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# **CATARACT**

## **SESSION I**



## IRIS PROSTHETIC IOL IMPLANTATION AND FOUR YEARS FOLLOW UP IN A CASE OF OLD TRAUMATIC ANIRIDIA

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I present here a 32 years old aphakic male patient with external strabismus and traumatic subtotal temporal aniridia in left eye. Visual acuity was counting fingers from 2 meters and IOP 12 mmHg in this eye. He had -18 prism diopter exophoria with a good clear cornea and open visual axis but only half intact iris in nasal.

Any pathology in posterior segment was detected in fundus and USG examination. As a first step, I performed 6 mm resection on medial rectus muscle for his external squint in January 2012 and then iris prosthetic scleral IOL implantation in October 2012. Even on the postoperative first day he was happy with his new vision and outlook. His visual acuity was 12/20 and IOP 22 mmHg.

Her came his last examination in October 2017, his visual acuity was 16/20 and IOP was 18 mmHg.

## VISUAL PERCEPTION WITH INTRAOCULAR IMPLANTS FOR LOW VISION

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**Objectives.** Most of the patients have problems in carrying conventional LVA (low vision aids). The developments in nanotechnology and computer sciences has great impact on innovations. For low vision patients there are some new intraocular lenses and intraocular telescopes. They have advantages and disadvantages.

**Materials and methods.** Intraocular lenses with special design in the central area and intraocular telescopes may be a good option for low vision patients especially with little mobility and low level of compliance.

**Results.** The problem of carrying relatively heavy LVA devices are solved with the new implants for low vision patients. The optical problems are solved to some extent. Extraocular LVA's are dependent from the distance to corneal apex. The fixation of the implants in the eye eliminates the change with the location of the LVA and with the eye movements. The resulting effect area of the implants can be foreseen to some extent. The higher illumination needs are still there with the implants, because of the magnifying effect of the implants. The use of the periferic retina for peripheral vision of the non-implanted eye may be limited by the fact that for the central and peripheral part there is a big anisoconia.

**Conclusions.** For some low vision patients the new developments in implants may be of benefit. However, the restrictions of the optical systems should be known in advance.



## TIPS AND TRICKS FOR THE MANAGEMENT OF COMPLICATED CASES WITH FEMTOSECOND LASER-ASSISTED CATARACT SURGERY

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Femtosecond laser-assisted cataract surgery (FLACS) was introduced in 2009 and has increasingly been incorporated into surgical practice. FLACS offers several advantages over conventional phacoemulsification. This novel technology continues to improve and with it our confidence in managing more complex patient indications.

We review FLACS technology and outcomes in terms of safety and efficacy in complicated cataract cases using data from the literature and our own clinical experience. We evaluate the role of FLACS in some specific situations: dislocated lens, traumatic cataract, shallow anterior chamber and posterior polar cataract.



# **CATARACT**

## **SESSION II**



## THE ADVANTAGES OF FEMTOSECOND LASER ASSISTED CATARACT SURGERY IN 3 DIFFICULT CASES

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**Objectives.** The advantages of the Femtosecond technology in difficult cataract cases is due to the precision of the laser in performing the most important steps of the surgery, specifically the capsulorhexis and nucleus fragmentation. These steps can be difficult to perform manually with maximum safety in difficult cataract cases, as in brunescant cataract associated with a small or medium pupil, intumescent cataract, traumatic cataract associated with anterior capsule fibrosis or with zonulolysis, cataracts in eyes with a small anterior chamber, pseudoexfoliative syndrome or in corneal dystrophy cases.

**Materials and methods.** We are presenting 3 difficult cataract cases in which we have performed Femtolaser assisted cataract surgery using the LenSx® Femtosecond Laser. The first case is a patient with intumescent white cataract, the second case is a patient with brunescant cataract and a medium pupil and the third case is a patient with traumatic cataract associated with fibrosis of anterior capsule and temporal zonulolysis.

**Results.** In the first 2 cases, we have obtained a round, well centered capsulorhexis, 4,9mm in size (the programmed size). In the last case, the capsulorhexis presented adhesions in the inferior half, which were easily detached using the Utrata forceps. The lens nucleus was completely fragmented using the hybrid pattern in the brunescant cataract case. In this case, the time of ultrasound use was considerably reduced compared to the fellow eye, which was operated on using standard phacoemulsification.

**Conclusions.** The Femtolaser technology, by performing with great the precision the most important steps of the surgery, specifically the capsulorhexis and the nucleus fragmentation, reduces intraoperative complications, especially in complex cataract cases.

**HIGH MYOPIA - ARTISAN PHAKIC IMPLANT - COMPLICATED CATARACT -  
SURGICAL MANAGEMENT (VIDEO)**

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We present the technique of phakic intraocular artificial lens (IOL), IOL explantation, phacoemulsification of the lens and implantation in the bag of an Posterior chamber intraocular lens, at a 25 years female who had high myopia in the past.

## **PSEUDOPHAKIA SUBLUXATION IN THE CAPSULAR BAG AND ANTERIOR CAPSULAR PHYMOSIS: SURGICAL MANAGEMENT (VIDEO)**

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We present a case of a male who was operated for cataract in the past, (phacoemulsification with intraocular artificial lens). He presented in our clinic for decreased visual acuity after a general anesthesia. At the slit lamp we saw a subluxation of the intraocular lens and the capsular bag associated with an important phymosis of the anterior capsule. It is showed the surgical management of the case.

## CONTUSIVE TRAUMATISM – TRAUMATIC CATARACT, ZONULYSIS, VITREOUS IN THE ANTERIOR CHAMBER – SURGICAL SOLUTION

SEVER SEPTIMIU STER<sup>1</sup>, OLIMPIA VICTORIA STER<sup>2</sup>, LEHAR LEVAI<sup>3</sup>, PAL BAGOSI<sup>1</sup>, MARTA CSIK<sup>1</sup>, LIVIA OLAH<sup>4</sup>

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**Objectives.** Surgical solution for a traumatic cataract with vitreous in the anterior chamber and zonulysis

**Materials and methods.** Two cases of traumatic cataract following a contusive traumatism are presented. After the traumatism they both develop traumatic cataract, zonulysis and vitreous in the anterior chamber. The chosen surgical method is presented of pars plana vitrectomy, extracapsular extraction of the lens through facoemulsification, capsular tension ring insertion and IOL insertion in the bag.

**Results.** Postoperative evolution is satisfactory, with a massive improvement of the visual acuity.

**Conclusions.** Ocular traumatisms can have different forms and sometimes satisfactory outcomes.



## COMPARISON OF THE REFRACTIVE RESULT BETWEEN INTROPERATIVE ABERROMETRY AND STANDARD BIOMETRY IN PATIENTS WITH CATARACT AND TORIC IOL IMPLANTATION

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**Purpose.** To compare the refractive result between intraoperative aberrometry and standard biometry in patients with cataract surgery and toric IOL implantation.

**Methods.** We evaluated 110 eyes – 55 eyes from 55 patients receiving toric IOL based on standard biometry and 55 eyes from 55 patients implanted with toric IOL based on intraoperative aberrometry.

**Results.** At six weeks postop, the number of eyes with refractive astigmatism less than 0.50 D was higher in the intraoperative aberrometry group than in standard biometry group (88.4% versus 75.8%) ( $p < 0.05$ ).

There was no statistically significant difference between two groups regarding the mean residual refraction six weeks postop.

Uncorrected distance visual acuity and corrected distance visual acuity were similar.

