Euretina
Winter Meeting

Vilnius 2020

20–21 March | Lithuania

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Dear colleagues,

For nearly five decades ophthalmological societies of three Baltic States continue to bring joint scientific meetings to deliver outstanding continuous education for eye doctors.

On behalf of the Lithuanian Ophthalmological Society I would like to welcome you to the 16th Forum Ophthalmologicum Balticum (FOB) to be held on 2019 August 23-24, in Vilnius, Lithuania.

We cordially invite you to come, meet your colleagues, learn and share experiences. FOB 2019 will focus on the most relevant topics and issues of ophthalmology, both theoretical and practical. You will be able to gain insights, exchange ideas and meet the experts and participants from different countries.

We are working hard to organize an outstanding scientific and educational meeting to facilitate the spread and exchange of knowledge, skills and attitudes, between experts, researchers, clinicians and trainees.

The industry exhibition will provide an excellent opportunity to see and test latest equipment, newest pharmaceutical developments and therapeutic approaches in ophthalmology.

I hope that you will also take some time to enjoy our social programme and some of Vilnius’ unsurpassed attractions. Both Opening Reception and Gala Dinner will be great networking events. The congress will take place in Radisson Blue Hotel Lietuva, situated on the bank of the River Neris in the centre of Vilnius, only a 10 minute walk to the UNESCO listed medieval old town.

Cordially welcome to Vilnius!

Looking forward to seeing you in August,

Vilma Jūratė Balčiūnienė
President of Lithuanian Ophthalmological Society
ORGANIZING AND SCIENTIFIC COMMITTEES

SCIENTIFIC COMMITTEE:
Rimvydas Ašoklis (Lithuania)
Ingrida Janulevičienė (Lithuania)
Lina Šiaudvytytė (Lithuania)
Dalia Žaliūnienė (Lithuania)
Reda Žemaitienė (Lithuania)

ORGANIZING COMMITTEE:
Jūratė Balčiūnienė (Lithuania)
Jolanta Bendoriienė (Lithuania)
Andrius Cimbalas (Lithuania)
Artur Klett (Estonia)
Loreta Kuzmienė (Lithuania)
Guna Laganovska (Latvia)
Daiva Šošienė (Lithuania)

ORGANIZERS:
Lithuanian Ophthalmological Society
Lithuanian University of Health Science

FORUM SECRETARIAT:

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Gedimino ave. 24, Vilnius, Lithuania
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GENERAL INFORMATION

Date: 23-24 August 2019

Forum Venue
RADISSON BLU HOTEL LIETUVA (Konstitucijos ave. 20)
Vilnius, Lithuania

Radisson Blu hotel Vilnius is a 4 star hotel for a convenient location adjacent to the city’s commercial hub and atmospheric Old Town.

Vilnius Old Town’s heady mix of European architecture can be seen from the window of your inviting Guest room at Radisson. This hotel is 8km from your flight at Vilnius International Airport, and located in the heart of the city’s financial and commercial district.
GALA DINNER

Do not miss opportunity to spend splendid evening with your old friends and colleagues during FOB2019 Gala dinner which will take place on 23rd August at Vaidilos Theater (Address: Jaksto st. 9). Evening programme will offer you charming music performance as well as a taste of Lithuanian cuisine. Join and feast with US!

Dress code: cocktail
Time: 2019.08.23 19:00
Place: Vaidilos Theater (Jaksto st. 9)
Price: 65 Eur

About VAIDILOS THEATRE

The building is located in the center of Vilnius, near Gediminas Avenue, and has a long and interesting history.

The house built in the 19th century and features the exceptional Neo-Gothic architecture typical of the style of the churches of that time. There were just a few houses at A. Jakšto Street at that time. The first inhabitant of this house was its architect M. Prozorov with his family, owning 14 rooms, and the rest of the premises were rented to the railway club, shops and apartments. Later, the hall of this historic building, the current Vaidilos Theatre, hosted meetings of intellectuals and theatrical performances, and in 1905, the famous Lithuanian play America in the Bathhouse was performed.

The building was damaged during the Second World War, but later restored. In 2015 Vaidilos Theatre was restored.
## PROGRAMME

