TOXIC CONJUNCTIVITIS FROM COSMETICS: DESCRIPTION OF THE PATHOLOGY AND EVALUATION OF TOPICAL TREATMENT WITH UNPRESERVED HYDROCORTISONE 3,35 MG/ML AND KETOTIFEN 0,25 MG/ML

Agni Mokka, Kostas Boboridis

1st & 3rd Ophthalmology Department, Aristotle University of Thessaloniki

Purpose: To describe the frequently misdiagnosed condition of toxic conjunctivitis from facial cosmetics and to evaluate the effectiveness of our topical anti-inflammatory treatment.

Methods: Over one year period (2021) we recorded 28 patients (26 females and 2 males) with toxic conjunctivitis from facial cosmetic creams. The clinical presentation involves burning sensation, epiphora, redness and edema of palpebral conjunctiva with follicular response, edema of punctum and contact dermatitis of the medial lid skin. We advised cessation of facial creams and administered artificial tears with HA, topical unpreserved hydrocortisone 3,35 mg/ml (4 times daily for 2 weeks) and ketotifen 0,25 mg/ml (twice daily for 4 weeks). Follow up was in 2 and 4 weeks.

Results: All patients had symptoms for over two months and received more than 3 different treatments. In 4 weeks, 23/28 (82%) patients had full recovery, whereas 5/28 (18%) although improved required reaffirming of cosmetic cessation and continued topical ketotifen for two more weeks until complete resolution of symptoms.

Conclusions: Toxic conjunctivitis from facial creams is a frequent condition, especially in women and is often misdiagnosed as allergic conjunctivitis. Cessation of facial creams is mandatory. Topical treatment with HA artificial tears, topical unpreserved hydrocortisone 3,35 mg/ml and ketotifen 0,25 mg/ml offers highly effective anti-inflammatory action with no increase in intraocular pressure or other side effects.

FP22.

RECURRENCE OF BILATERAL GRANULAR CORNEAL DYSTROPHY FOLLOWING CORNEAL KERATOPLASTY

Ageladarakis P.¹, Giannoukaki A.¹, Mikropoulos D.²

Resident at 1st University Department of Ophthalmology AHEPA Hospital

Cornea Clinic 1st University Department of Ophthalmology AHEPA Hospital

Purpose: Report of bilateral granular corneal dystrophy recurrence in a patient, who underwent bilateral keratoplasty.

Method: A woman with bilateral granular corneal dystrophy, has been examined in corneal clinic of our department on 2015. Her visual acuity was 1/10 OD and 1/20 OS. She underwent penetrating keratoplasty in her left eye (2015) and deep anterior lamellar keratoplasty in her right eye (2019). Unfortunately, months later, she had erosions and opacities resembling a recurrence of granular corneal dystrophy in both corneal grafts.

Results: Six years after her first appointment at the corneal clinic, her visual acuity was counting fingers OD and 1/10 OS. The slit lamp examination showed recurrence of granular corneal dystrophy in both corneal grafts.

Conclusions: Corneal granular dystrophy may be recurrent in corneal graft.

FREE PAPERS

FP23.

MULTIFOCAL INTRAOULAR LENS CANDIDACY IN PATIENTS UNDERGOING PRE-OPERATIVE EVALUATION FOR CATARACT SURGERY IN SPECIALIZED EYE HOSPITAL "OPHthalmiatrion"

Ntravalias Thomas Koukos Nikolaos, Markopoulos, Ioannis Halkiadakis Micahlis Tzakos

1st Ophthalmology Department, "Ophthalmiatreio" Specialized Eye Hospital, Athens, Greece

Purpose: To identify suitable candidates for multifocal intraocular lens implantation in patients undergoing preoperative evaluation for cataract surgery in specialized eye hospital "Ophthalmiatrion".

Materials and Method: Data were collected during the preoperative patient evaluation. Screening was performed based on patients medical record, comprehensive ophthalmic examination, ocular history, optical biometry (Zeiss, IOL Master 700) and Optical Coherence Tomography (Heidelberg, OCT Spectralis) in accordance with the relative indications and contraindications as mentioned at current literature.

Results: The study evaluated 219 consecutive patients with a mean age of 74.60 ± 7.40 years. Seventy-six patients (34.7 %) were eligible for receiving a multifocal intraocular lens. The majority of the poor candidates, 34 (23.8 %) was excluded because of retinal disease, 13 (9 %) due to astigmatism (> 1.25 D of corneal astigmatism), 10 (7%) because of glaucoma and 7 (4.9 %) due to zonular instability. Twenty-four patients (16.8 %) were excluded because of monofocal intraocular lens in the other eye while in 34 (23.8 %) patients there was more than one reason to fail. The most common cause of exclusion due to retinal disease was age related macular degeneration in 16 (11.2 %) patients, epiretinal membrane in 9 (7 %) patients and diabetic retinopathy in 4 (3.5 %). The mean age of good and poor candidates was 71.8 and 76 respectively ($p < 0.01$).

Conclusion: One third of patients for scheduled for cataract surgery in a public hospital are good candidates for multifocal intraocular lens implantation. The most common contraindication is macular disease and therefore OCT examination of the macula should always be part of preoperative evaluation.

FP24.

VISUAL OUTCOMES AFTER BILATERAL IMPLANTATION OF ACRYSOFTM IQ VIVITYTM EXTENDED VISION INTRAOULAR LENS

Andreas Katsimpris¹, Konstantina Chronopoulou¹, Alessandro Di Maggio², Maria Alexaki¹, George Kymonis¹

1 First Ophthalmology Department, «G.Gennimatas» Hospital, Athens, Greece.

2 Department of Ophthalmology, University of Siena, Siena, Italy.

Aim of the study: To assess the visual and refractive outcomes of the non-diffractive extended depth of focus (EDOF) AcrySof® IQ Vivity™ (Alcon, Fort Worth, TX, USA) intraocular lens (IOL) (1) after bilateral implantation in patients undergoing phacoemulsification surgery.

Material and Methods: In this prospective non-comparative study, 20 patients willing to undergo bilateral implantation of AcrySof® IQ Vivity™ IOL were recruited at a single center (Eye Day Clinic, Athens, Greece). Pre- and post-operative clinical assessment of the patients included slit lamp examination, assessment of corrected distance visual acuity (CDVA) at 6 m, uncorrected distance visual acuity (UDVA) at 6 m, uncorrected intermediate visual acuity (UIVA) at 66 cm, uncorrected near visual acuity (NDVA) at 33 cm and optical biometry. Moreover, the presence of visual disturbances and the contrast sensitivity (CS) thresholds of all patients were assessed.

Results: The mean \pm standard deviation (SD) of monocular UDVA, UIVA and UNVA were 0.05 ± 0.08 , 0.07 ± 0.09 and 0.23 ± 0.09 LogMAR, respectively. More specifically, 97.5%, 70% and 15% of eyes achieved UDVA, UIVA and UNVA of 20/25 or higher, while 6 patients in total reported mild glare, blurred vision, fluctuation in vision and/or depth perception difficulty. The mean \pm SD of LogCS threshold was 1.68 ± 0.26 .

Conclusion: Bilateral implantation of AcrySof® IQ Vivity™ IOL could be a solution to patients seeking independence from optical aids. Further comparative studies are warranted to confirm our results.

FP25.

REFRACTIVE OUTCOMES FOLLOWING CATARACT SURGERY IN PATIENTS WHO HAVE HAD LASER VISION CORRECTION IN THE PAST

Prof Sofia Theodoropoulou¹, Georgia Toliou¹, Dr Panagiotis Vasilopoulos¹, f.Prof Spyridon Georgaras¹

1 Ophthalmos Research & Therapeutic Institute - Hygeia Hospital, Athens, Greece

Purpose: Prediction errors are increased among patients presenting for cataract surgery with post laser vision corrections. We investigated the prediction errors of 5 formulae in order to objectively determine which formula was best for calculating intraocular lens (IOL) power.

Setting: Ophthalmos Research & Therapeutic Institute, Glyfada, Athens

Methods: 67 Consecutive patients (87 eyes) undergoing cataract surgery after previous LASIK were included. The accuracy of treatment was calculated and compared between different formulas. For determining the difference between the intended and postoperative refractive error, data were transformed into components of Long's formalism, before changing into sphere-cylinder notation.