**Conclusions.** The mean residual refractive astigmatism six weeks postoperatively was similar in the two groups. The use of the intraoperative aberrometry systems increased the number of eyes with postoperative refractive astigmatism of less than 0.50 D.

## CATARACT SURGERY AND MULTIFOCAL INTRAOCULAR LENS IMPLANTATION

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**Objective.** Assessing the results of multifocal intraocular lens implantation after cataract surgery by phacoemulsification.

**Settings.** Retrospective study extended on 5 years, performed in ophthalmology department of Cluj County Hospital, on 58 patients who suffered cataract surgery by phacoemulsification followed by multifocal posterior chamber intraocular lens implantation (IOL).

**Methods.** We performed immersion biometry with Alcon UltraScan and Accutome 4 Sight devices. Phacoemulsification was performed with Alcon Infinity and Constellation devices by a 2.2 mm incision and ALSIOL 3D multifocal IOL. We analyzed the postoperative visual acuity and refraction in all patients three years after surgery.

**Results.** Postoperative distance visual acuity was higher than 0.76 in 51 patients, near visual acuity was higher than 0.7 in 47 patients. Postoperative refraction was between -0.75D and + 0.75 D in 49 patients and postoperative astigmatism was more than 0.75 in 8 patients. 7 patients asked near vision spectacles in order to improve near vision.

**Conclusion.** Cataract surgery by phacoemulsification and multifocal IOL implantation has proved to be effective for improving life quality of the patients with cataract.

**CORNEA AND  
OCULAR SURFACE  
SESSION**



## CROSS-LINKING PROCEDURES

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The presentation will take into account the types of cross-linking procedures (CXL): Epi-off CXL (protocol, complications, results), epi-on CXL (protocol, advantages, complications, results -regarding k- max, cornea stiffening), Epi-on CXL with iontophoresis (protocol, changes in K max), Transepithelial CXL (protocol, results, advantages), Avedro CXL (studies, protocol, changes in K max) and Topographical Customised Transepithelial CXL (Kannelopoulos procedure).

## PROTEOMIC CHANGES OF THE TEAR FILM IN PATIENTS WITH KERATOCONUS AND DRY EYE

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**Purpose.** To emphasize the correlation between clinical parameters and proteomic profile of tear film in patients with keratoconus and dry eye syndrome (DES).

**Methods.** 18 patients with keratoconus and dry eye symptomatology and 13 normal subjects were evaluated. We recorded values for ocular surface disease index (OSDI), Schirmer test, tear film break-up time (BUT) and level of total protein (TP), serum albumin (ALB), lactoferrin (LF), lysozyme (LYZ), interleukins (IL) - 10, 6, tumor necrosis factor (TNF)  $\alpha$ . Basal tears were collected using a capillary tube. The proteins concentrations were determined using commercial enzyme – linked immunosorbent assay (ELISA) for TP, Alb, LF, LYZ and xMAP array for IL and TNF $\alpha$ .

**Results.** Patients with keratoconus and DES present OSDI score significantly increased  $29.32 \pm 13.78$ , and BUT value significantly reduced ( $5.27 \pm 3.64$ s) compared with normal subjects  $15.77 \pm 9.99$ , respectively  $11.46 \pm 2.36$ s. Total protein level has not significant changes between groups, but serum albumin and lysozyme level are higher for keratoconus patients compared with normal ones ( $6.81 \pm 4.6$  versus  $4.32 \pm 2.53$  ng/ml, respectively  $2.58 \pm 0.02$  versus  $1.94 \pm 0.4$  ng/ml). Lactoferrin level ( $0.184 \pm 0.21$  ng/ml) was significantly reduced and expression of IL and TNF $\alpha$  expression were increased for patients with keratoconus and dry eye. We found moderate correlations between serum albumin, lactoferrin, total protein, IL-6, TNF $\alpha$  and keratoconus stadium or parameters characteristic for DES.

**Conclusions.** Proteomic tear changes create instability of tear film which is correlated with severity of keratoconus and DES.

**Acknowledgement.** This work was supported by CNCS-UEFISCDI (Romania), project code PN-III-P2-2.1-PED-2016-0187.

## OXIDATIVE STRESS MARKERS DYNAMICS IN KERATOCONUS PATIENTS' TEARS BEFORE AND AFTER CORNEAL COLLAGEN CROSSLINKING

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Keratoconus (KC) is a controverted ophthalmological disease with multifactorial etiopathogenesis. Corneal collagen crosslinking (CXL) is a therapeutic method which slows or stops disease progression. While recent studies provide consistent evidence on systemic oxidative stress in KC patients, little or no knowledge is available on the tear fluid oxidative stress markers, such as antioxidant enzymes activity or lipid peroxidation markers. Also, little is known considering the oxidative stress markers dynamics following CXL.

**Aim.** We assessed superoxide dismutase (SOD) and glutathione peroxidase (GPx) enzymatic activity and malondialdehyde (MDA) levels in KC patients' tear film before and after CXL.

**Methods.** We performed a prospective observational study and we evaluated several parameters of the oxidative stress in the tears of 20 keratoconus patients at baseline, one month and three months after CXL.

**Results.** Our results showed significantly decreased SOD activity which leads to significant lipid peroxidation boost in KC patients' tears. A significantly higher GPx enzyme activity was observed indicating a compensatory response to intense lipid peroxidation (as indicated by increased MDA levels). Following CXL, SOD activity significantly decreases and GPx activity increases even more, as compared to baseline KC levels and controls. However, the damaging effects seem to diminish at 3 months following the procedure (as indicated by the significant decrease of MDA levels).

**Conclusions.** Our study shows that although the levels of oxidative stress remain high in keratoconus, CXL leads to changes in the activity of some antioxidant system components with reducing harmful effects of the oxidative stress at the corneal level. We showed that this procedure causes a stabilization of the oxidative stress depth by locally increasing the GPx activity and reducing the MDA concentration.

## THERAPEUTIC STRATEGIES TO PROTECT THE OCULAR SURFACE

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**Objectives.** Ocular surface and tear film are the first ocular protection barrier. Ocular surface disorders can disturb any medical or surgical eye condition. The aim of this study is to present the different therapeutic methods of ocular surface protection.

**Materials and methods.** We took in our study cases of different ocular surface possibilities of treatment as follows: medical treatment with artificial tears, autologous serum, matriceal therapy, liposome therapy, regenerative therapy, antibiotic drops, corticosteroids, nonsteroidal anti-inflammatory drops; protective treatment with therapeutic contact lenses and surgical treatment with amniotic membrane transplant, tarsorrhaphy and gold weight upper lid implant.

**Results.** We show our results using different therapies. We obtained good results combining different therapies. Each ocular surface protection method was individualized according to the approached pathology.

**Conclusions.** The treatment of ocular surface is multifactorial. The combination of different medical, protetic and surgical therapies can lead to very good results of ocular surface disorders.



## VARICELLA ZOSTER EYE INFECTION: DANGEROUS AND UNRECOGNIZED... BUT TREATABLE

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**Objectives.** Human herpes viral infection is a major cause of morbidity worldwide and a frequent cause of ocular pathology – conjunctivitis, keratitis, scleritis, uveitis, optic neuritis. It is a recurrent disease and its complications may lead to blindness. The incidence of VZV is increasing worldwide for unknown reasons. Recent data demonstrate that more than 50% of patients with ocular and systemic manifestation of VZV are younger than 60 years. There are recently efficient anti-viral drugs, but often herpetic infection was unrecognized in the clinic, and treatment - delayed.