### Friday, August 23rd

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30-10:00</td>
<td>Opening Ceremony</td>
<td>Jurate Balciuniene</td>
</tr>
<tr>
<td>9:30-9:35</td>
<td>President's welcome</td>
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<tr>
<td>9:35-9:50</td>
<td>Kavli and Warren Alpert Foundation Prize Laureate Lecture. CRISPR-Cas tools for genome editing: from bench to clinic</td>
<td>Virginijus Siksnys</td>
</tr>
<tr>
<td>10:00-11:20</td>
<td>CATARACT (MODERATORS: REDA ZEMAITYENE, GUNA LAGANOVSKA)</td>
<td></td>
</tr>
<tr>
<td>10:00-10:20</td>
<td>Complicated Situations in Cataract and Anterior Segment Surgery</td>
<td>Gerd Auffarth</td>
</tr>
<tr>
<td>10:20-10:35</td>
<td>How to protect the ocular surface during cataract surgery</td>
<td>Zbigniew Zagorski</td>
</tr>
<tr>
<td>10:35-10:45</td>
<td>First experience with femtosecond-laser assisted cataract surgery (FLACS) in LSMU Hospital Kauno klinikos</td>
<td>Dalia Zaliuniene</td>
</tr>
<tr>
<td>10:45-10:52</td>
<td>The first experience with the FLACS in the Baltic countries</td>
<td>Andrej Solomatin</td>
</tr>
<tr>
<td>10:52-10:59</td>
<td>The accuracy of intraocular lens power calculation formulas for eyes of axial length exceeding 24.5 mm</td>
<td>Wiktor Stopyra</td>
</tr>
<tr>
<td>10:59-11:06</td>
<td>A prospective, single arm, multicenter study on effectiveness and safety of the Atia Vision Modular Intraocular Lens System AVL 100 for treatment of cataract and presbyopia</td>
<td>Igor Solomatins</td>
</tr>
<tr>
<td>11:06-11:13</td>
<td>Visual function after multifocal IOL implantation</td>
<td>Indre Matuleviciute</td>
</tr>
<tr>
<td>11:13-11:20</td>
<td>Choroidal thickness maps changes following phacoemulsification in patients with age-related macular degeneration</td>
<td>Gaile Gudauskiene</td>
</tr>
<tr>
<td>11:20-11:40</td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>11:40-12:40</td>
<td>CORNEA, OCULAR SURFACE AND REFRACTIVE SURGERY (MODERATORS: DALIA ZALIUNIENE, MIKK PAUKLIN)</td>
<td></td>
</tr>
<tr>
<td>11:40-12:00</td>
<td>Principles of ocular surface reconstruction</td>
<td>Harminder Dua</td>
</tr>
<tr>
<td>12:00-12:10</td>
<td>Trends in Corneal Transplantation. Ultrathin DSAEK – an Option of Endothelial Keratoplasty</td>
<td>Reda Zemaitiene</td>
</tr>
<tr>
<td>12:17-12:24</td>
<td>Results of intracorneal ring segments implantation for patients with keratoconus</td>
<td>Lina Soceviciene CO-6</td>
</tr>
<tr>
<td>12:24-12:31</td>
<td>Comparative analysis of the levels of markers of inflammation in the tear fluid in patients with keratoconus</td>
<td>Julia Meshcheryakova CO-3</td>
</tr>
<tr>
<td>12:31-12:38</td>
<td>Corneal changes in patients with herpes simplex virus keratitis by in vivo confocal microscopy</td>
<td>Vilija Danileviciene CO-4</td>
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<tr>
<td>12:40-13:30</td>
<td><strong>ALCON SATELLITE SYMPOSIUM</strong></td>
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<tr>
<td>12:40-12:55</td>
<td>Clareon IOL – a new IOL platform and delivery system</td>
<td>Gerd U. Auffarth –</td>
</tr>
<tr>
<td>12:55-13:15</td>
<td>Clinical experience with the Clareon IOL and the AutonoMe delivery system</td>
<td>Dzianis Hlushko –</td>
</tr>
<tr>
<td>13:15-13:30</td>
<td>SYSTANE COMPLETE® - a new step towards optimal eye lubrication</td>
<td>Egle Danieliene –</td>
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<tr>
<td>13:30-14:20</td>
<td>Lunch</td>
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<tr>
<td>14:20-14:45</td>
<td>Optimizing stepwise therapy in glaucoma</td>
<td>Anastasios-Georgios P. Konstas –</td>
</tr>
<tr>
<td>14:45-15:00</td>
<td>Ocular surface disease and glaucoma - can we take care of both?</td>
<td>Ingrida Januleviciene –</td>
</tr>
<tr>
<td>15:00-16:30</td>
<td><strong>RETINA AND VITREOUS (MODERATORS: JURATE BALCIUNIENE, KULDAR KALJURAND)</strong></td>
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</tr>
<tr>
<td>15:00-15:07</td>
<td>The First Expierence with Foldable Capsular Vitreous Body implatation in Latvia</td>
<td>Guna Laganovska RV-3</td>
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<tr>
<td>15:14-15:21</td>
<td>Acute-onset vitreous hemorrhage of unknown origin: should we act or wait?</td>
<td>Adomas Pajeda RV-7</td>
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<tr>
<td>15:21-15:36</td>
<td>Dyes in epiretinal membrane surgery</td>
<td>Jean-François Korobelnik –</td>
</tr>
<tr>
<td>15:36-15:56</td>
<td>Management of Diabetic Macular edema</td>
<td>Anat Loewenstein –</td>
</tr>
<tr>
<td>15:56-16:16</td>
<td>Dyes in epiretinal membrane surgery</td>
<td>Jean-François Korobelnik –</td>
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<tr>
<td>16:16-16:30</td>
<td>Problematic Questions in Treatment of Retinal diseases: a Case Based Approach</td>
<td>Jurate Balciuniene –</td>
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<tr>
<td>16:30-16:50</td>
<td>Coffee break</td>
<td></td>
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</table>
### 16:50-18:00  PAEDIATRIC OPHTHALMOLOGY AND RARE DISEASES (MODERATORS: ARVYDAS GELZINIS, SANDRA VALEINA)

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>16:50-17:10</td>
<td>State-of-the-Art in Genetic Therapies for Retinal Dystrophies</td>
<td>Bart Leroy</td>
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<tr>
<td>17:10-17:25</td>
<td>Myopia control</td>
<td>Andrzej Grzybowski</td>
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<tr>
<td>17:25-17:32</td>
<td>Surgically treated Congenital Cataract’s Eye Axial Length influence on Pseudophakic eye refraction changes</td>
<td>Sandra Valeina</td>
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<tr>
<td>17:32-17:39</td>
<td>Rare Diseases Management in LSMU Hospital Kauno klinikos</td>
<td>Arvydas Gelzinis</td>
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<tr>
<td>17:39-17:46</td>
<td>Rare congenital iris membrane with secondary glaucoma: a case report</td>
<td>Pille Tein</td>
<td>G-3</td>
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<tr>
<td>17:46-17:53</td>
<td>Prevalence of complications in a lithuanian retinitis pigmentosa group</td>
<td>Rasa Strupaite-Sileikiene</td>
<td>RV-4</td>
</tr>
<tr>
<td>17:53-18:00</td>
<td>Case Report</td>
<td>Vineta Aizkalne</td>
<td>P-1</td>
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</table>