Results: There were no significant differences between the intended and the postoperative refractive error using different biometry formulae ($p=0.639$). We performed sub-group analysis of toric IOLs, and all 3 components of Long's formalism were not significantly different between intended and postoperative refractive outcomes ($p=0.419, 0.301, 0.611$, for each component respectively). The Double K formula was the most frequently used and had the highest percentages of eyes with expected spherical equivalent refractive errors within 0.50 diopter (D) and 1.00 D (63% and 82%, respectively). Expected sphere results were not significantly different for any formula (adjusted $R^2 = 0.388$, $P = 0.542$).

Conclusions: Refractive outcomes following cataract surgery in patients with prior LASIK were very good, with no significant difference from intended target, even in the patients who had toric IOLs. No particular biometry formula appears to be superior post LASIK.

FP26.

VISUAL PERFORMANCE AND QUALITY OF LIFE ASSESSMENT AFTER EXTENDED DEPTH-OF-FOCUS (EDOF) ACRYSOF IQ VIVITY INTRAOCULAR LENS IMPLANTATION

Dr Leonidas Mavroudis¹, Marina Banteka¹, Christina Keskini¹

¹ LMVision, Laser Microsurgery Vision, Day Case Surgery Unit, Thessaloniki, Greece

Purpose: To report the visual performance and quality of life after extended depth-of-focus (EDOF) AcrySof IQ Vivity intraocular lens implantation in a real-life clinical setting.

Methods: The study was designed as an interventional, prospective, case series. Patients in need of lens extraction and without any other ocular disease underwent phacoemulsification with AcrySof IQ Vivity IOL implantation. The current analysis was performed in subjects having a 3-month post-operative visit. The main outcome measures were the uncorrected and best-corrected distance visual acuity (4m) (UNVA, BCVA), as assessed with Topcon CC100-ETDRS charts, and quality of life (QoL), as assessed with the VF-14 questionnaire.

Results: Phacoemulsification with AcrySof IQ Vivity IOL implantation was performed in 20 eyes of 13 patients. The spherical equivalent prediction error (SE-PE) was within 0.75D in all eyes. Median BCVA was 1.25 (1.00, 2.00), while mean UNVA was 1.21 (± 0.48), with 70% of the eyes presenting with UNVA ≥ 1.0 . After assessing QoL with VF-14, 10%, 50% and 40% of the subjects reported no visual impairment (VI), minimal VI and mild VI, respectively. After removing the effect of questions evaluating fine near activities, 50%, 30% and 20% of the subjects reported no visual VI, minimal VI and mild VI, respectively.

Conclusion: EDOF AcrySof IQ Vivity IOL shows excellent visual performance in distance vision and offers satisfactory QoL results 3 months after IOL implantation.

FP27.

NEAR VISUAL PERFORMANCE OF EXTENDED DEPTH-OF-FOCUS (EDOF) ACRYSOF IQ VIVITY INTRAOCULAR LENS IMPLANT

Dr Leonidas Mavroudis¹, Marina Banteka¹, Christina Keskini¹

¹ LMVision, Laser Microsurgery Vision, Day Case Surgery Unit, Thessaloniki, Greece

Purpose: To report the near visual performance of extended depth-of-focus (EDOF) AcrySof IQ Vivity intraocular lens implant in a real-life clinical setting.

Methods: Patients in need of lens extraction and without any other ocular disease underwent bilateral phacoemulsification with AcrySof IQ Vivity IOL implantation. The current analysis was performed in subjects having a 3-month post-operative visit. Uncorrected near VA was assessed with MNREAD-GR (40cm). Subjects' quality of life, including near vision activities, was assessed with VF-14 questionnaire.

Results: Phacoemulsification with AcrySof IQ Vivity IOL implantation was performed in 20 eyes of 10 patients. Mean critical print size (CPS), mean reading acuity (RA), and mean reading speed (MRS) as assessed with MNREAD-GR were 9.63 (± 3.19), 0.15 (± 0.85), and 149.90 (± 33.42), respectively. The minimum and maximum values were 4.60 and 15.00 for CPS, 0.00 and 0.28 for RA, and 86.00 and 186.00 for MRS, respectively. Among all VF-14 questions those with the highest frequency of visual impairment were those assessing near activities. 70%, 50% and 25% of the subjects reported at least minimal visual impairment when reading small print, reading newspaper or book, and doing fine handwork, respectively.

Conclusion: Bilateral EDOF AcrySof IQ Vivity IOL shows satisfactory near visual performance 3 months after IOL implantation.

FP28.

CORRELATION OF CUMULATIVE DISSIPATED ENERGY (CDE) AND POST-OPERATIVE THICKNESS OF MACULA AND CHOROID IN PATIENTS WHO UNDERWENT UNCOMPLICATED PHACOEMULCIFICATION

V. Kozombolis, E. Georgopoulos, E. Detorakis, G. Trypsianis, A. Papadopoulos, E. Chatzispasou

Master's dissertation "Ophthalmic Imaging"

Purpose: In the current study, two different hypotheses are examined. First, if the procedure causes changes in the posterior half of the eye and what they are, and secondly if these changes are related to the total amount of ultrasound energy spent in each procedure.

Methods: This is a prospective study that examined 45 eyes of patients who underwent uncomplicated cataract surgery due to lenticular cataract. The parameters measured in the study are the average thickness (μm) and the average volume (mm^3) of the macular areas, as well as the subfoveal choroidal thickness (SFCT, μm). For the measurements, spectral-domain (SD) OCT (Heidelberg Spectralis, Heidelberg, Germany) was used, with map scanning of 9 predefined areas based on the Early Treatment Diabetic Retinopathy Study (ETDRS) and enhanced depth imaging (EDI). The measurements were performed immediately before surgery, on the first postoperative day, the first postoperative week and the first postoperative month. The statistical analysis used the paired t-test and the Pearson's correlation coefficient.

Results: The results of the study showed that after an uncomplicated cataract surgery, there is an increase in the thickness and the volume of the macula in the first postoperative month, while failing to demonstrate corresponding changes in the thickness of the choroid, and to associate these changes with the total cumulative dissipated energy spent.

Conclusion: Surgical treatment of cataract by the method of phacoemulsification can cause changes in the homeostasis of both the anterior half of the eye and the posterior as well, with the retina and the choroid as the primary endpoints. Such changes should be taken into account, as they may lead to further pathologies which may result in a permanent decrease or loss of visual acuity.

FREE PAPERS

FP29.

EVALUATION OF EYE FIXATION-BASED READING PERFORMANCE IN PRESBYOPIA CORRECTION WITH MULTIFOCAL CONTACT LENSES

Dr Sotiris Plainis¹, Emmanouil Ktistakis¹, Prof Miltiadis Tsilimbaris¹

1 University Of Crete, Lab Optics & Vision (lov), Heraklion, Greece

Purpose: Many activities of daily living rely on reading, thus it is not surprising that complaints from presbyopes originate in reading difficulties. Here, a fixation-based analysis of reading performance evaluates the effectiveness of presbyopia correction with multifocal contact lenses (CLs).

Methods: Visual performance of thirty presbyopic volunteers (age: 50 ± 5 yrs) was assessed monocularly and binocularly with: (a) single vision (SV) and (b) aspheric multifocal (MF) CLs (Air Optix Plus Hydraglyde, Alcon Laboratories). LogMAR acuity was measured with ETDRS charts. Reading performance was evaluated using standard IReST paragraphs (0.4 logMAR print size at 40cm distance). Eye movements were monitored with an infrared eyetracker. Data analysis included computation of reading speed, fixation duration, fixations per word and percentage of regressions.

Results: Average reading speed was 250 ± 68 and 235 ± 70 wpm, binocularly and monocularly, with SV CLs, improving statistically significantly to 280 ± 67 and 260 ± 59 wpm, respectively, with MF CLs ($p < 0.001$). Fixation duration and fixations per word showed a statistically significant improvement when reading with MF CLs, with fixation duration exhibiting the stronger correlation ($r = 0.79$) with reading speed improvement. The correlation of reading speed with VA was low ($r = -0.36$), as was the case between VA and other eye fixation parameters.