**Materials and methods.** In our series of 159 patients, diagnosed and treated for a period of 3 years, we demonstrate typical clinical signs and symptoms and emphasize on some pathognomonic characteristics of herpetic infection. At first visit in our hospital patients came after long history of unsuccessful uveitis management elsewhere (in some patients at several different clinics). A broad differential diagnosis throughout the workup was performed including detailed medical history. We observed varied clinical manifestations: epithelial keratitis (72 patients), deep keratitis (65 patients), anterior uveitis (27 patients), panuveitis (18 patients), ARN (1 patients), neuroretinitis (6 patients). Specialized imaging studies (B-Scan, OCT, FA) and documentation during the course of follow up were performed. Treatment consisted of anti-viral drugs (AVD), steroids, intraocular anti-VEGF (for patients with cystoid macular edema - CME).

**Results.** Misdiagnosis and delayed appropriate treatment with anti-viral medications was common observation. Wide use of corticosteroids had worsened the course and prognosis of herpetic infection. The phenomenon of latency and life-long coexistence with individuals with dormant HSV/VZV has caused great variety of clinical manifestations. The location and severity of the process depended mostly on immunological status of the patient, lifestyle and environmental problems. For better prognosis herpetic infections should be included in differential diagnosis of patients with all types of intraocular inflammation especially with ocular surface involvement.

**Conclusions.** Systemic antiviral drugs demonstrate beneficial effect in treatment and for the prevention of recurrences in our series of patients. HED therapy is very challenging and there is limited evidence based data on recommended management strategies. Differentiating HSV and VZV is very important for appropriate treatment. The therapeutic approach in HED depends on the clinical form and stage of the disease and includes topical and oral medications, resurfacing and surgical interventions - amniotic membrane transplantation (AMT) and keratoplasty (PKP). Recently the use of vaccines against VZV is recommended but still debated for prevention of recurrences of this potentially blinding disease associated with severe systemic involvement.

## METHODS OF CORRECTING EXTREME AMETROPIA

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**Introduction.** The refractive management of extreme ametropia is a surgical challenge even considering the progress recorded lately in the domain of phakic lenses, of the technics of corneal refractive surgery and the large availability of modern methods of functional preoperative evaluations and imaging of the anterior pole. Obtaining independence of the aerial correction or contact lenses in difficult cases of extreme ametropia demands in some situations the combination of multiple surgical technics as in Bioptics technique, which intends to overcome the limits of singular techniques and obtain a stable emetropia in complicated cases. The purpose of the paper is to present two cases, of a very high myopia and a hypermetropia, solved with the Bioptics technique.

**Materials and methods.** We bring forward the Bioptics technique of combined refractive surgery showing two clinical cases. The first case is a young patient with very high myopia, where the implant of an artificial phakic lens would not have been sufficient to completely correct the refractive error. We have decided to initially make a flap with the femtosecond laser (FS 200) and later on implant a Visian ICL of 18D. Postoperative, in the last surgical step the corneal flap was lifted and the residual 4D myopia was corrected.

The second case is a patient with high hypermetropia and hypermetropic astigmatism. The corneal flap was done with the help of the femtosecond laser (FS 200) followed by the extracapsular extraction of the lens through phacoemulsification combined with the implant of a multifocal lens of 38 D (AT- LISA, Zeiss) and the correction of the remaining refractive error by lifting the flap, one month postoperative.

**Results.** The correction of refractive errors was done through combined refractive surgery techniques both in case of forte myopia and hypermetropia with excellent postoperative results.

**Conclusions.** Bioptics represents an efficient approach in solving extreme ametropia cases and obtaining long term postoperative stable results.

## OUTCOMES OF IONTOPHORETIC CORNEAL COLLAGEN CROSSLINKING IN KERATOCONIC EYES WITH VERY THIN CORNEAS

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**Aim.** To evaluate the effectiveness and safety of iontophoretic corneal collagen crosslinking (I-CXL) in patients with keratoconus (KC) with corneal thickness values at the thinnest point (CTTP) less than 400  $\mu$  (with epithelium). We reported the evolution of visual results, refractive and topographic parameters, of intraocular pressure (IOP) as well as the endothelial cell density (ECD) 18 months after I-CXL.

**Methods.** In this clinical, retrospective study we included 18 eyes of 18 patients with progressive KC, with very thin cornea who underwent I-CXL; the follow-up period was 18 months for each patient. All patients were examined at baseline and 1, 3, 6, 12 and 18 months after the intervention.

**Results.** The uncorrected and corrected distance visual acuity (UDVA and CDVA) remained unchanged during the first 3 months postoperatively, with a significantly statistical increase at 6, 12 and 18 months. At 18 months postoperatively the mean UDVA increased by 0.6 Snellen lines. At 18 months postoperatively the mean CDVA increased by 1.1 Snellen lines. The refraction was unchanged in the first 6 months followed by a statistically significant decrease of the mean value of the sphere and that of the cylinder at the end of the follow-up period. The mean maximum keratometry (K max) value remained stable in the first 3 months postoperatively, a statistically significant decrease being evident during the 6, 12 and 18 months postoperative evaluations. There was a slight increase in CTTP beginning with the third postoperative month; this reached the threshold of statistical significance in the 12th postoperative month. The IOP and ECD remained unchanged throughout the follow-up.

**Conclusions.** Our study shows the safety and effectiveness of the iontophoretic corneal crosslinking in case of progressive keratoconus and very thin cornea.



# **RETINA**

## **SESSION I**



## EARLY CLINICAL RESULTS WITH EYEMAX MONO EXTENDED MACULAR VISION INTRAOCULAR LENS IN PATIENTS WITH ADVANCED AMD

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**Purpose.** To determine safety and visual outcomes in eyes with advanced age-related macular degeneration (AMD) implanted with a novel intraocular lens (IOL) that delivers an optimized retinal image to all macular areas within 10 degrees of retinal eccentricity.

**Methods.** This was a consecutive case series of 11 eyes of 9 patients with advanced stage AMD. Eyemax mono<sup>TM</sup> (London Eye Hospital Pharma), a single-piece, injectable, hydrophobic acrylic IOL sited in the capsular bag was implanted in all eyes. Primary outcome was safety. Secondary outcome was change in corrected distance visual acuity (CDVA) (logMAR).

**Results.** Mean age at surgery was 60 years. Mean duration of follow-up was 6 months. Causes of visual loss were geographic atrophy and macular scar due to AMD in 10 eyes, chronic central serous chorioretinopathy in one eye. No eyes had worsening of CDVA postoperatively. Perioperative complications were IOL exchange due to haptic break in two patients, and anterior capsular rupture during IOL insertion in one patient. Mean preoperative CDVA improved from 1.3 to 0.9 postoperatively, equating to an approximate Early Treatment Diabetic Retinopathy Study gain of 20 letters.

**Conclusions.** This novel IOL appears safe in the short to medium term. Improvement in postoperative CDVA exceed those observed with standard implants in advanced AMD patients.

## PARS PLANA VITRECTOMY FOR NON-DIABETIC VITREOUS HEMORRHAGE: PRELIMINARY RESULTS

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**Objectives.** Vitreous hemorrhage in a diabetic patient was the first instance in which pars plana vitrectomy (PPV) was performed and continues to be one of its commonest indications. In this study we aimed to define the outcome of PPV for non-diabetic vitreous hemorrhage.