### Saturday, August 24th

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>09:00–09:20</td>
<td>NEUROOPHTHALMOLOGY</td>
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<tr>
<td>09:00–09:20</td>
<td>Optic Chiasmal Syndromes</td>
<td>Aki Kawasaki</td>
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<td>09:20–10:50</td>
<td>GLAUCOMA (MODERATORS: INGRIDA JANULEVICIENE, KRISTINE BAUMANE)</td>
<td></td>
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<tr>
<td>09:20-09:40</td>
<td>OCT angiography - how to quantify data</td>
<td>Leopold Shmetterer</td>
<td></td>
</tr>
<tr>
<td>09:40-10:00</td>
<td>MIGS - how minimal is minimal-invasive?</td>
<td>Anselm Junemman</td>
<td></td>
</tr>
<tr>
<td>10:00-10:10</td>
<td>Role of Ahmed Valve In Refractory glaucoma surgery</td>
<td>Vytautas Jasinskas</td>
<td></td>
</tr>
<tr>
<td>10:10-10:20</td>
<td>Peripapillary retinoschisis and glaucoma. Case report</td>
<td>Loreta Kuzmiene, Dzastina Cebatoriene</td>
<td></td>
</tr>
<tr>
<td>10:20-10:27</td>
<td>Association of NT-proANP Level in Plasma and Aqueous Humour with Primary Open-Angle Glaucoma</td>
<td>Kristina Bauman</td>
<td></td>
</tr>
<tr>
<td>10:27-10:34</td>
<td>Morphological Changes of Lamina cribrosain Glaucomatous Eyes after Trabeculectomy</td>
<td>Aiste Kdziauskiene</td>
<td>G-6</td>
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<tr>
<td>10:34-10:41</td>
<td>Incidence of pseudoexfoliation syndrome and its association with non-infectious eye diseases in Kaunas (Lithuania)</td>
<td>Ugne Rumelaitiene</td>
<td>G-1</td>
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<tr>
<td>10:41-10:48</td>
<td>Comparison of anterior segment characteristics in cataract patients with or without glaucoma</td>
<td>Giedre Pakuliene</td>
<td>G-6</td>
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<td>10:48-10:55</td>
<td>Comparison of filtering bleb characteristics using anterior segment OCT: minimally invasive glaucoma surgery vs. trabeculectomy</td>
<td>Oskars Gertners</td>
<td>G-5</td>
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<tr>
<td>10:55-11:10</td>
<td>Coffee break</td>
<td></td>
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<tr>
<td>11:10-12:40</td>
<td>OCULOPLASTICS AND ONCOLOGY (MODERATORS: ARTUR KLET, GODA MINIAUSKIENE)</td>
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<td>11:25-11:40</td>
<td>Management of Orbital Tumors</td>
<td>Karla Chaloupka</td>
<td>–</td>
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<td>11:40-11:55</td>
<td>Periocular Reconstruction following Excision of Cutaneous Malignancy</td>
<td>Artur Klett</td>
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<td>11:55-12:03</td>
<td>Sebaceous gland carcinoma of the eyelids: 20 years’ experience in Finland</td>
<td>Paula Niinimäki</td>
<td>OO-1</td>
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<td>12:03-12:11</td>
<td>Ophthalmoplegia with exophthalmos, method of elimination</td>
<td>Aniya Iserkepova, Evgeniya Chesnokova</td>
<td>OO-2</td>
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<td>12:11-12:19</td>
<td>Development of lacrimal surgery in Estonia, example of one family</td>
<td>Kadi Palumaa</td>
<td>OO-3</td>
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<td>12:19-12:27</td>
<td>Choroidal methasteses of cutaneous melanoma and response to systemic treatment</td>
<td>Egle Baliutaviciute</td>
<td>OO-5</td>
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<td>12:27-12:35</td>
<td>Ocular recurrence of primary central nervous system lymphoma: 2 clinical cases</td>
<td>Augustina Grigaite</td>
<td>OO-4</td>
</tr>
<tr>
<td>12:35-13:40</td>
<td>Lunch</td>
<td></td>
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<tr>
<td>13:40-14:40</td>
<td>UVEITIS AND OTHER INTRAOCULAR INFLAMATION (MODERATORS: RIMVYDAS AŠOKLIS, LĪGA RADECKA)</td>
<td></td>
<td></td>
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<tr>
<td>13:40-13:55</td>
<td>How to avoid endophthalmitis after IVI?</td>
<td>Andrzej Grzybowski</td>
<td>–</td>
</tr>
<tr>
<td>13:55-14:03</td>
<td>Endophthalmitis After Intravitreal Injection</td>
<td>Liga Radecka</td>
<td>RV-5</td>
</tr>
<tr>
<td>14:03-14:11</td>
<td>Endogenous Endophthalmitis Secondary to Pyogenic Liver Abscess</td>
<td>Emilija Juseviciute</td>
<td>–</td>
</tr>
<tr>
<td>14:11-14:19</td>
<td>Acute posterior multifocal placoid pigment epitheliopathy associated with chronic pulmonary embolism: a case report</td>
<td>Indre Meiluniene</td>
<td>U-2</td>
</tr>
<tr>
<td>14:19-14:27</td>
<td>Acute retinal necrosis caused by VZV</td>
<td>Kristina Baumane</td>
<td>–</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td>Speaker</td>
<td>Location</td>
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<tr>
<td>14:27-14:40</td>
<td>Uncommon causes of the ocular inflammation – hints, challenges and failures</td>
<td>Rimvydas Asoklis</td>
<td></td>
</tr>
<tr>
<td>14:40–16:10</td>
<td><strong>YOUNG OPHTHALMOLOGISTS SESSION (MODERATOR: VYTAUTAS JASINSKAS, JURIS VANAGS)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:40-14:47</td>
<td>SOE lecture: Spontaneous late in-the-bag intraocular lens dislocation</td>
<td>Renata Vaiciuliene C-7</td>
<td></td>
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<tr>
<td>14:47-14:54</td>
<td>FLACS vs Conventional Phacoemulsification in hands of inexperienced surgeon</td>
<td>Andrei Solomatin C-1</td>
<td></td>
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<tr>
<td>14:54-15:01</td>
<td>First experience using flanged intrasceral intraocular lens fixation with double-needle technique.</td>
<td>Andrei Solomatin C-2</td>
<td></td>
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<tr>
<td>15:01-15:08</td>
<td>Morphological features of Meibomian glands in young adults</td>
<td>Ieva Alisauskaite CO-5</td>
<td></td>
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<tr>
<td>15:08-15:15</td>
<td>Effect of obstructive sleep apnea on corneal morphological characteristics</td>
<td>Zivile Vieversyte CO-2</td>
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</tr>
<tr>
<td>15:15-15:22</td>
<td>Association between Antenatal Blood Pressure and 5-Year Postpartum Retinal Arteriolar Structural and Functional Changes</td>
<td>Ralene Sim Zi Hui RV-6</td>
<td></td>
</tr>
<tr>
<td>15:22-15:29</td>
<td>Real-World Outcomes of Ranibizumab Treatment for Diabetic Macular Edema in LSMU Hospital Kauno klinikos</td>
<td>Tadas Naujokaitis RV-1</td>
<td></td>
</tr>
<tr>
<td>15:29-15:36</td>
<td>Cost Comparison of Care Between Different Stage Glaucoma Patients</td>
<td>Migle Lindziute G-2</td>
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<tr>
<td>15:36-15:43</td>
<td>Posterior scleritis: case series</td>
<td>Vaiva Stankeviciute U-1</td>
<td></td>
</tr>
<tr>
<td>15:43-15:50</td>
<td>Video presentation of glaucoma surgery case</td>
<td>Eliza Briede</td>
<td></td>
</tr>
<tr>
<td>15:50-16:00</td>
<td>ABCA1rs1883025 and CYP4F2rs2108622 gene polymorphisms association with exudative AMD and association with anti-VEGF inhibitory treatment</td>
<td>Ruta Mockute</td>
<td></td>
</tr>
<tr>
<td>16:00-16:10</td>
<td>Closing remarks</td>
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</tbody>
</table>
As the technology and techniques were being developed, one of the potential benefits postulated for femtosecond laser-assisted cataract surgery (FLACS) was a reduction in ultrasound (US) energy and possibly surgical endothelial cell loss resulting from automation of nuclear fragmentation. Now that we have a wealth of clinical experience and studies, for many of us questions still remains: Is this an impressive but expensive technology in search of a compelling indication? Will young and inexperience surgeons will benefit with femtosecond laser-assisted cataract surgery technique, or is it additional expenses and stress for a surgeon and a patient. Main purpose: To compare benefits and limitations that is offered by femto laser platform, in terms of phaco energy, phaco time, total U/S time, torsional time and effective phaco time, when using in complex with phacoemulsification system in the hands of inexperienced surgeon.