Conclusion: Reading speed improved with MF CL correction and was faster with binocular viewing. This enhancement could not be predicted by VA improvement and was mainly due to the faster average fixation duration. Evaluating reading performance using eye fixation analysis could offer a reliable outcome of functional vision in presbyopia correction.

The study was supported by an investigator-initiated study grant from Alcon (IIT# 52977371).

FP30.

ELIMINATION OF CALCIUM PHOSPHATE DEPOSITS FROM OPACIFIED HYDROPHILIC INTRAOCULAR LENSES: DISSOLUTION MECHANISM

MD,BScChem,PhD Panos Gartaganis¹, BSc Andreas Tziolas², BSc Panagiota Natsi², Emeritus Professor Sotirios Gartaganis³,

MD Ioannis Giannakis¹, MD,PhD,MBA,MSc,DAvMed,DipCatRed,FEBO Efthymios Karmiris¹, Emeritus Professor Petros Koutsoukos²

1 251 Airforce General Hospital, Athens, Greece

2 Department of Chemical Engineering, Laboratory of Inorganic and Analytical Chemistry, University of Patras and FORTH-ICEHT, Patras, Greece

3 Department of Ophthalmology, School of Medicine, University of Patras, Patras, Greece

Purpose: Hydrophilic intraocular lenses (IOLs) with 18% and more water content showed deposits of calcium phosphate. Is it possible to eliminate calcific deposits from opacified hydrophilic IOLs?

Methods: Hydrophilic IOLs were opacified in simulated aqueous humor and/or simulated body fluid, both supersaturated with respect to calcium phosphate, in an eye chamber reactor. Opacification was monitored by microscopy (optical, and scanning electron microscopy). The elimination of the calcific deposits from opacified hydrophilic IOLs by dissolution in the absence and in the presence of 1.0 mM EDTA, citric acid and ascorbic acid, was attempted at constant pH 7.40, 37.0°C. All test solutions were undersaturated with respect to calcium phosphate. The dissolution process was monitored for up to 30 days.

Results: Exposure of opacified IOL because of calcification, in solutions undersaturated with respect to calcium phosphate, resulted in the reduction of the deposits over 30 days. All test compounds resulted in the reduction of calcific deposits. Most effective removal of calcific deposits was obtained in the presence of 1.0 mM ascorbic acid and EDTA (80 and 60%, respectively). The removal of calcific deposits was not uniform over the IOL surface. Highest removal was found in the center of the concave part of the lens. This was attributed to the local higher undersaturation calculated from the fluid dynamics profile. Repeated cycles resulted in more extensive dissolution.

Conclusion: Calcific deposits on hydrophilic IOLs can be removed by exposure in solutions simulating aqueous humor in the presence of 1.0 mM ascorbic acid, EDTA and citric acid, in this order.

FP31.

LATE ONSET LIQUEFIED AFTER-CATARACT LOOKING LIKE INTRAOCULAR LENS CALCIFICATION: THE CONTRIBUTION OF IOL IDENTIFICATION CARD TO THE DIAGNOSIS

MD,BScChem,PhD Panos Gartaganis¹, MD,PhD Menelaos Kanakis², MD Ioannis Giannakis¹,

MD,PhD,MBA,MSc,DAvMed,DipCatRed,FEBO Efthymios Karmiris¹, Emeritus Professor Sotirios Gartaganis²

1 251 Airforce General Hospital, Athens, Greece

2 Department of Ophthalmology, School of Medicine, University of Patras, Patras, Greece

Purpose: To report a case of a 79-year-old woman who developed an extremely delayed liquefied aftercataract (LAC) resembling intraocular lens (IOL) opacification 16 years after uneventful phacoemulsification cataract surgery.

Methods: A 79-year-old Greek woman was referred to our clinic with a 1-year history of progressive visual acuity impairment in the left eye with the suspicion of the diagnosis of intraocular lens opacification by the referring ophthalmologist.

Results: Based on the data from the patient implant identification card we retrieved the manufacturer's name and model number, the design, implant material and serial number. As a result of this sentinel event, we concluded that an uneventful phacoemulsification with a continuous curvilinear capsulorhexis (CCC) and a hydrophobic acrylic intraocular lens implantation was performed 16 years previously. As the implanted lens was hydrophobic, it was practically not amenable to opacification. The patient was subsequently treated with Nd:YAG laser posterior capsulotomy with resolution of the milky fluid and complete restoration of vision.

Conclusions: We present a rare case of an extremely late onset LAC and highlight the importance in the clinical decision-making process of the data retrieved from IOL's identification card, that held a critical role in establishing the correct diagnosis and treatment.

FP32.

THE INTRAOCULAR LENS ELEMENT IN COMBINED PHAOEMLSIFICATION AND TRABECULAR MESHWORK MICRO-BYPASS (ISTENT INJECT) FOR OPEN ANGLE GLAUCOMA

Mr Minas Georgopoulos¹

1 Surrey And Sussex Nhs Trust, , United Kingdom

Purpose: To compare the results with hydrophobic vs hydrophylic intraocular lens implants in combined phacoemulsification, IOL implantation and trabecular meshwork bypass (iStent Inject).

Design: Prospective randomized single unit, single surgeon study

Participants: 39 eyes of 39 patients with visual significant cataract and mild-moderate Open Angle Glaucoma were included. They were monitored for 3 years.

Main Outcome Measures: Intraocular Pressure (IOP) and requirement for topical glaucoma drugs.

Secondary Outcome Measures: Visual Acuity (VA), necessity for more glaucoma treatment, refractive results.

Results: 20 eyes were randomized to receive a hydrophobic IOL and 19 a hydrophylic at the time of combined phaco+IOL+Minimally Invasive Glaucoma Surgery. All operation were performed by the same fellowship trained surgeon and they were all uneventful. Patients were reviewed at week 1, month 1, month 3, month 6 and then every 6 months for 3 years. 1 case in each group required trabeculectomy and 2 in the hydrophobic group had Selective LASER trabeculoplasty within 2 years from surgery. There were no cases with more than 1 line loss in BCVA. The refractive outcomes were within the acceptable rates for Royal College of Ophthalmologists.

Conclusion: Combined Phaco+IOL+iStent Inject has equal results despite the IOL material. The refractive outcome is not affected by the iStent Inject placement and no adverse events were noticed. Necessity for more surgical intervention was equally noted in both groups in more advanced cases.

FP33.

THE PRE-TRABECULECTOMY PHACOEMULSIFICATION COMBINED WITH TRABECULAR MESHWORK MICROBYPASS (ISTENT INJECT)

Mr Minas Georgopoulos¹

1 Surrey And Sussex NHS Trust, , United Kingdom

Aim: To identify effect of combined iStent Inject and Phacoemulsification with Intraocular Lens Implantation as a pre-filtering surgery, on Intraocular Pressure (IOP), Visual Field (VF) and Trabeculectomy success rates.

Methods: This study involved retrospective evaluation of 20 consecutive eyes (20 patients) underwent uneventful combined Phaco+Minimally Invasive Glaucoma Surgery for Advanced Glaucoma for visual significant cataract and sub-optimal glaucoma control. All patients had Primary Open Angle Glaucoma and undergone surgery with potential further filtering surgery enhanced with antiscarring agent, by the same surgeon. Follow up for all subjects lasted for at least 2 years. Effect on IOP, VF and success rates on further trabeculectomy surgery was assessed using the Kaplan-Meier survival curve.

Results: In our cohort, almost 50% of cases didn't require further filtering surgery. No patient had any dangerously high IOP spike on week 1. None achieved complete success and all of the cases required topical anti-glaucoma medication. Among those required filtering surgery, complete or qualified success rate was 90% at year 1, 82% at year 2 and 71% at year three. No effect of iStent inject on trabeculectomy was noticed comparing with other audits of the same surgeon. Regression analysis showed that trabeculectomy within 3 months from the combined phaco+iStent surgery and more than 15 years of topical medication decrease the survivability of the trabeculectomy bleb. No effect of previous LASER trabeculoplasty was noted.