**Materials and methods.** We conducted a retrospective study including all the consecutive patients that were vitrectomized for non-diabetic vitreous hemorrhage between January 2016 – December 2017 by the same surgeon. The following data were extracted from the medical records: age, gender, time between hemorrhage and PPV, cause of vitreous hemorrhage, recurrence, visual acuities (VA) before and one week following PPV. Functional outcome was considered positive if postoperative VA was not worse than the preoperative one. Chi square test was used to assess statistical significance if  $p < 0.05$ .

**Results.** During the above mentioned period, 36 patients were vitrectomized for non-diabetic vitreous hemorrhage. Of these, 23 were males (63.88%) and 13 (36.12%) were females, with age  $< 65$  years in 21 patients (58.33%) and  $\geq 65$  years in 15 of them (41.67%). The cause of vitreous hemorrhage was represented by: neovascularization related to branch retinal vein occlusion - 12 cases (33.33%), trauma - 12 cases (33.33%), idiopathic - 9 cases (25%), retinal breaks - 2 cases (5.55%) and age related macular degeneration - 1 case (2.77%). In 18 cases (50%) the cause was known preoperatively, whereas in 9 cases it was discovered intraoperatively. Hemorrhage recurred in 8 cases (8.33%). One week following the last vitrectomy, functional outcome was positive in 26 cases (72.22%). The only factor associated with a worse prognosis in a statistically significant manner was age  $\geq 65$  years.

**Conclusions.** Neovascularization related to branch retinal vein occlusion and trauma were the most frequent causes of non-diabetic vitreous hemorrhage in our series. Age  $\geq 65$  years was the only factor significantly associated with worse functional outcome.



## CELLOPHANE MACULOPATHY

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The Internal Limiting Membrane is the basement membrane of the Muller cells. It has 2.5 micrometers in thickness. The ILM plays an important role in the pathogenesis of vitreomacular interface disorders.

In order to peel this membrane we use different types of dyes. They are injected over the macula, staining mostly this important area.

This paper presents a patient with a thick ILM, entirely stained with Brilliant Blue, with the purpose to outline some particular cases from our practice.

## LENS LUXATION INTO THE VITREOUS HUMOR-LESS CONVENTIONAL VIEWING SYSTEM

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**Objectives.** This paper presents, by the use of videos, the case of a patient to whom during cataract surgery (phacoemulsification procedure) is noted the existence of a posterior capsular rupture with crystalline lens fragments dislocated into the vitreous. The surgery goal was consisted of phacoemulsification and foldable hydrophobic acrylic intraocular lens implant.

**Materials and methods.** The steps of the surgical intervention were: 2.2 mm incision in the clear cornea, contraincision, anterior vascular restoration, circulatory capsulorhexis, hydrodissection, hydrodelineation, divide and conquer method. At the end of the surgery, is observed the rupture of the posterior capsule with the migration of a residue of crystalline fragment and outstanding crystalline masses.

**Results.** Cataract surgery goes on with 25Ga vitrectomy, placement of the cold light source and vitrectomy infusion source. Introducing an air bubble into the anterior chamber allows us to clearly observe detail in the posterior pole and perform vitrectomy with fragments removal as seen in the film. This viewing path was chosen due to the fact that conventional viewing means were not available at that time.

**Conclusions.** We have found that bubble buildup in the viscoelastic substance, this diopter, is optically stable enough to provide a comfortable view of the posterior pole details. The intraoperative viewing field is quite small, we appreciate it at 10 degrees, but provide a clear view as long as the air bubble in the previous chamber is stable. Removal of the crystalline residue could only be achieved with the vitreotome practicing a „Chop” with the help of the light source. We consider this viewing method to be useful in cases where conventional viewing media are not available. The surgery is over with intraocular lens implant in the ciliary sulcus and postintervention good results.

## SIMILARITIES, CONTROVERSIES AND BOUNDARIES OF DIFFERENT VISION MODALITIES FOR VISION SCIENTISTS

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**Objectives.** There are new modalities of vision in the last decades. Understanding them give ways to search them. Most of the vision scientists work in only one modality of vision. The artificial vision and embedded vision with implants for blind vision is the newest in the state of art of visual modalities.

**Materials and methods.** Biologic vision, human vision, machine vision, computer vision, embedded vision and artificial vision are compared in aspects showing disparities and similarities.

**Results.** Understanding all the existing modalities of vision (biologic vision, human vision, machine vision, computer vision, embedded vision and artificial vision) gives us the boundaries of possibilities to be achieved in each vision modality. Some nanotechnological innovations use the knowledge of one or more modalities of vision, for other modalities of vision. There are also some hints about the combination of different vision modalities.

**Conclusions.** To be understood better and to be combined in different ways, all different visual modalities should be known by vision researches.

## SPECTROSCOPIC ASPECTS IN INTRAOCULAR LENS OPACIFICATION

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**Introduction.** To report the opacification of hydrophilic intraocular lenses (IOL) in myopic eyes with a history of rhegmatogenous retinal detachment. The surgical technique performed was posterior pars plana vitrectomy with intraocular silicone oil tamponade.

**Methods.** The authors analyzed three opacified intraocular lenses of three patients. All eyes had a history of myopia and rhegmatogenous retinal detachment. In all the cases pars plana vitrectomy and silicone oil tamponade was performed and we used the same type of posterior chamber hydrophilic acrylic IOL, of the same producer. Once silicone oil was extracted, patients reported gradual decrease of visual acuity. They were diagnosed with central opacification of the IOL within the pupillary area. The IOL was explanted and we implanted another IOL, restoring the visual function. This paper provides details on the surgery performed, as well as on the microscopic analysis of the explanted IOLs.

**Results.** Myopia and intraocular silicone oil tamponade are noted in all the three cases. Microscopic and spectroscopic analyses of the intraocular lenses showed a high concentration of calcium and phosphate within the opacified area.

**Conclusions.** In all the reported cases the cause of IOL opacification was calcification. This reaction may be due to silicone oil tamponade, to myopia, as well as to the disruption of the blood-aqueous barrier. Although hydrophilic IOL implants are widespread, surgeons should limit their recommendations and should take the history of intraocular silicone oil tamponade into consideration.

# **RETINA**

## **SESSION II**



## MACULAR HOLE TREATED BY INVERTED FLAP TECHNIQUE

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The anatomical and functional results for a consecutive serie of macular holes, using 25 G vitrectomy, inverted flap of the Internal limiting membrane and gas tamponade, are presented.

## SAFETY, EFFICACY AND THERAPEUTIC EFFECTS OF INTRAVITREAL TRIAMCINOLONE ACETONIDE IN DIABETIC AND NON-DIABETIC MACULAR EDEMA: A PILOT STUDY

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**Introduction.** Whether it defines a complication of diabetes or the final pathway in the natural history of vascular pathologies involving the retina, macular edema represents a frequent encounter in everyday ophthalmological practice, that elicits unfortunate visual outcomes, leading to long-term, permanent changes of the retinal morphology. The aim of this study is to survey the input of intravitreal triamcinolone acetonide (monotherapy or combined anti VEGF therapy) in the functional and anatomical rehabilitation of the retina.

**Material and methods.** The effectiveness of intravitreal triamcinolone acetonide was assessed in a retrospective study, that entailed a number of 10 patients, respectively 14 eyes, with previous positive diagnosis of diabetic and non-diabetic macular edema, who were admitted to the Department of Ophthalmology, in Cluj-Napoca Emergency County Hospital. The time lapse of the study was January 2017- January 2018. Previous intravitreal injections with anti-VEGF agents were noted. Visual acuity and retinal morphology (quantitative and qualitative) on Heidelberg Spectral Domain Optical Coherence Tomography (SD-OCT) were investigated.