patients in methods: 50 eyes were treated using FLACS. 50 eyes were treated using traditional manual phacoemulsification procedure. All the date was then post calculated using SPSS program. Results: Mean endothelial cell loss was 133.8 cell/mm² in the FLACS group (p=0.001). Mean endothelial cell loss in the phaco group 277.7 cell/mm². One posterior capsule rapture (in both groups). 100% cases had a complete capsulotomy in FLACS group. No “bridges” during femtocapsulorrhexis. Statistically significant difference.

References: Does femtosecond laser-assisted cataract surgery improve endothelial safety? The debate and conundrum. David F.Chang, MD
First experiencce using flanged intrascleral intraocular lens fixation with double-needle technique

Author: Dr. Andrei Solomatin
Contact email: solomatinandrei@gmail.com
Author’s working institution: Dr. Solomatin Eye Center
Co-authors: Dr. Maksim Solomatin
Co-author’s working institution: Dr. Solomatin Eye Center

Whether the conventional phacoemulsification technique is standardized and surgeons using this technique in everyday routine, there are still complications occurring. One of the most frequent and challenging complications to manage is posterior capsular rupture with inability to use it as a support tissue for routine IOL implantation. Implantation of an intraocular lens in an eye without sufficient capsular support has been accomplished by using an anterior chamber IOL, an iris-fixed IOL and transscleral fixed posterior chamber IOL. But all of them have their disadvantages, concerning either endothelial cell loss, post-operative inflammatory response, intra-operative intra-ocular hemorrhage, and others.