Conclusion: Combined phaco+iStent is a safe option for advanced glaucoma and reduces the burden of filtering surgery.

FP34.

IMPACT OF PERSONALITY TYPE, SOCIAL ROLES AND WORKING MANDATES ON VISUAL CAPACITY AND SATISFACTION OF PATIENTS THAT UNDERWENT PSEUDOPHAKIC PRESBYOPIA CORRECTION

Panagiota Ntoni¹, Ioannis Tsinopoulos², Ioannis Seimenis³, Georgios Labiris¹

1 Department of Ophthalmology, University General Hospital of Alexandroupolis, Alexandroupolis

2 2nd Department of Ophthalmology, Aristotle University of Thessaloniki, Thessaloniki

3 Department of Medical Physics, National and Kapodistrian University of Athens, Athens

Purpose: Primary objective of this study is the exploration of the impact of personality type, social roles and working mandates on the visual capacity and satisfaction of patients that underwent pseudophakic presbyopia correction.

Methods: Personality type, social types and working mandates were evaluated as a routine procedure to patients that visited the Presbyopia Service of the University Hospital of Alexandroupolis, by means of structured questionnaires. Six months following pseudophakic presbyopia correction surgery, each study participant was evaluated for his/her visual capacity and vision-specific quality of life. Regression modeling was attempted in order to identify the exact demographics, social roles and personality type of the patient that is most compatible to receive pseudophakic presbyopia correction.

Results: 120 participants, 40 without multifocal presbyopic correction and 80 with multifocal presbyopic correction. There was no statistical significant difference between the two groups regarding age and gender ($p<0.05$). In total 5 characteristics were used to describe personality: extraversion, neuroticism, openness, agreeableness, conscientiousness. There were statistical significant differences in 4 of these, with the multifocal correction group showing a lower percentage in neuroticism and higher percentages in openness, agreeableness and conscientiousness. Overall satisfaction rates were above 88% in the multifocal group.

Conclusion: The outcomes of this study contribute to the body of knowledge on the very hot topic of presbyopic surgical correction in order to better understand patients' needs regarding surgical correction of presbyopia. The final aim is to be able to choose the optimal candidates for pseudophakic presbyopic correction, so as to achieve maximum results and better patient satisfaction.

FREE PAPERS

FP35.

ONE YEAR RESULTS WITH THE USE OF THE CUSTOMIZED THERAPEUTIC PROTOCOL TT-PRK WITH THE iVIS EXCIMER LASER REFRACTIVE SUITE

Constantinos Karabatas^{1,2}, Charalambos Koulas¹, Vasileios Tzanis¹, Marianthi Hirides¹,

1 Attico Ophthalmologiko Eye Center

2 Department of Biomedical Sciences, UNIWA

Purpose: To analyze the effectiveness and safety of the customized Therapeutic-trans-PRK Protocol of the iVis Laser Suite.

Methods: Twenty (20) eyes underwent the therapeutic Trans-PRK procedure. The customization of each case is designed based on preoperative measurements from the Precisio tomography and the pMetrics pupillometry. Treatments involved 13 eyes with keratoconus, 2 cases with corneal opacities, 5 cases with irregular astigmatism and 2 eyes with thin corneas. The following parameters were studied: uncorrected and BCVA, refractive results, corneal tomography, epithelial maps, corneal aberrations, rate of epithelialization and the patient's comfort. All eyes had at least 12 months of follow-up.

Results: All eyes showed considerable improvement (mean preop vs. postop values) in every studied parameter. Unaided visual acuity (0.28 vs. 0.8), BCVA (0.78 vs. 0.9), High Order Corneal Aberrations (HOCMA) 32,04 vs. 12,22. The Anterior Corneal Astigmatism was reduced (-2,21 vs.-1.75), as well as the Anterior Irregularity Index (30.2 vs 16.54). The technique, due to smooth tissue removal with the 1000 Hz excimer laser, significantly accelerates the healing of the cornea (average 3 days), with tolerable levels of pain for the patient.

Conclusions: The customized Therapeutic-trans-PRK protocol of the iVis platform is an excellent, operator independent choice for the correction of corneal abnormalities and corneal opacities. The iVis platform, using Ray Tracing technology, provides optimal security, excellent correction accuracy and tissue saving capabilities through the individualized ideal pupil software.

Financial Disclosure: None

FP36.

OUR EXPERIENCE USING THE 1000 HZ EXCIMER LASER iVIS SUITE, WITH THE TRANS-PRK (CTEN) TECHNIQUE

Koulas Charalambos¹, Kostoglou Aikaterini-Anna¹, Marianthi Hirides¹, Karabatas Constantinos^{1,2}, Pateras Evangelos²

1 Attico Ophthalmologiko

2 Biomedical Sciences Dept, UNIWA

Purpose: To analyze the surgical outcomes and safety of the cTen trans-PRK method, using the iVis Laser Suite.

Methods: Seventy-two (72) eyes underwent refractive cTen treatment (sphere correction ranges +5,25 D to -10.25 D) and astigmatism range 0 to -2.75 D. The surgical outcomes (mean preop vs postop) UCVA, BCVA, topographic and tomographic analysis, corneal aberrations, healing time, safety and patient's comfort were analyzed.

Results: Regardless of preop ametropia, the mean deviation (+/- 0.25D) from the expected correction was achieved in 80% of the cases. The mean postop UCVA was 10/10. A statistical significant improvement was observed also in the higher order corneal aberrations (HOCMA). The cTen t-PRK technique, due to the smooth tissue removal with the 1000Hz excimer laser, significantly accelerates corneal re-epithelialization (by an average of 3 days). Patients reported no significant discomfort.

Conclusions: The refractive platform iVis Suite introduces new patented innovations (Precisio, pMetrics, Ray Tracing analysis, epithelial measurements) in the preoperative study of the patients and the planning of the procedure. The trans-PRK procedure appears as a simple, fast and operator-independent method for a refractive result which proves to be equivalent or even better than those obtained with the classic PRK. The iVis platform opens a new path in refractive surgery, providing optimal safety and correction accuracy.

Financial Disclosure: None

FP37.

INTERMEDIATE-TERM OUTCOMES OF COMBINED PHACOEMULSIFICATION WITH AB INTERNO EXCISIONAL GONIOTOMY WITH THE KAHOOK DUAL BLADE

MD Theodoros Filippopoulos¹, Mr. Dimitrios Tsoukanas^{1,2}, MD, PhD Sotiria Palioura³, MD Dimitra Kopsini¹,

MD, PhD Gerasimos Kopsinis¹

1 Athens Vision Eye Institute, Athens, Greece

2 Precision Ophthalmology Kifissia, Athens, Greece

3 Bascom Palmer Eye Institute, Miami, USA

Purpose: To evaluate efficacy and safety of combined phacoemulsification with ab interno Kahook dual blade goniotomy.

Methods: Retrospective, unmasked, single-surgeon, non-comparative, consecutive case series of n=17 eyes/patients with follow-up>one month. If both eyes eligible, the eye with the longest follow-up was selected. Demographics, diagnosis, and complications were tabulated. Follow-up included post-op day one and seven, post-op month one, three and six and every 6 months thereafter. Kaplan-Meier survival curves were constructed, with the last observation insignificantly carried forward on a few occasions. Success was defined as percentage reduction in intraocular pressure (IOP)>20% compared to baseline without de novo incisional glaucoma surgery or increase in medications.

Results: Average age of the cohort was 72.1±7.5 years, IOP at baseline measured 21.3±3.5mmHg on 2.8±1.3 medications. 47% of patients had primary open angle glaucoma and the average visual field mean deviation of the cohort measured -6.8±7.7dB. After a median follow-up of 11 months (range 1-52 months) the IOP at the last follow-up visit measured 16±2.7mmHg (paired t-test, p<0.0002) while on 2.4±1.3 medications (paired t-test, p=0.002). No patient underwent re-operation for glaucoma, or escalation of medical treatment and no eye was free of medications at the last follow-up. 41% of eyes had hyphema on the first post-operative day. 29% of eyes manifested an early IOP spike (IOP>30mmHg). Success-rate at the last follow-up visit measured 59%.