**Results.** Preliminary results are listed as it follows: the average age at the time of triamcinolone acetonide administration was 60,8 years of age, while gender distribution consisted of 6 male (60%) and 4 (40%) female patients. The mean number of injections per eye was 1.3, while midpoint follow up evaluation was 6.3 weeks. Median central macular thickness prior to steroid therapy was 484 microns, compared to a median of 318.4 microns subsequently to intravitreal delivery of triamcinolone acetonide formulation. Visual acuity analysis demonstrated improvement in 4 of the cases, no functional response in 3 of the cases, and mild decrease in 3 of the reviewed patients.

**Conclusion.** The intravitreal route of administration of triamcinolone alone or as an auxilliary therapy to anti-VEGF agents renders good anatomical outcomes in patients with both diabetic and non-diabetic macular edema. However, further prospective studies, including a larger number of subjects are required in order to outline specific prognostic factors that might impact or alter the remodeling of the anatomical and visual function.



## RETINOPATHY OF PREMATUREITY VERSUS ISCHEMIC RETINOPATHIES IN ADULT: PRACTICAL IMPACT

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**Objectives.** This study has two objectives: to outline the features of retinal ischemia in retinopathy of prematurity (ROP) as opposed to ischemic retinopathies in adult; to highlight the different approach in these conditions.

**Materials and methods.** Two groups of patients treated during the last 2 years (2016 and 2017) were composed and analyzed retrospectively: ROP and retinal ischemic diseases in adults (diabetic retinopathy, branch retinal vein occlusion). The following data were extracted: the time frame between diagnosis and treatment, type of treatment (bevacizumab injections, laser or both), number of treatments, results. Bevacizumab dose was 0.025 ml /0.625 mg / eye in prematures and 0.05 ml /1.25 mg/ eye in adults. Laser was completed in one session in prematures and in 2 – 4 sessions in adults. Outcome was considered positive if treatment stopped the progression of the disease towards complications.

**Results.** Within the ROP group (10 cases with aggressive posterior-ROP and 5 cases with classic ROP), treatment was carried out within 24 hours from diagnosis. Within the adults group, treatment was initiated between one week and 3 months from diagnosis. All 10 aggressive posterior-ROP cases were treated by intravitreal bevacizumab injections. One injection stopped the progression of the disease in 15 of the 20 eyes, whereas 5 eyes required supplemental treatment: laser (3 eyes) and intravitreal bevacizumab (2 eyes), with good outcome in 4 eyes. The 5 cases with classic ROP were treated by laser photocoagulation with positive outcome. The 50 ischemic retinopathies in adults were primarily treated with repeated bevacizumab injections, followed by laser photocoagulation in 28 of them. Treatment stabilized the disease in 45 cases, whereas pars plana vitrectomy was required in 5 cases (all with diabetic retinopathy).

**Conclusions.** In ROP treatment should be completed urgently, unlike the ischemic retinopathies in adults. The repeat of bevacizumab injection appears unnecessary in ROP.

## SHARING KNOWLEDGE AND EXPERIENCE IN CROSS-BORDER EDUCATION IN SOUTH EAST EUROPE

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**Objectives.** Sharing knowledge and experience has been increasingly recognized in the majority of countries. Creating models and standards of eye care technologies and procedures is an ongoing process in Europe. Ophthalmologists have to assure the life-long learning and professional development in order to provide best possible eye care. Teaching in ophthalmology is dynamic process in Black Sea countries. It is not easy to achieve harmonization because of many different languages, and culture and national health care system regulations.

**Materials and methods.** Part of ophthalmology education is development of future academic ophthalmologists. Ophthalmology without science becomes a trade. The rapid development of ophthalmology is thanks to eye research. The adoption of new developments follows the difficult path of training and upgrading. Clinical science needs ophthalmologists who are curious, who read, think and ask questions, who find satisfaction in resolving difficult diagnostic and therapeutic problems, who stay up to date with publications and innovations, and want to be part of the global ophthalmic community. Empathy to patients and emotional motivation are important aspects of learning.

**Results.** Young ophthalmologists interested in science and research should start early, during their training. They should read magazines, publications, follow innovations in treatment and technology, participate in conferences, symposia, and be actively involved in clinical conferences and discussions. They can start with presentation of a clinical case, literature review or collection of several patients with interesting, rare disease. If a trainee has a good research idea, a senior fellow with clinical and scientific experience will help develop it. Besides satisfying the scientific curiosity, academic experience has important benefits for career advancement. The experience of participation in research is extremely valuable – receiving this additional knowledge and experience would not have been possible otherwise. Participation in scientific research will definitely help young professionals to offer better patients' care.

**Conclusions.** Cross border education will overcome significant differences in teaching and academic standards through collaboration between teaching centers through Black Sea region.

## A-VEGF THERAPY WITH AFLIBERCEPT® AGE-RELATED MACULAR DEGENERATION, THE WET FORM, WITH RESISTANCE TO RANIBIZUMAB®

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**Objectives.** To study the effectiveness of aflibercept in the treatment of wet forms of age-related macular degeneration in patients with developed resistance to ranibizumab after repeated intravitreal injections.

**Materials and methods.** The group studied comprised eight patients with wet form age-related macular degeneration (ARMD). Within 5 years, they are repeatedly, more than 20 times, received anti-VEGF treatment, intravitreal ranibizumab injection. In the last year, all patients had no exudative process in the macular zone (MZ), even under monthly injections [1,2]. There was a significant decrease in the quality of vision. In 2017, patients of this group were made intravitreal aflibercept injections as a monthly loading dose [3]. All patients underwent visual acuity testing, ophthalmoscopy, spectral domain optical coherence tomography of the macular zone.

**Results.** In the studied patients under multiple, more than 20 times, ranibizumab injections, we have established developing resistance of retinal edema to Ranibizumab, up to the complete absence of response to this pharmaceutical product. All patients underwent intravitreal aflibercept injections (2 mg). After loading dose of intravitreal aflibercept injections, in all patients underwent complete resorption of the subretinal fluid with the adherence of the neuro- and pigment epithelium. Subjectively, according to visometry all patients had improvement in their visual acuity.

**Conclusions.** During multiple ranibizumab injections with the wet form of age-related macular degeneration, developing resistance of retinal edema to Ranibizumab. While intravitreal aflibercept injections, in such patients, there is a pronounced positive dynamics with complete resorption of the subretinal fluid and improved visual acuity in the background of loading injections.



**GLAUCOMA, STRABISMUS AND  
EXTERNAL STRUCTURES OF  
THE EYE  
SESSION**



## FILTRATIVE SURGERY OF CONGENITAL GLAUCOMA ASSOCIATED WITH STURGE-WEBER-KRABBE SYNDROME

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**Objectives.** The main and serious surgery complication in congenital glaucoma (CG) associated with Sturge-Weber-Krabbe syndrome (SWKS) is hemorrhage. Elaborated technique – viscosinusotrabeculotomy allows to avoid it.