Dr. Shin Yamane first described his technique of intraocular lens fixation in the absence of adequate capsular support in 2016 at the ASCRS Symposium. As described, the leading haptic and optic are delivered into anterior chamber using an IOL injector through a keratome incision. Ninety degrees from the keratome incision, a 30-gauge thin wall needle is used to create a sclerotomy incision posterior to the limbus and the needle is tunneled through sclera and into the vitreous space. An intraocular forceps is used to thread haptic of the IOL into the lumen of the needle. A second sclerotomy incision using 30-gauge needle is created 180 degrees from first sclerotomy and the trailing haptic is threaded into the lumen of the needle using an intraocular forceps in a similar fashion. Both needles are externalized from the sclerotomies, and handheld cautery is used to create a flange, which secures the IOL. The haptics are pushed into the eye, and the conjunctiva is reapproximated. Purpose: report a novel approach for 3-piece IOL sutureless transscleral fixation without capsular support using Yamane technique.

Methods: Two angled incisions were made by 30 gauge thin-wall needles. Haptics of an IOL were externalized with the needles and cauterized to make a flange of the haptics. The flange of the haptics were pushed back and fixated into the scleral.
tunnel | Main outcome measures: Best corrected visual acuity, corneal endothelial density, IOL tilt, and complications were determined. Results: The fixation and position of the IOL was stable, however using an UBM examination a tilt of 5 degrees was detected. The mean preoperative VA was 2.0 LogMAR after surgery it improved till 0.4 LogMAR. The mean endothelial cell density decreased from 1865 cells/mm² before surgery to 1741 cells/mm² 1 months after the surgery. The postoperative complication included IOL tilt, conjunctival irritation due to rubbing of the haptics. Conclusion: The minimalistic approach of the double needle flanged-haptics technique enables scleral fixation of an IOL with tools that are readily and inexpensively available in many operating room settings. Most 3-piece IOL can be used with slight variations in the shape of the resulting flange. The technique in the report shows that intrascleral fixation of an IOL using flanged-haptic double-needle technique can be easily adopted and the IOL is stable despite high intraocular anterior chamber pressure.

C-3

Atia Vision Modular Intraocular Lens System AVL 100 for treatment of cataract and presbyopia

Author: Prof. I. Solomatin
Contact email: Solomatinandrei@gmail.com
Author’s working institution: Dr. Solomatin Eye Center
Co-authors: Dr. Andrei Solomatin, Dr. Maksim Solomatin, Dr. Jana Gertnere
Co-author’s working institution: Dr. Solomatin Eye Center

Rationale for Study: Because of the limitations of alternative treatments of presbyopia after cataract surgery, there is a large unmet need for a truly accommodating lens, that mimics the natural ability of the eye to provide full range of functional vision without introducing visual side effects. Subjects enrolled in the present study will benefit from standard cataract surgery. They will also serve to evaluate the accommodative effect of the Atia Lens AVL100. If effective, the Atia Lens AVL100 may provide additional visual performances in the intermediate and near vision, reducing dependence on optical correction.

Study purpose: The purpose of the study is to evaluate the Atia Lens AVL 100 presbyopia-correcting intraocular Lens IOL device ability to provide presbyopia correction in subjects undergoing cataract surgery. Safety and effectiveness of the product will be evaluated in adult subjects undergoing cataract surgery. The Atia Lens (AVL100) is designed to restore visual functions after cataract surgery with added feature of providing clinically useful intermediate and near vision. Pre-operative baseline visual acuities will be compared with post-operative visual acuities. Methods The primary clinical outcomes to be assessed are post-operative visual acuity compared to pre-operative visual acuity measurements. Those will be measured on LogMAR scale and computed for near and intermediate vision. Effectiveness for the purposes of the of the power calculation will utilise distance corrected near vision acuity, as the primary efficacy outcome of the study is an improvement in near visual acuity. Clinical tests and procedures. Manifest refraction, accommodation amplitude, subjective questionnaire, slit lamp examination, IOP, keratometry, ACD (IOL MASTER), Posterior opacification grading, funds examination, contrast sensitivity, sagittal thickness of the natural lens according to UBM. Conclusion. Operation does require some additional steps, base implantation and after Lens implantation in the base, the corneal
incision is larger in comparison with standard cataract phacoemulsification procedures. At the time of the abstract submission 2 implantation have been made. All the post-operative are measured one month post-op. Mean uncorrected visual acuity logMAR 0.3, Mean uncorrected near visual acuity at 40 cm LogMAR 0.2, mean best corrected distance visual acuity at 4 meters LogMAR 0.3, Mean uncorrected intermediate visual acuity at 80 cm LogMAR 0.5, mean distance corrected intermediate visual acuity at 80 cm LogMAR 0.2, best corrected near visual acuity at 40 cm LogMAR 0.2, mean distance corrected near visual acuity at preferred distance LogMAR 0.7, mean distance corrected near visual acuity at 40 cm LogMAR 0.7. More data is needed to determine the possibility of the AVL100 lens to correct near, intermediate and far distance visual acuity.

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The first experience with the FLACS in the Baltic countries

Author: A. Solomatin  
Contact email: Solomatinandrei@gmail.com  
Author’s working institution: Dr. Solomatin „Eye Center”, Riga, Latvia.  
Co-authors: J. Gertnere, I. Solomatin, M. Solomatin.  
Co-author’s working institution: Dr. Solomatin „Eye Center”, Riga, Latvia.