Conclusion: Combined phacoemulsification with ab interno excisional goniotomy appears to be a reasonable option for patients with cataract and mild-moderate glaucoma in need of a modest pressure reduction.

FP38.

ANTERIOR CHAMBER CHOPPING – “BALERINA - LIKE” CHOP IN BRUNESCENT CATARACTS

Ypatia Nachi¹, Maria Chatelou¹, Eustratia Amaxilati¹, Despoina Delimpaltidou¹, Xakkan Metzit¹, Eleni Kalifatidou¹, Aris Konstantinidis², Konstantinos Skamnos¹

¹“Sismanogleio” General Hospital of Komotini / Ophthalmology Clinic

² University Hospital of Alexandroupolis / Ophthalmology Clinic

Objective: To analyze and evaluate the “anterior chamber chopping” phacoemulsification technique and to compare the intraoperative and post-op results , in comparison with “Divide and Conquer” or “Stop and Chop”. In addition to highlight the advantages it offers in the context of a small hospital.

Methods: After evaluation, about 280 phaco cases, which had similar factors were selected. The factors in consideration were patient age, general health condition and nucleus hardness grading. For these cases the surgeon used the “Stellaris Elite Phaco System”, which uses a Venturi pump. In all cases a manual continuous curvilinear capsulorrhesis of a relatively large diameter (6,0mm) was performed, in order to achieve flexibility in the choice of the phaco technique. It was important to achieve a proper hydrodissection but also to proceed to nucleus hydrodelineation in order to raise the central nucleus into the anterior chamber so we can chop and aspirate it. No Dispersive viscoelastic was used to protect the endothelium as the ultrasound usage was relatively low and that would increase the ultrasound times. We named the technique “ballerina- like” chop, because as the nucleus gets aspirated by the phaco probe it rotates vertically, like a ballerina.

Results: To calculate the results we recorded post-op complications, clinical presentation, corneal healing time (reduction of edema), and BCVA (1st , 7th , 30th post op day). Corneal endothelial cell density wasn't performed because our clinic has no specular microscope. The results were gathered, analyzed and compared with the assistance of spss. A statistical significance between the two groups of different phaco methods was found, in relation with both the intraoperative and post operative course of the patients. In brunescence nuclei , “ballerina- like” anterior chamber chopping was found to be safer, as less incidents of posterior capsule rupture, less effective phaco time (EPT) and lower rates of 1st post op day corneal edema were recorded. The BCVA at 30 days presented small differences in cases in which complications didn't occur, independently of the phaco method used.

Conclusions: The use of “anterior chamber chopping” in brunescence cataract is an extremely effective and safe phaco method that has low complication rates and shorter corneal healing time, resulting in faster BCVA restoration.

FP39.

EYHANCE LENS, OUR CLINIC'S EXPERIENCE

Eustratia Amaxilati¹, Ypatia Nachi¹, Maria Chatelou¹, Despoina Delimpaltidou¹, Xakkan Metzit¹, Eleni Kalifatidou¹,

Aris Konstantinidis², Konstantinos Skamnos¹

¹“Sismanogleio” General Hospital of Komotini / Ophthalmology Clinic

² University Hospital of Alexandroupolis / Ophthalmology Clinic

Objective: To highlight the use of Eyhance IOL, to evaluate the immediate and long-term postoperative outcomes as well as the intraoperative challenges that may arise.

Methods: In our clinic the previous year 18 TECNIS Eyhance lenses were implanted by the same surgeon. After grading and evaluation, all surgery cases were found similar regarding: patient age, general health condition and nucleus hardness grading. The median age was 67,8 years and all cataract operations were performed using the Stellaris phacoemulsification platform, which has a venturi pump. The phaco technique which was used is phacochop, the average nucleus hardness grade was 2+. To calculate the results we recorded the UCVA (1st , 7th , 30th post op day) for distant and intermediate vision. Corneal clarity is taken into account in addition with possible retinal diseases when evaluating the results.

Results: TECNIS Eyhance is a premium EDOF lens (Extended Depth of Focus). The intraoperative lens insertion is no different from that of the classic single-focus TECNIS. In terms of long-sightedness 16/18 of the eyes had UCVA grading 8/10 or better, 30 days after surgery. UCVA at an arm's length distance was 7/10 or better. Regarding the effects of dysphotopsia no patient complaints of halos or glare were made, while 2/18 eyes presented mild starburst effects. Compared to conventional monofocal lenses, a statistically significant improvement in intermediate vision was observed without any significant difference in patients' distant vision. The dysphotopic effects - starburst in 2 cases as mentioned- showed improvement during the 3-month postoperative examination.

Conclusions: The use of EDOF intraocular lenses, especially in patients with a demanding for intermediate vision lifestyle, brings excellent results with minimal disadvantages for the patient and also easy intraoperative behavior for the experienced surgeon.

FP40.

GENE THERAPY OF A PATIENT WITH LEBER'S HEREDITARY OPTIC NEUROPATHY

Georgios Karastatiras^{1,2}, Denize Atan¹, Rani Sebastian¹, Andrex Lux¹

¹ Bristol Eye Hospital, Bristol and Weston University Hospitals NHS Foundation Trust

² Athens Naval Hospital

Purpose: To present an interesting case of a patient who participated in the gene therapy for Leber's Hereditary Optic Neuropathy.

Method: A retrospective case report of an 18-year-old University student who went to his optician complaining of progressively blurred vision of both eyes over the previous months. Visual acuity RE 6/60, LE 6/48, not improving with glasses (RE +2.00 sph, LE +0.50 sph). He had no past ocular or medical history and was not taking any medication. There was a family history of glaucoma and ‘optic neuritis’ (his maternal great grandmother) and two maternal cousins were visually impaired from childhood. On examination, he had normal colour vision and there was no RAPD. He did have central scotomata detected by Amsler grid. Fundus examination and autofluorescence imaging were unremarkable.

Results: The results of blood tests were normal. At the next visit his visual acuities were further reduced, RE 2/60, LE 6/60. His colour vision was RE 7/17 and LE 8/17. OCT imaging showed thinning of the inner retina in the macular region. The electrodiagnostic test results were suggesting the patient had bilateral optic neuropathy. Molecular genetic analysis showed he was homoplasmic for the m.11778G>A mutation (p.Arg340His) in the ND4 gene found in mitochondrial DNA. The patient was enrolled in the GenSight REVERSE clinical trial. After treatment, his visual acuities stabilised at RE 2/60 and LE 4/60; his central visual field improved slightly.

Conclusions: Gene therapy is an alternative treatment in patients with Leber's hereditary optic neuropathy with encouraging results in stabilising the vision.

FREE PAPERS

FP41.

PERMANENT VISUAL LOSS CAUSED BY A JUNK FOOD DIET

Georgios Karastatiras^{1,2}, Rhys Harrison¹, Vicki Warburton¹, Andrex Lux¹, Denize Atan¹

1 Bristol Eye Hospital, University Hospitals Bristol and Weston NHS Foundation Trust

2 Athens Naval Hospital

Purpose: To alert ophthalmologists of the visual complications of a diet restricted to "junk food".

Method: A retrospective case report of 14-year-old boy who initially presented with tiredness. He was a "fussy eater" but was otherwise well and took no medications. Blood tests detected macrocytic anemia and low vitamin B12. He was treated with vitamin B12 injections and dietary advice. At age 15 years, he developed sensorineural hearing loss. (MRI) was normal. Shortly afterward, he developed vision symptoms. Slit lamp examination was normal. No cause was found. He had 2 years of progressive vision loss, and at age 17 Visual acuity was 20/200 bilaterally. Colour vision was 8/17 with either eye. Pupil responses and slit-lamp examination were normal. He had bilateral central visual field defects and loss of retinal nerve fibers. He had brisk reflexes, but normal neurologic examination. Electrodiagnostics test were consistent with optic neuropathy. Gad-MRI was normal. Results of genetic tests for Leber's hereditary optic neuropathy were negative.