**Materials and methods.** 18 children with SWKS at age 2 mo/o – 17 y/o ( $63.4 \pm 52.7$  mo/o) were under supervision, among them 8 children at age 2 mo/o – 12 mo/o ( $5.4 \pm 3.6$  mo/o). Bilateral nevus flammeus was in 6 patients, unilateral – 12. CG diagnosed at 14 children (17 eyes): 3 – bilateral, 11 – unilateral. Conjunctival and episcleral hemangiomas were visible in all glaucomatous eyes, choroid angioma – 6 patients. Initial intraocular pressure (IOP), axial length and anterior chamber depth were following:  $31.2 \pm 4.5$  (range 24-45) mm Hg,  $22.7 \pm 1.7$  (range 19.7-25.8) mm,  $3.8 \pm 0.45$  (range 2.4-4.6) mm accordingly. Gonioscopy detected anterior chamber anomalies with vascularization. Viscosinusotrabeculotomy (dispersive viscoelastic, containing hyaluronic acid, applied during sinusotrabeculotomy into the anterior chamber, between scleral flaps, sclera and conjunctiva) was performed on 9 eyes in 9 children. Vessel-strengthening and haemostatic preparations were used in preop. Conjunctival and episcleral hemangiomas we coagulated during operation.

**Results.** 4 eyes during operations had hemorrhage from iridocorneal angle – additional portion of viscoelastic stopped the bleeding. Postop hyphema detected at 3 cases and eliminated under conservative treatment. IOP reduced to normal in all cases – mean  $18.4 \pm 1.6$  (range 16.0 – 21.0) mm Hg.

**Conclusions.** Viscosinusotrabeculotomy – effective method of CG filtrative surgery in complicated cases, such as SWKS.

## THE DIFFICULTY OF TREATING A SECONDARY GLAUCOMA IN A SCLERODERMA PATIENT

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Certain ocular anomalies specific to glaucoma have been associated particularly with scleroderma, in addition to other ocular pathological manifestations.

In generalized scleroderma, it is considered that vasospasm or the Raynaud phenomenon also affects the optic disc, a mechanism which is implied in the pathogenesis of glaucoma, besides ocular hypertension.

We report the case of a 51 years old female patient, previously diagnosed with scleroderma and vasculitis, who presents a steroid-induced glaucoma, poorly controlled, to whom the surgical interventions required some technical particularities. Although postoperative complications arose, we managed to cease the glaucomatous progression.

The prognosis of this case is unfortunately guarded, due to the advanced stage of irreversible damage to the nerve fiber layer of the optic disc, the permanent necessity of systemic corticosteroid treatment and the future possible vascular decompensations.



## GLAUCOMA - NEW REGULATIONS TRENDING?

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**Objectives.** Glaucoma defines an optic neuropathy, with inconclusive data regarding its etiology. At times, the diagnostic approach is very challenging, since there are no pathognomonic signs for the disease. However, the recent development of eye examination devices renders a more objective and accurate evaluation of the retinal layers damage and optic nerve degeneration. Consequently, optical coherence tomography (OCT) provides a cross-sectional analysis of the retinal nerve fiber layer, ganglion cell complex, optic nerve head, and choroidal vascularization, which is a valuable diagnostic tool and facilitates a non-invasive, yet thorough inquiry on natural history of the disease. It is well known that the limits of the optic nerve head marked by the physician could be different by that described as Bruch's membrane opening on OCT. Many ophthalmologists asked question if the old regulations in glaucoma must be forgotten or not.

**Materials and methods.** In this paper we discussed the importance of new data obtained with spectral domain OCT regarding the limits of the optic nerve head, the ganglion cell complex and how this data affected the ophthalmologist's judgment. In the first part we presented theoretical data, and after that, we discussed some cases.

**Results.** This paper presents a series of cases where, in spite of the "unbiased" OCT results (spectral domain Heidelberg OCT) positive diagnosis for glaucoma was difficult to establish, since there was disparity among sequential examinations such as retinal nerve fiber layer (RNFL)- Bruch's membrane opening (BMO)- minimum rim width (BMO-MRW), as well as a lack of correlation between OCT structural changes, ophthalmoscopic findings and visual field defects.

**Conclusions.** We still have to understand the results offered by the OCT. The physician's clinical judgment is still the base of the diagnosis.

## TRANS-SCLERAL DIODE LASER CYCLOPHOTOCOAGULATION IN EYES WITH GOOD VISION

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**Objectives.** Trans-scleral diode laser cyclophotocoagulation (TSCPC) is a well-known method of treatment for advanced and refractory glaucoma, but it is not used routinely in eyes with good vision. This prospective study was conducted to evaluate the efficacy and safety of TSCPC in eyes with refractory glaucoma and best corrected visual acuity (BCVA) better than 0.3.

**Materials and methods.** This prospective interventional case series included 17 eyes with refractory glaucoma of 17 consecutive patients treated with TSCPC. BCVA varied from 0,3 to 0,5; mean IOP prior to procedure was  $40 \pm 12$  mm Hg. The 810 nm infrared diode laser was delivered at 1200 mW for 4 seconds over  $270^\circ$ . The power was increased in 150 mW increments until an audible “pop” is heard, followed by a decrease of 150 mW to complete the treatment. A reduction in the number of antiglaucoma drops (AGD) and an IOP of 11-21 mm Hg at the last follow-up visit was defined as success. Patients were followed at baseline, month 1, 3 and 6 after the TSCPC.

**Results.** A mean of 1.3 treatments were given per eye, with 5 eyes (29%) requiring retreatment at the 2nd month of follow up. Mean IOP decreased to  $23.5 \pm 5.0$  mmHg at 1 week,  $20.0 \pm 6.2$  mm Hg at 1 month,  $19.7 \pm 6.4$  mmHg,  $18.2 \pm 5.7$  mmHg at 6 month. The overall success rate was 83%. AGD were reduced from  $2.0 \pm 1.0$  at baseline to  $1.1 \pm 1.2$  at 1 month, to  $1.7 \pm 1.0$  at 3 months and to  $2.7 \pm 1.7$  at 6 months follow-up. No patient had hypotonia. TSCPC procedure failed in 2 patients with neovascular refractory glaucoma.

**Conclusions.** 1. This study suggests a role of TSCPC as an effective, safe and rapid method of treatment in patients with refractory glaucoma with good vision over a 6-month period. 2. IOP becomes stably reduced only by the 3rd month after the TSCPC. 3. Studies with longer follow-up and larger sample size are needed to evaluate a long-term efficacy of TSCPC procedure.

## **BILATERAL SIMULTANEOUS ACUTE ANGLE CLOSURE ATTACK TRIGGERED BY AN OVER-THE-COUNTER FLU MEDICATION**

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Most of the rare bilateral acute angle closure (AAC) cases are precipitated by systemic factors, such as drug intake, snake bite or general anaesthesia. We present a case of simultaneous bilateral AAC in a middle-aged male, precipitated by the use of medication for flu, containing an alpha-1 adrenergic receptor agonist and an anticholinergic agent. In our case, axial length was shorter, anterior chamber depth was narrower, and the lens was thicker than normal, including the patient within the risk group for AAC.

## SURGICAL APPROACH IN SMALL-ANGLE ESOTROPIA

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**Introduction.** The surgical management of small-angle esotropia (less than 30 PD) is fairly problematic. This concern is due to the fact that the recession of two medial rectus muscles can be excessive and subsequently lead to consecutive exotropia whereas the weakening of a single muscle may prove insufficient and thus result in a residual esotropia. It is for this reason that a comparative analysis of the outcomes of bilateral and monolateral surgery would be worthwhile.

**Material and method.** A total of 61 patients with esotropia who underwent surgery in the Ophthalmology Clinic of Cluj-Napoca were included in the study. Accordingly, bilateral medial rectus recession was performed in 34 of these cases, while only one muscle was operated on in the remaining 27 patients. In all patients the angle of deviation varied between +20 and +30PD. A few risk factors for the development of consecutive exotropia were also assessed: associated amblyopia, age, refractive status. The surgical correction consisted of either a bilateral medial rectus recession of 3.5 mm or of a single 5 mm recession.