Purpose: To investigate the safety and efficacy of the Lensex (Alcon, USA) femtosecond laser-assisted cataract surgery system compared with conventional phacoemulsification cataract extraction. Participants: 50 eyes underwent conventional cataract surgery and 50 eyes underwent femtosecond laser-assisted cataract surgery. Methods: Femtosecond laser-assisted cataract surgery involved anterior capsulotomy and lens fragmentation based on optical coherence tomography-guided treatment mapping. Conventional cataract surgery involved manual continuous curvilinear capsulorhexis. Both procedures were completed by standard phacoemulsification and insertion of an intraocular lens. Cataract was combined with the following pathology: glaucoma (19 eyes), lens subluxation and pseudoexfoliative syndrome (2 eyes), myopia of high degree (4 eyes). The following examinations were performed before the surgery: vision acuity check, tonometry, biomicroscopy, A-scan, IOL-master and perimetry, optic nerve OCT. Main Outcome Measures: Effective phacoemulsification time and intraoperative complication rates. Results: Patient demographics were similar between both groups. There was no statistically significant difference in intraoperative complications between femtosecond laser-assisted cataract surgery and conventional surgery. There was one posterior capsule rupture in both groups (0.5%; not significant). One hundred per cent of cases treated with the femtosecond laser had a complete capsulotomy. Vacuum time decreased with experience. Effective phacoemulsification time was reduced by 70% in the femtosecond group.
C-5

The accuracy of intraocular lens power calculation formulas for eyes of axial length exceeding 24.5 mm

Author: Wiktor Stopyra, MD, PhD
Contact email: wiktorstopyra@gmail.com
Author’s working institution: MW-med Ophthalmic Hospital, Cracow, Poland

Purpose: The aim of this study was comparison of intraocular lens power calculation formulas accuracy for eyes of axial length exceeding 24.5 mm

Methods: 61 patients were examined, whose ocular axial length ranged between 24.51 mm and 26.72 mm. Preoperatively, the intraocular lens power for each patient was calculated using six different formulas (SRK II, SRK/T, Binkhorst, Hoffer Q, Holladay 1 and Haigis). The power of actually implanted intraocular lens was based on Holladay 1 formula. Visual acuity was measured using Snellen chart on the 30th postoperative day. Results: 54 patients (88.5%) achieved full visual acuity (1.0 on Snellen chart) after cataract surgery. If other power calculation formulas were used for the actual intraocular lens this would be achieved respectively in: SRK/T – 39 patients (63.9%), Hoffer Q – 22 patients (36.1%), Binkhorst – 21 patients (34.4%), Haigis – 7 patients (11.5%), SRK II – 5 patients (8.2%).

Conclusion: 1. Holladay 1 formula is recommended for intraocular lens power calculation for eyes of axial length exceeding 24.5 mm. 2. SRK/T formula also seems to be satisfactory for these cases.
Choroidal thickness maps changes following phacoemulsification in patients with age-related macular degeneration

Author: Gaile Gudauskiene
Contact email: gailemazeikaite@gmail.com
Author’s working institution: Department of Ophthalmology of the Hospital of Lithuanian University of Health Sciences, Kaunas Clinics
Co-authors: Ieva Povilaityte, Dalia Zaliuniene
Co-author's working institution: Department of Ophthalmology of the Hospital of Lithuanian University of Health Sciences, Kaunas Clinics

Introduction. Phacoemulsification and intracapsular lens implantation is the most commonly performed surgery in ophthalmology [1]. Pierru et al. reported the postoperative increment in choroidal thickness (CT) [2]. Yilmaz et al. did not find any significant change in CT after the surgery [3]. Age-related macular degeneration (AMD) is a leading cause of visual impairment worldwide in the ageing populations [4]. Purpose. To evaluate CT maps changes before and after uncomplicated phacoemulsification in patients with AMD. Methods. A prospective clinical study was performed at the Department of Ophthalmology of the Hospital of Lithuanian University of Health Sciences, Kaunas Clinics. 25 eyes of 25 patients (mean age 73.28±6.06 years) with senile cataract and AMD received uncomplicated phacoemulsification and intraocular lens implantation. CT measurements were performed preoperatively (P), 1 month (M1) and 3 months (M3) after the surgery using 1050 nm DRI Triton SS-OCT (Topcon, Tokyo, Japan) at the same time 1-2 PM. The 9 automatically calculated ETDRS grid subfields were assessed: the CT in the central ring (C), nasal inner (NI), superior inner (SI), temporal inner (TI), inferior inner (II), nasal outer (NO), superior outer (SO), temporal outer (TO), and inferior outer (IO) regions. Statistical analysis was performed using SPSS Statistics for Windows, version 20.0 (IBM SPSS, Armonk, NY, USA). The results were presented as mean±standard deviation (M±SD). To evaluate the changes in the CT the Wilcoxon Signed-Rank test was used. A p value ≤0.05 was considered statistically significant. Results. 8 (32%) men and 17 (68%) women were analysed (p=0.072). Mean CT difference (M1/P) was -2.33±22.62 in C (p=0.279), 29.16±18.76 in NI (p=0.014), 3.88±9.43 in NO (p=0.024), 1.26±12.34 in TI (p=0.037), 1.45±14.68 in TO (p=0.025), 2.34±20.02 in SI (p=0.217), 1.08±16.32 in SO (p=0.244), -9.25±13.98 in II (p=0.273) and -2.26±11.76 in
IO (p=0.022) (expressed in µm) regions. Mean CT difference (M3/P) was 12.45±28.32 in C (p=0.103), -13.06±22.90 in NI (p=0.019), 3.1±8.62 in NO (p=0.098), 3.67±15.65 in TI (p=0.098), 0.4±10.03 in TO (p=0.021), 14.81±29.57 in SI (p=0.047), 17.38±30.21 in SO (p=0.079), -16.09±17.89 in II (p=0.007) and 1.7±9.06 in IO (p=0.010) (expressed in µm) regions. Conclusions. There was a significant CT difference before and 1 month after phacoemulsification in NI, NO, TI, TO and IO subfields. 3 months after the cataract surgery significant CT difference was found in NI, TO, SI, II and IO regions. Phacoemulsification may cause significant increase in CT in AMD patients in the short term. However, further investigations should be continued to confirm and better clarify our findings.