Results: Blood tests showed persistent macrocytosis. Homocysteine and methylmalonic acid levels were elevated, indicating functional vitamin B12 deficiency. He denied use of alcohol, tobacco, or drugs. Had normal (BMI) (22 kg/m²). He had low copper and selenium levels, a high zinc level, and markedly reduced vitamin D level and bone mineral density. He was prescribed nutritional supplements that corrected his deficiencies. His visual acuities stabilized but did not improve.

Conclusions: Nutritional optic neuropathy is potentially reversible if caught early. If left untreated, it leads to permanent visual loss.

FP42.

THE USE OF IRIS RINGS AT THE OPHTHALMOLOGY CLINIC OF KOMOTINI

Konstantinos Skamnios¹, Ypatia Nachi¹, Maria Chatelou¹, Eustratia Amaxilati¹, Despoina Delimpalntidou¹, Xakkan Metzit¹, Eleni Kalifatidou¹, Aris Konstantinidis²

1 "Sismanogleio" General Hospital of Komotini / Ophthalmology Clinic

2 University Hospital of Alexandroupolis / Ophthalmology Clinic

Objective: To highlight the use of Malyugin, I Ring and Oasis iris dilators in cataract surgery in cases with a narrow pupil.

Methods: The use of iris expanders becomes a great aid for every cataract surgeon. Malyugin Ring is one of the safest and most easily manageable iris rings. The insertion of the ring is achieved through the main incision after the placement of viscoelastic. The ring is extracted from the injector about 2mm and the distal ring loop is placed at the peripheral iris . Then the ring is advanced carefully, in order to place the two side loops into the iris and we slowly withdraw the injector. The proximal loop is placed using a Lester hook or a similar hook. The Malyugin ring widens the pupil to 6mm, providing adequate mechanical mydriasis, avoiding iris injury and keeping the iris periphery away from the manipulations performed during surgery. The insertion technique of the I Ring and Oasis rings differs slightly, firstly the ring is inserted into the anterior chamber and after the injector's removal it is placed in the iris.

Results: The ring implantation must be achieved carefully and according to the manufacturer's instructions in order to prevent any complications (iris prolapse and bleeding, iridodialysis, ranterior capsule rupture, corneal endothelium, postoperative healing difficulty, local inflammatory reaction, hypotony, endophthalmitis.) Careful selection of the ring type, depending on the stage of the surgery, the intraoperative difficulty and the phacoemulsification technique that will be used, is particularly important.

Conclusions: Iris rings make cataract surgery easier for patients with miosis or intraoperative floppy iris syndrome. However, the use of the ring should be done with attention by the surgeon, in order to avoid any possible complications.

FP43.

THE TRANSITION FROM "INFINITY'S" ULTRACHOPPER TO "STELLARIS" PHACOCHOP

Ypatia Nachi¹, Maria Chatelou¹, Eustratia Amaxilati¹, Despoina Delimpalntidou¹, Xakkan Metzit¹, Eleni Kalifatidou¹, Aris Konstantinidis², Konstantinos Skamnios¹

1 "Sismanogleio" General Hospital of Komotini / Ophthalmology Clinic

2 University Hospital of Alexandroupolis / Ophthalmology Clinic

Objective: We aim to compare the above two phaco methods, to analyze the benefits and limitations, based on evidence from our everyday clinical practice in the context of small hospital's ophthalmology clinic.

Methods: A comparison between 85 cataract cases in which the "ultrachopper" was used and 347 cases in which "phacochop" was used occurred. All cases after grading and evaluation were found to have similar factors: patient age, general health condition and nucleus hardness grading. The "ultrachopper" was used with the "Infinity phaco machine", which has a peristaltic pump, on the other hand "phacochop" was performed with the "Stellaris phaco machine" which has a venturi pump.

Results: To calculate the results we recorded post-op complications, clinical presentation, corneal healing time (reduction of edema), and BCVA (1st , 7th , 30th post op day). Corneal endothelial cell density wasn't performed because our clinic has no specular microscope. Using "ultrachopper" allows us to perform cracking in dense nuclei easily and safely using both mechanical force and ultrasound. The "ultrachopper"s knife shape prevents from intraoperative iris injury, capsulorrhesis or anterior capsule tear and doesn't put pressure on the Zonule of Zinn. Performing "phacochop" is more demanding, it has a steeper learning curve but also presents the advantage of ultrasound usage saving. After comparing the results with spss it becomes clear that all cases performed by an experienced surgeon show small differences in intraoperative and post-op course (similar 30th day BCVA in uncomplicated eyes.) no matter the phaco method and operation system used. Nevertheless, there is a notable difference in total surgery time and (EPT) effective phaco time, as phacochop and venturi pump in general help reduce them.

Conclusions: Using the ultrachopper is an extremely effective and safe, easier phacochop alternative. On the one hand it provides similar results but on the other hand it lacks the speed and ultrasound savings that phacochop brings forth.

VIDEO PRESENTATIONS

V01.

3 ATTEMPTS TO IMPLANT AN IOL

Michael Karampelas

Ippokrateion Athens General Hospital

Aim: To present a video demonstrating an uneventful case of phacoemulsification in which there was a problem during implantation of an one-piece acrylic lens.

Method: Edited video

Results: The present video demonstrates the implantation of an one-piece acrylic foldable lens (enVista-Bausch&Lomb) after 3 attempts. During the 1st attempt, the injector plunger was rotating as it was advancing thus crashing the IOL. After inspection it was noted that the top cap of the plunger was unscrewed. After properly screwing the top cap, there was a 2nd attempt to implant the IOL but the leading haptic was broken and disengaged from the optic. The broken haptic was then removed from the anterior chamber and a new IOL was loaded in the injector and successfully implanted.

Conclusions: This video demonstrates a problem during IOL implantation via an injector and aims to inform anterior segment surgeons about the possibility of this particular complication.

V02.

IMPLANTING THE FIRST AHMED CLEAR PATH 350 IN GREECE IN A COMPLEX CASE WITH UVEITIC GLAUCOMA, ANGLE CLOSURE WITH PHACOMORPHIC ELEMENT AND PREVIOUS LASIK CORNEAL SURGERY

Dr Dimitrios Besinis^{1,2}, Georgios Tsolkas¹

1 Glaucoma Department, Iapati Eye Clinic, Athens, Greece

2 Dimitrios P. Besinis Private Practice, Nea Smyrni, Greece

Treating uveitic glaucoma can be a challenge and often requires surgery for IOP control. Traditional glaucoma surgery for the treatment of uveitic glaucoma has been described including trabeculectomy and tube surgery. In this video we present a complex case with uveitic glaucoma. The patient has undergone LASIK refractive surgery two decades ago and the anterior chamber was shallow due to phacomorphic element leading to angle closure. A combined phaco+tube surgery was decided, implanting the first Ahmed Clear path 350 in Greece. The new tube from New World Medical is a shunt like the Baerveldt tube with some advantages compared to previous glaucoma drainage devices.

V03.

CHRONIC WATERY EYE IN A PATIENT WITH PREVIOUS PHACOTRAB: IS IT TIME TO REVISE?

Dr Dimitrios Besinis^{1,2}, Dr Georgios Tsolkas¹

1 Glaucoma Department, Iapanti Eye Clinic, Athens, Greece

2 Dimitrios P. Besinis Private Practice, Nea Smyrni, Greece

Trabeculectomy remains the gold standard in glaucoma surgery with high success rate. Nevertheless depending on the surgeon's technique and the use of anti-metabolites like mitomycin C, various complications have been described either in the early post-operative period or many weeks or months later. Combining it with phacomulsification has been shown to be less successful in IOP lowering and increases the rate of complications. We present a case of a patient with chronic watery eye following combined trabeculectomy and phacomulsification surgery (phacotrab) operated elsewhere. Upon examination a brisk bleb leak was identified and surgery was planned. Treatment with bleb excision, conjunctival advancement and potential use of pericardium graft has been shown to be effective in dealing with such conditions and maintaining the function of the trabeculectomy. In this video the technique is thoroughly described and the final outcome is shown.

V04.