**Results.** Following bilateral surgery, 24 patients presented an orthophoria or a residual deviation below +8PD, and additional 10 patients exhibited consecutive exotropia. The percentage of consecutive exotropia in the two muscle surgery group was higher in patients who displayed accompanying risk factors: young age, amblyopia, high hypermetropia.

In the group of patients who underwent monocular surgery, 22 cases were orthophoric or had a residual deviation below +8PD and another 5 cases revealed a residual esotropia exceeding +8+10 PD. No consecutive exotropia was found in this group.

**Conclusions.** Single muscle surgery is more appropriate for the correction of small-angle esotropia as the number of consecutive and residual deviations is lower in this group of patients. The co-existence of associated risk factors upturns the number of consecutive exotropia, this being an additional compelling reason for the election of single muscle surgery.

## RETINAL OPTICAL COHERENCE TOMOGRAPHY AS A MARKER OF INTRACRANIAL TUMORS

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**Objectives.** Optical coherence tomography (OCT) is a non-invasive high-resolution imaging technique which was suggested to be a powerful biomarker of neurodegeneration. The objective of our study is to assess the pattern of retinal OCT changes in patients with visual pathway tumors.

**Materials and methods.** A prospective clinical study was conducted and patients with single cerebral tumors with potential of compression on the visual pathway were included. Patients with multiple and/or metastatic tumors were excluded. Each patient underwent ophthalmological and neurosurgical evaluation, cranial-cerebral MRI, and ocular OCT in both eyes. The OCT parameters included circumpapillary retinal nerve fiber layer thickness (average and sectoral thickness) and retinal thickness in the macular area (average and sectoral thickness).

**Results.** Fifty patients were investigated clinically and by MRI, and 18 patients were excluded. Thirty-two patients were eligible for the study and completed the retinal OCT also. Eighteen patients had tumors with compressive potential on the optic chiasm, 11 patients had tumors close to the optic radiations, and 3 patients had tumors in the occipital lobe. A specific pattern of OCT changes was found for each localization. Regional parameters of both optic nerve and macula were altered.

**Conclusions.** Retinal OCT is a promising tool in the differential diagnosis between ocular and intracranial lesions. The presence of any of the described patterns of OCT changes may represent a criterion for referral to cranial-cerebral MRI.

## CONSECUTIVE EXOTROPIA FOLLOWING ESOTROPIA SURGERY IN ADULTS

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**Objectives.** In this study the features of consecutive exotropia surgical treatment by using different surgical techniques are presented.

**Materials and methods.** This study included 34 patients, aged 21 to 47 years (mean 27.9), who underwent medial rectus muscle advancement alone or in combination with medial rectus resection and/or lateral rectus recession. The mean interval between original surgery and surgery for consecutive exotropia was 8.5 years (range: 5.5 years to 14 years). Most of patients had 2 and more prior surgeries (73.5%) sold by an adduction deficit (47.06%).

**Results.** The overall mean preoperative exodeviation was  $35.12 \pm 10.13$  PD. Satisfactory alignment (within 10 PD of orthophoria) was achieved in 20 patients (58.8%) at 10 days after surgery and 24 patients (70.5%) at final 6-month follow-up. The most common surgical procedures were unilateral MR advancement and LR recession—47%.

**Conclusions.** Medial rectus advancement is an effective method of surgical treatment, especially in cases with adduction limitation, but the risk of the eyelid fissure narrowing in cases of MRM advancement more than 5 mm associated with resection is present. In our opinion for reducing this risk in cases of XT with big angle of deviation, performing a smaller amount of advancement associated with recession of LRM can prevent the development of a such complication.

## MODIFIED DERMIS-FAT AUTOGRAFT FOR SUPPORTING-MOTIONAL STUMP FORMATION AT ENUCLEATION IN PEDIATRIC PATIENTS

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**Objectives.** Enucleation with primary orbital implant provides complete surgical rehabilitation and prevention the anophthalmic syndrome development. Purpose. To modify the technique of dermis-fat autograft modeling for primary supporting-motional stump formation at enucleation in pediatric patients.

**Materials and methods.** The enucleation with primary dermis-fat graft implantation using the modified technique was performed in 18 children and teen-agers aged 4-16 years. Causes of enucleation were: eyeball subatrophy as outcome of trauma and chronic uveitis (13), congenital microftalmos (5). The pre-op axial length of the removed eye varied from 13 to 19 mm (on average  $15.7 \pm 3.4$  mm). Enucleation with preliminary suturing and cutting off the extraocular muscles was performed as usual. The modification consisted in modeling the dermis-fat autograft taken from gluteal region by additional sutures applying - one circular at the equatorial zone, and two horizontal mattress sutures crosswise located at border of dermal area. After graft placing to the orbital cavity the tissues were layer-by-layer closed over the implant, a cosmetic prosthesis or conformer was placed into the conjunctival cavity.

**Results.** The modeling transforms a rather flat autograft (due to the not always sufficient fat layer in younger children) into a more spherical. Additionally, the convex anterior surface formation improves the congruence of the implant with cosmetic prosthesis, increasing it mobility. The operation and the postop period after enucleation with dermis-fat graft implantation proceeded without complications. The observation term amounted from 6 months to 4 years. Extrusion was not observed in any cases, even when, due to a lack of tissue connected with severe subatrophy or microphthalmos, the implant was not completely covered by conjunctiva. In such situations, healing proceeded with secondary epithelialization of dermis area.

**Conclusions.** The use of a dermis-fat autograft in pediatric patients give the possibility to exclude the rejection reaction and implant extrusion, convenience and reliability of extraocular muscles fixation, opportunity of adequate and stable restoration of the orbital tissues volume. The proposed graft modeling provides it more spherical shape, suitable for subsequent prosthetics.

## INTUBATION OF THE LACRIMAL DUCTS

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**Introduction.** Lacrimal ducts consisting of lacrimal points, tubers lacrimal, lacrimal canaliculi, lacrimal sac and naso-lachrymal channel, can be congenital or acquired obstructed.

The aim of this study is to analyse when, how and with what we perform lacrimal ducts intubation.

**Material and method.** We took in the study a number of 51 eyes, 42 patients when mechanical desobstruction failed and need intubation (24%). We used different methods for intubation lacrimal ducts related with the place of obstruction:

- In the obstruction of the lacrimal points we use punctum plug epiphora, 10 patients, 19 eyes.
- In the obstruction of naso-lacrimal duct we performed:
  - monocanicular intubation, Masterka stent 9 eyes.
  - bicanicular intubation, Ritleng probe procedure-23 eyes.

**Results and discussion.** Intervention in the case of congenital obstruction was made as late as possible because the best therapeutic option in children less than 1 year is „wait and see”.

In intubation of lacrimal ducts we have very good results.

There were two unsuccessful cases, a 68 years old patient with Ritleng bicanicular intubation and a patient with bilateral punctum plug epiphora intubation.

The intubation of the lacrimal ducts must be done as soon is possible in case of failure mechanical desobstruction.

**Conclusions.** Intubation of lacrimal ducts gives good results in case of failure of mechanical desobstruction.

The intubation must be done as soon is possible.



# **RESIDENTS SESSION**



## PHACO TABOOS FOR BEGINNERS

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**Objectives.** This presentation has the purpose of outlining the main taboos that a beginner's approach to phaco should be free of.

**Materials and methods.** This paper reviews different mistakes and struggles of many coordinators during the residency program in Romania, from observation of many surgery procedures on YouTube and from discussing with surgeons worldwide on specialty forums.