Late spontaneous in-the-bag intraocular lens dislocation

Author: Renata Vaičiuliene
Contact email: renata.vaiciuliene@lsmuni.lt
Author`s working institution: Department of Ophthalmology, Academy of Medicine, Lithuanian University of Health Sciences, Kaunas, Lithuania.
Co-author: Vytautas Jašinskas
Co-author’s working institution: Department of Ophthalmology, Academy of Medicine, Lithuanian University of Health Sciences, Kaunas, Lithuania.

Background: Late spontaneous in-the-bag intraocular lens (IOL) dislocation is a rare, but one of the most serious complications occurring many years after the standard cataract surgery. The rate of posterior chamber IOL dislocation has been reported as 0.2 to 3%, but late spontaneous dislocation is a small part of this group (1). Late in-the-bag IOL dislocation has been associated with increased intraocular pressure (IOP) and glaucoma (2,3). Many factors affect the corneal endothelial cell density (ECD) including direct damage due to elevated IOP, pseudoexfoliation, ocular surgery, and ocular trauma (4). In the literature available to us, we haven’t found any publications describing the relationship between ocular condition, especially ECD and the grade of in-the-bag IOL dislocation.

Aim: To evaluate changes in corneal ECD and IOP in eyes with different grades of in-the-bag IOL dislocation.

Methods: Eighty eyes (right 39 (48.7 %), left 41 (51.3 %)) of 78 participants (males 44 (56.3%), females 34 (43.7 %)) were prospectively included in our study. The inclusion criteria were spontaneous in-the-bag IOL dislocation, with the IOL still visible in the pupillary area more than 6 months after cataract surgery. IOL`s totally dislocated into the posterior segment of the eye were not included. Patients with uncontrolled systemic illness, congenital or terminal eye diseases and patients with a history of eye trauma or vitrectomy were also excluded from the study. Patients underwent an ophthalmological examination consisting of IOP measurement, anterior-segment slit-lamp examination, and photography and in vivo corneal confocal microscopy. In our study, we used in-the-bag IOL dislocation grading based on a study by Kristianslund and colleagues (5).

Statistical data analysis was performed using IBM SPSS version 22.0. A p value of 0.05 was selected as the threshold of statistical significance.
Results: Of the overall 80 eyes, the IOL dislocation was grade 1 in 15, grade 2 in 32 and grade 3 in 33 eyes, based on the aforementioned grading system. The percentage of cases of previously diagnosed glaucoma and a median number of IOP lowering medications were significantly higher in IOL dislocation grade 1. The median IOP with glaucoma medications were significant higher in grades 1 and 2 (21.0 (12-41) mmHg and 24.0 (12-41) mmHg) compared with grade 3 (17.0 (12-29) mmHg) (p<0.01). The differences in ECD were insignificant between grades. By grouping cases into those with and without glaucoma, we found that the median ECD was lower in eyes with glaucoma compared to the eyes without glaucoma in IOL dislocation grades 2 and 3 (grade 2 p=0.03, grade 3 p=0.003).

Conclusions: The elevation of IOP was observed, especially in patients with in-the-bag IOL dislocation Grades 1 and 2. More severe decrease in cornea ECD was found in patients with in-the-bag IOL dislocation who have had glaucoma.

References:
Cornea, Ocular Surface and Refractive Surgery

CO-1

Corneal Collagen Cross-Linking for Patients with Progressive Keratoconus: First Years (2017-2018) Results

Author: Renata Vaiciuliene
Contact email: renata.vaiciuliene@lsmuni.lt
Author’s working institution: Department of Ophthalmology, Academy of Medicine, Lithuanian University of Health Sciences, Kaunas, Lithuania.
Co-authors: Tomas Mickevicius, Migle Grineviciute, Ugne Rumelaitiene, Dalia Zaliuniene
Co-author’s working institution: Department of Ophthalmology, Academy of Medicine, Lithuanian University of Health Sciences, Kaunas, Lithuania.