AN INTERESTING CASE OF EXTRACAPSULAR CATARACT EXTRACTION AFTER NEUROTROPHIC CORNEAL ULCER

Terzidou Chryssa¹, Dalianis Georgios¹, Trivli Alexandra¹, Droutsas Konstantinos²

1 Department of Ophthalmology, Konstantopoulou-Patission Gen Hptl, Athens, Greece

2 1st Department of Ophthalmology, "G. Gennimatas" Gen Hptl, National and Kapodistrian University of Athens, Athens, Greece

Purpose: To present an interesting case of extracapsular cataract extraction with central corneal clouding after a neurotrophic corneal ulcer.

Method: 55 yo man, one-eyed, psychiatric, with advanced cataract and uncontrolled glaucoma on 4 meds, practically absence of blinking due to systemic treatment, is referred to our clinic with a central neurotrophic corneal ulcer ~10mm, stromal thinning 350 µm OS and visual acuity of HM. Treatment of the corneal ulcer was done in steps where, beside topical treatment, amniotic membrane, plugs and partial tarsorrhaphy were performed. The slow course of epithelialization led to glucose testing and uncontrolled diabetes was found (HbA1c= 11.5%) which was treated and led to complete epithelialization in 3 months, with final visual acuity of CF and partial neovascularization with central clouding in the cornea. 6 months later, on indication of cataract removal, he is referred for assessment by the cornea specialist and extracapsular cataract extraction is decided due to limited visibility for phacoemulsification.

Results: The planned extracapsular removal was completed uneventfully, despite the reduced visibility. The postoperative course was unremarkable. One month later, final visual acuity was 3/10, IOP=12mmHg and the patient completely satisfied.

Conclusions: Extracapsular cataract extraction is still the procedure of choice in select cases and we should be familiar with it.

VIDEO PRESENTATIONS

V05.

THE SPIDER-LENS. AN INTERESTING CASE OF UGH SYNDROME

Terzidou Chryssa, Dalianis Georgios, Trivli Alexandra, Mastorakos Nikitas

Department of Ophthalmology, Konstantopoulou-Patission Gen Hptl, Athens, Greece

Purpose: To present an interesting case of IOL removal in suspected Uveitis-Glaucoma-Hyphema Syndrome.

Methods: 70 yo female, pseudophakic, with severe pseudoexfoliation and anterior capsule phimosis, with uncontrolled glaucoma and trabeculectomy OS 10 years ago, was referred for management. She underwent successful ab-interno bleb revision with MMC and IOP was 08mmHg without meds on 2nd week post-op. She returns 1.5 year later with IOP=24mmHg on 4 meds and unknown follow-up. She underwent a second ab-interno bleb revision and is under regular follow-up with IOP=7-10 mmHg. 9 months later, cystoid macular edema, corneal edema and IOP=13mmHg without treatment are noticed. Per os acetazolamide and col. Nepafenac were administered. 2 months later, macular edema had not fully regressed, while CCT was 707µm. Pseudophacodonesis was present and due to suspected UGH syndrome, removal of IOL was decided. The IOL-capsule complex showed vertical curving of the 4 haptics upwards, touching the posterior surface of the iris, while one haptic was outside the capsule, causing immediate trauma to the iris. Anterior vitrectomy with triamcinolone was performed and an AC-IOL was implanted.

Results: No intraoperative or postoperative complications occurred. Immediately postoperatively, the eye was quiet, IOP was controlled, with regression of macular and corneal edema.

Conclusions: There should be high degree of suspicion and decision to intervene for a successful outcome in similar cases.

V06.

PHACOEMULSIFICATION IN A PATIENT WITH NANOPHTHALMOS AND ANGLE CLOSURE GLAUCOMA

Giannoukaki Aikaterini, Giannoulakos Georgios, Giannopoulos Theodoros

1st Department of Ophthalmology, Aristotle University of Thessaloniki, AHEPA Hospital, Greece

Purpose: To present a case of phacoemulsification in a patient with nanophthalmos, cataract and angle closure glaucoma.

Methods: Herein we present the case of a 74 years old male patient presenting with nanophthalmos, cataract and angle closure glaucoma. The best corrected visual acuity BCVA of the right eye was 1/10 (+14,00sph) snellen and the BCVA of the left eye was 3/10 (+13,00sph). The intraocular pressure was 28mmHg and 14mmHg respectively despite maximal medical therapy. He had undergone laser peripheral iridotomies on both eyes. The patient underwent phacoemulsification followed by a posterior chamber intraocular lens implantation on the right eye. The axial length of the eye was 16,54mm and the power of the intraocular lens was 40D.

Results: The surgery was uncomplicated. The postoperative best corrected visual acuity was 4/10 (+3,00sph) and the intraocular pressure was within normal limits with topical antiglaucoma medication.

Conclusions: Phacoemulsification can be effective for the management of cataract and glaucoma in patients with nanophthalmos, albeit challenging.

V07.

IMPLANTATION OF HIGH-POWER INTRAOCULAR LENSES IN A PATIENT WITH NANOPHTHALMOS AND VERY LOW AXIAL LENGTH (AL <16.50MM)

Iωάννης Γιαχος¹, MD, PhD Γεώργιος Τριχώνας³, MD, PhD Σωτηρία Παλιούρα²

1Γ. Ν. Α. Γεννηματάς, Αθήνα, Ελλάδα

2 Athens Eye Care, Αθήνα, Ελλάδα

3 RetinaEyeClinic, Αθήνα, Ελλάδα

Purpose: To present the challenges in performing cataract surgery in a patient with severe nanophthalmos.

Case report: A 60-year-old woman with history of retinitis pigmentosa, bilateral amblyopia due to nanophthalmos, mature cataracts in both eyes and an epiretinal membrane (ERM) in the left eye was referred to our practice for cataract surgery in both eyes. Her best corrected visual acuity (BCVA) was 20/70 in the right eye (OD) and 20/100 in the left eye (OS) with +20.50 diopters (D) rigid gas permeable contact lenses. Optical biometry measured an axial length of 16.33 mm OD and 16.42 mm OS. We decided to use custom-made, single-piece foldable high-power hydrophilic acrylic IOLs (SOLECO IO7-FIL-611) with power 56.0 D OD and 57.5 D OS. A core vitrectomy was performed prior to the cataract extraction OU. In the right eye, the infusion port was placed 3.00 mm posterior to the limbus, which resulted in an intraoperative retinal detachment. Decision was made to continue with cataract extraction and repair the RD using 10% C3F8 gas. In the left eye, the infusion port was placed 2.00 mm posterior to the limbus without any issues and the ERM was also removed at the same sitting. Postoperative BCVA was 20/50 (with a +1.00 D sphere) OD and 20/50 (with a +0.25 sphere).

Conclusion: Phacoemulsification in patients with nanophthalmos presents various challenges even for experienced surgeons. Our patient underwent successful implantation of custom-made high-power IOLs, which represent a viable and safe alternative to piggyback lenses.

V08.

MANAGEMENT OF TRAUMATIC IRIDOPLEGIA WITH ARTIFICIAL IRIS PROSTHESIS

Mr Thomas Papathomas¹

1 Ahepa University Hospital, Thessaloniki, Greece

Purpose: To show the effectiveness of artificial iris prosthesis in the management of traumatic iridoplegia and associated photophobia.

Methods: Artificial iris prosthesis (CUSTOMFLEX® ARTIFICIALIRIS – HUMANOPTICS) was ordered after proper photography of both eyes of the patient.

Results: Artificial iris was easily injected in anterior chamber and positioned in sulcus. No intraoperative or post-operative complications were noted in the follow-up period of five months. Patient no longer complains of photophobia. The color and appearance of the artificial iris is almost identical to the fellow eye.

Conclusion: Artificial iris prosthesis is a safe and effective way to manage both photophobia and the aesthetic appearance related to traumatic iridoplegia.

VIDEO PRESENTATIONS

V09.

INTRAOPERATIVE AND POSTOPERATIVE CONSIDERATIONS FOR THE TREATMENT OF PEDIATRIC CATARACT

Pavlina Kazantzidou¹, Irene Brazitikou¹, Ioannis Tsinopoulos¹, Nikolaos Ziakas¹, Asimina Mataftsi¹

1st Οφθαλμολογική Κλινική, Τμήμα Ιατρικής, Σχολή Επιστημών Υγείας, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης, 2nd Department of Ophthalmology, School of Medicine, Aristotle University of Thessaloniki

Purpose: To present some of the special considerations for perioperative and postoperative management of cataract in toddlers.