**Results.** By applying these methods and ignoring the mainstream taboos, the beginners can drastically shorten their phaco learning curve.

**Conclusions.** Keep an open mind to learn every month a new phaco technique, since there are small variations coming out all the time.

**References.** Residency program in Romania Residency program in France You Tube worldwide on specialty forums from Telegram.

## OLD AND NEW CHOP TECHNIQUES IN PHACO

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**Objectives.** This presentation has the purpose of outlining the main phaco chop techniques, from which all others are derivatives.

**Materials and methods.** This paper reviews different phaco chop methods observed during residency program abroad, from observation of many surgery procedures on YouTube and from discussing with surgeons worldwide on specialty forums. Moreover, some of them are new techniques that we have developed on our own practice.

**Results.** By learning new methods, the beginners and not only them, can drastically shorten their surgery time with successful outcomes.

**Conclusions.** Keep an open mind to learn every month a new phaco technique, since there are small variations coming out all the time, which make life easier and bring diversity.

**References.** Residency program abroad from observation of many surgery procedures on YouTube from discussing with surgeons worldwide on specialty forums personal experience.

## AN OVERVIEW ON VERTICAL DEVIATIONS

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The course (...) renders an overview of all types of vertical strabismus associated or not with other ocular deviations.

The leading part of the course introduces the chapters of classification and pathogenesis of vertical strabismus. Subsequently, the clinical aspects and therapeutic principles in the main forms of vertical strabismus are being illustrated. The following are reviewed: inferior oblique muscle overaction, dissociated vertical deviation (DVD), vertical deviations in oculomotor nerve palsies, restrictive strabismus, thyroid ophthalmopathy, as well as other rather uncommon vertical misalignments that occur in high myopia (heavy eye syndrome) or iatrogenic strabismus.

## **CORNEAL TOPOGRAPHY**

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The author brings in discussion the aspects connected to the corneal topography principles, performing methods and elevation, topographic and pachymetric map explications. We present the normal aspects of the examination and also the modifications that occur in different corneal diseases (keratoconus, iatrogenic corneal ectasia, pellucida corneal dystrophy). There are also explained the sources of errors regarding corneal topography.

## VISUAL OUTCOMES AND PROGNOSTIC FACTORS FOLLOWING PARS PLANA VITRECTOMY FOR VITREOUS HEMORRHAGE IN PATIENTS WITH DIABETIC RETINOPATHY

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**Introduction.** Non-clearing vitreous hemorrhage represents a challenge for the vitreo-retinal surgeon. Visual loss is caused not only by the hemorrhagic vitreous but also by tractional retinal membranes which implies a more complicated intervention. The aim of the study was to evaluate pre-operative, intra-operative and post-operative factors which may influence visual gain after the vitrectomy for vitreous hemorrhage in patients with diabetic retinopathy.

**Material and methods.** The present retrospective study was carried out on 172 eyes of 143 consecutive patients who were admitted to Cluj-Napoca University Hospital, Ophthalmology Department between January 2012 and January 2018, patients who underwent vitrectomy for vitreous hemorrhage. The correlation between the duration of diabetes, type of hypoglycaemic therapy, pre-treatment with laser or anti-VEGF, type of vitreous tamponade and the recurrence of hemorrhages were thus evaluated.

**Results.** 74% of pre-laser treated patients and 80% of anti-VEGF receivers have experienced an improvement in visual acuity observed during their follow-up sessions. 91.8% of vitrectomized eyes required endolaser (panphotocoagulation or addition) and 30.8% fibrovascular membrane dissection. The lack of fibrovascular proliferation requiring dissection is a predictive factor for a successful visual acuity ( $p=0.0001$ ). Early preoperative or intraoperative anti-VEGF administration determine therefore satisfactory results but not statistically significant ( $p=0.1769$  and  $p=0.58$ ). Antiplatelet drugs do not seem to cause a negative effect on the intraocular bleeding ( $p=0.33$ ). The average number of vitrectomies required was 1.3/eye and the post-operative onset of neovascular glaucoma is a negative prognostic factor ( $p=0.0047$ ). 13.9% of the eyes experienced early re-bleeding and 23.2% late re-bleeding that were managed by intravitreal injections with anti-VEGF or by vitrectomy.

**Conclusion.** Pars plana vitrectomy is still the mainstay of persistent vitreous hemorrhage. Laser photocoagulation and anti-VEGF injection represent irreplaceable adjunctive tools in stabilizing severe proliferative diabetic retinopathy.

**ANTI VEGF THERAPY FOR CHOROIDAL NEOVASCULAR MEMBRANE IN  
CHOROIDAL OSTEOMA: A CASE REPORT**

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Choroidal osteoma is an uncommon benign tumor of the choroid, that mainly targets young, female adults, 20-30 years of age. Although patients rarely display symptoms, there are exceptional cases, approximately one third, when choroidal neovascularization secondary to choroidal osteoma can lead to sudden, painless visual impairment.

The following case report provides an overview on natural history, prognostic features and therapeutic management of choroidal osteoma and related choroidal neovascular membrane.



## NECROTIZING SCLERITIS ASSOCIATED WITH RELAPSING POLYCHONDritis AND COMMON VARIABLE IMMUNODEFICIENCY SYNDROME

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**Introduction.** We present a case of necrotizing scleritis associated with relapsing polychondritis and common variable immunodeficiency syndrome resolved surgically by performing scleroplasty with dura mater and conjunctival plasty taken from the other eye.

**Material and methods.** The patient was admitted for sudden visual loss in the left eye, associated with ocular pain, photophobia, conjunctival congestion and palpebral ptosis. She was diagnosed with necrotizing scleritis, pseudoptosis, secondary glaucoma and polychondritis associated with common variable immunodeficiency syndrome.

**Results.** The patient underwent medical, both general and topic, treatment and scleroplasty with dura mater and conjunctival plasty taken from the other eye. The evolution under this treatment was favorable.

**Conclusions.** Relapsing polychondritis is a multi-systemic condition characterized by repeated episodes of inflammation and deterioration of cartilage. Other affected structures may include ears, nose, laryngotracheobronchial tree and eyes. Ocular inflammation is present in 2/3 of the patients (necrotizing/non-necrotizing scleritis, anterior uveitis).

## VON HIPPEL-LINDAU SYNDROME - A CASE REPORT

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**Introduction.** Von Hippel-Lindau is a rare multi-organ disorder that usually tends to affect firstly the eye. It is characterized by retinal capillary hemangiomas, CNS hemangioblastomas and various solid and cystic visceral hamartomas and malignant neoplasms, including renal cells carcinomas and pheochromocytomas. The aim of this presentation is to present a case of a 20-year-old girl.

**Material and Methods.** The patient was admitted for sudden and painless visual loss in the left eye. She was diagnosed with proliferative vitreoretinopathy, exudative retinal detachment with multiple hemangioblastomas.

**Results.** The patient underwent photocoagulation of the vascular tumors, multiple anti-VEGF injections and posterior vitrectomy with a good preservation of the visual acuity.

**Conclusions.** The particularity of the case is the presence of a pancreatic tumor in the first place and then the ocular lesions.

## NEUROFIBROMATOSIS TYPE I WITH OCULAR INVOLVEMENT: A DESCRIPTIVE CASE

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A patient known with NFI was referred to us to document ocular findings. Apart from the classical Lisch nodules visible on slit lamp examination, using OCT imaging we found multiple choroidal nodules. The clinical context and a PubMed search helped us clarify the nature of the findings and the patient was recommended annual follow up.