Method: Presentation of videotaped operation of unilateral white developmental cataract on the right eye in a two-year-old boy, which was performed in our department.

Results: Biometry was performed just before surgery, under general anesthesia, with the limitations that this entails. Two 1.6mm limbal incisions were made and cohesive viscoelastic was used in all phases of surgery, for better preservation of the anterior chamber, due to the elasticity of the corneal tissue and difficulty of keeping its incisions tight. A 4.5mm-diameter anterior capsulorhexis was performed with the push-pull technique. The lens was aspirated and its cells were meticulously cleaned from the anterior capsule. A 4mm-diameter posterior capsulorhexis with the push-pull technique and anterior vitrectomy were performed, to avoid opacification of optical axis postoperatively, which is very common in children. Finally, an intraocular lens was inserted in the bag, after enlarging one of the incisions. The incisions were sutured with absorbable sutures. Postoperative follow-up was frequent and rigorous, to detect inflammation or hypertension, and to immediately begin amblyopia treatment. During the first week, despite the clear refractive media, the child was unable to focus, but with patching, managed to locate objects by the third postoperative week.

Conclusions: For pediatric cataract, surgical technique and postoperative treatment must be adapted to the special features the age entails. Surgery is only the first step in the long process of treating amblyopia and restoring vision.

V10.

MANAGEMENT OF UVEITIC CATARACT USING THE MALYUGIN RING AND IRIS RECONSTRUCTION

D.Giannoulis, D.Mikropoulos

1st University Department of Ophthalmology AHEPA Hospital

Purpose: To present the extraction of cataract with phacoemulsification, the use of Malyugin ring and our technique for the iris reconstruction.

Method: We performed phacoemulsification to a man with uveitic cataract. Due to posterior synechiae we used a Malyugin ring 6,25mm to dilate the pupil. Removing the ring after IOL insertion the iris had been damaged. We put two sutures on the iris via the cornea incisions to avoid the post op diplopia.

Results: Successful postoperative result.

Conclusions: Phacoemulsification is an effective and challenging procedure for uveitic cataract extraction.

V11.

MY FIRST DESCemet'S STRIPPING ONLY (DSO) PROCEDURE IN GREECE ON A PATIENT WITH FUCH'S ENDOTHELIAL DYSTROPHY

Dr. Konstantinos Samaras¹

1 AthensLaserSight, Athens, Greece

Purpose: To present my personal experience at the efficacy and clinical outcome of the new procedure of Descemet's Stripping Only (DSO) in treating Fuch's Endothelial Dystrophy.

Methods: A 74-year-old patient suffering from Fuch's Dystrophy underwent a Descemet's Stripping Only (DSO) procedure, 4mm in diameter, combined with Cataract extraction and IOL implantation in his right eye. The patient received treatment with topical drops of ROCK inhibitor throughout the recovery period. The visual acuity, corneal pachymetry and topography were examined postoperatively and compared with the outcomes of his left eye the underwent utDSEK for the same pathology one year before.

Results: After an initial deterioration both visual acuity and pachymetry were improved to preoperative levels and at much shorter time in comparison to visual rehabilitation after utDSEK.

Conclusions: As the relevant literature suggests so far, DSO in combination with cataract surgery seems to be a reliable alternative to endothelial transplantation in early stages of Fuch's Dystrophy.

V12.

CHALLENGES OF PENETRATING KERATOPLASTY IN A PATIENT WITH A HISTORY OF CHEMICAL BURN

Dr Ioanna Gardeli^{1,2}, Dr Christina Bovone¹, Dr Marco Pellegrini¹, Dr Konstantina Mouriki², Dr Massimo Busin¹

1 Department of Ophthalmology V.Igea Hospital/University of Ferrara, Italy

2 Cornea Department, State Ophthalmology Clinic, General Hospital of Athens G. Gennimatas, Greece

Purpose: To present the surgical challenges of penetrating keratoplasty (PK) in a patient with extensive symblepharon after chemical burn.

Setting: This case was about an 80-year-old male with a history of chemical burn in his right eye who presented to the Cornea Transplantation Department. The patient was presenting extensive symblepharon and central corneal opacity in his right eye.

Methods: In this case, B-scan and anterior segment- OCT were used. PK surgery was scheduled.

Results: The postoperative clinical course of the patient was good.

Conclusions: PK in a patient with advanced symblepharon after chemical burn is a really challenging surgery.

Financial Disclosure of all authors: No disclosure.

VIDEO PRESENTATIONS

V13.

TREATMENT OF INFECTIOUS CORNEAL PERFORATION BY USING A COMBINATION OF TENON'S PATCH GRAFT AND CONJUNCTIVAL FLAP

Christodoulaki E, Lafiontatis N, Korobilia A, Mavrikakis E, Rallis K.
«G.Gennimatas» Hospital, Ophthalmology Department, Cornea Unit

Aim: To present a case of large corneal perforation and athalamia caused by microbial keratitis, which has been treated surgically by using a combination of autologous tenon's patch graft and conjunctival flap (tuck-in tenon patch graft and corneal hooding) in a patient's eye with permanent visual impairment.

Method: A 92-year-old female patient attended our Department with a large corneal perforation (>5mm) of her left eye due to microbial keratitis and surgical treatment was opted for. At first, corneal scrapings were prepared on the appropriate culture media. An intrastromal axial incision with a bevel-up knife was performed at the defect, creating a 360-degree stromal pocket to insert the Tenon's graft. The defect size was measured and following dissection of the tenon's layer, a graft was harvested and tucked into the created pocket. The graft was additionally kept in place with two (2) butterfly corneal stitches. Following that, a conjunctival flap was developed by dissecting the conjunctiva from the eleventh to the third hour. The flap was placed above the tenon's graft, covering the whole defect and was sutured on the cornea with six (6) nylon sutures 10.0, while fibrin glue was placed beneath the flap. Broad spectrum antibiotics were administered both subconjunctivally and locally (drops).

Results: The patient's postoperative course was uneventful with normal intraocular pressure and no need for eye evisceration.

Conclusions: To our knowledge, this is the first case of microbial corneal melting with large corneal perforation, treated with a combination of autologous tenon's graft and conjunctival flap.

V14.

ENDOTHELIUM SPARRING WEDGE RESECTION FOR PELLUCID MARGINAL DEGENERATION

Dr Michael Tsatsos¹, Dr Ioannis Athanasiadis²

1 Aristotle University / Ophthalmore, Thessaloniki, Greece
2 Ophthalmore, Thessaloniki, Greece

To describe our technique used for the treatment of Pellucid Marginal Degeneration with an inferior corneal wedge resection sparing the endothelium

Aristotle University of Thessaloniki / Euromedica Thessaloniki

Traditionally Pellucid Marginal Degeneration was treated with a large diameter Penetrating Keratoplasty that extended to the limbus once scleral Contact lenses could be used or tolerated.

We perform a wedge resection of a 1mm area of inferior corneal stromal using pneumatic separation of the posterior stroma/ Descemet's membrane. The two edges are approximated using 10-0 Prolene sutures that remain in place.

A 18 and 14 D Corneal flattening was achieved in the two operated eyes respectively and the patient was able to tolerate a glasses prescription that led a BCVA of 0.7 and 0.8 ETDRS Visual acuity in the two respective eyes.

This is a novel technique describing an improvement of the already established wedge resection. Using the technique described we are able to preserve an intact endothelial layer using minimal surgical manoeuvres and hence leading to a functional visual outcome with fast rehabilitation.

V15.

CONJUNCTIVAL FLAP PROCEDURE IN A PATIENT WITH CENTRAL CORNEA PERFORATION

K.Giannoukaki, A.Mokka, D.Mikropoulos
1st University Department of Ophthalmology AHEPA Hospital

Purpose: Presentation of surgical technique for the management of cornea perforation

Method: Transposition of a thin flap of conjunctiva to cover the cornea.

Results: Successful postoperative result.

Conclusions: Conjunctival flap is a useful procedure in patients with poor candidacy for keratoplasty.