Background: Keratoconus is a rare, non-inflammatory disease characterized by progressive thinning and ectasia of the cornea which induces irregular astigmatism, resulting in impaired vision [1]. Keratoconus usually commences during the puberty or early adolescence and progresses thereafter. Prevalence of keratoconus in the general population ranges between 50 and 265 cases per 100,000 people [2]. Currently, Corneal Cross-Linking (CXL) procedure is the only method of treatment, which is known to be directed towards the core point in the pathogenesis of keratoconus (dysfunction of collagen fibers). CXL, using ultraviolet (UVA) radiation and riboflavin, support the formation of new covalent bonds in the corneal stroma between the collagen fibers [3]. This increases corneal biomechanical stability and reduces the progression of corneal ectasia. Therefore, this procedure halts the progression of keratoconus [4]. The first CXL procedure in the Department of Ophthalmology of the Hospital of the Lithuanian University of Health Sciences was performed at the end of 2016. This study we presented the first treatment results of CXL for patients with progressive keratoconus. Aim: To assess visual acuity and keratometric results of CXL for progressive keratoconus in the Department of Ophthalmology of the Hospital of the Lithuanian University of Health Sciences between 2017 and 2018. Methods: A total of 29 eyes of 24 patients with progressive keratoconus, who underwent CXL between 2017 and 2018 in the Department of Ophthalmology of the Hospital of the Lithuanian University
of Health Sciences, were included in our retrospective study. Except one woman, all the subjects were male. The mean age of the patients was 21.2 ± 5.58, ranging between 15 and 42 years. Uncorrected visual acuity (UCVA), best corrected visual acuity (BCVA), keratometry (Kmax) and corneal thickness in the thinnest spot were evaluated preoperatively and 3, 6 and 12 months after CXL. The study was approved by the Center for Bioethics of the Lithuanian University of Health Sciences. A written informed consent form was obtained from each study subject. Statistical data analysis was performed using IBM SPSS version 22.0. In order to test the hypotheses, we used the Paired Samples t-test. A P value of 0.05 was selected as the threshold of statistical significance. Results: UCVA increased from an average of 0.28 ± 0.20 before CXL to 0.31 ± 0.22 (p = 0.322) 3 months, 0.38 ± 0.29 (p = 0.045) 6 months and 0.5 ± 0.29 (p = 0.010) 12 months after treatment. BCVA improved from 0.40 ± 0.23 to 0.46 ± 0.25 (p = 0.075), 0.53 ± 0.28 (p = 0.003) and 0.68 ± 0.31 (p = 0.003) respectively. Keratometry measurements flattened significantly during the follow-up. While comparing preoperative with postoperative keratometry results, we observed significant decrease Kmax (from 58.29 ± 5.44 D to 57.74 ± 5.49 D; 57.65 ± 4.71 D; 57.07 ± 3.73 D (p ≤ 0.004). Significant decrease was also observed in corneal thickness in the thinnest spot before and 3-, 6- and 12-month after CXL (from 466.93 ± 44.00 μm to 452.70 ± 46.25 μm; 456.80 ± 49.99 μm; 454.46 ± 49.37 μm (p ≤ 0.01). We did not observe any case of severe complication. Conclusions: Our results shown that CXL has a favorable effect on the progression of keratoconus. The reduced K values and increased visual acuity remained 1 year after the procedure.

Effect of obstructive sleep apnea on corneal morphological characteristics

Author: Živilė Vieversytė
Contact email: vieversytezivile@gmail.com
Author’s working institution: Vilnius University Hospital Santaros Clinics
Co-authors: Andrius Bojarun, Rūta Jarusevičienė, Saulius Galgauskas, Rolandas Zablockis, Rimvydas Ašoklis
Co-author’s working institution: Vilnius University Hospital Santaros Clinics

Purpose: Hypoxia can cause a negative effect on cornea, especially on its endothelium. We hypothesise that obstructive sleep apnea (OSA) can result changes in central corneal thickness and corneal morphometrical parameters. We performed a prospective clinical study to evaluate the relationship between the severity of OSA and minimal arterial oxygen saturation (min. SpO2) with respect to corneal morphological characteristics. Materials and methods. Patients with OSA, diagnosed by full-night polysomnography, prior to the treatment, were included in the study. The patients with OSA were divided into 3 groups according to their Apnea-Hypopnea Index (AHI) values. The control group was examined to exclude the possibility of OSA and ocular diseases. The following data were recorded: age, gender, ophthalmologic evaluation and polysomnography results. Results. A total of 114 eyes were studied: 74 in patients with OSA and 40 in control group. Mean age was 56.5±6.2 years and male to female ratio was 1,7:1 in the study group. After analyzing the results of CCT, Cd, Cv and HEX, only the mean values of CCT and Cd were significantly different between the patients and the control group (p < 0.05). The mean CCT, Cd, Cv and HEX values in the group of OSA patients were 535.28±21.32, 2632.83±333.46, 31.81±3.90, and 55.62±6.90 respectively. The mean CCT and Cd values for each group were lower than the control group. Significant negative correlation was found between CCT, Cd in regarding AHI values (respectively r = -0.390, p = 0.011 and r = -0.109, p = 0.040) and weak positive correlation between CCT, Cd regarding min. SpO2 (r = 0.282, p = 0.020 and r = -0.332, p = 0.018). Cv and HEX did not significantly differ between groups and did not correlate with polysomnography results (p > 0.05). Conclusion. Hypoxia causes significant changes in corneal thickness and endotheliocytes density. The central corneal thickness and endotheliocytes density were significantly different among patients with obstructive sleep apnea. The severity of hypoxemia and the increase in apnea-hypopnea index values reduce the patient’s central corneal thickness and endotheliocytes density.
CO-3

Comparative analysis of the levels of markers of inflammation in the tear fluid in patients with keratoconus.

Author: Meshcheryakova Julia
Contact email: janager@balticom.lv
Author’s working institution: Dr. Solomatin Eye Center
Co-authors: Solomatin Igor, Gertnere Jana
Co-author’s working institution: Latvian State University, Dr. Solomatin Eye Center

Traditionally, keratoconus was considered a non-inflammatory disease, until in 2005 Lema et al. put forward the theory that the presence of inflammation plays a role in the development of the disease. Elevated levels of inflammatory markers were found in lacrimal fluid of patients[2,3,4,5]. Based on these data, patients with keratoconus were examined on the basis of our clinic in order not only to detect the presence of inflammatory markers in the tear fluid, but also to compare their levels in both eyes of patients with bilateral (BK) and monolateral (MK) keratoconus. Possible differences in the level of markers will not only confirm the theory of inflammation, but will also contribute to the emergence of early express screening of keratoconus in the future [1]. In cases of monolateral keratoconus, this diagnostic method will provide early diagnosis and prevention of the development of the disease in the eye without keratoconus, relying on the levels of markers obtained. Purpose: To determine the level of inflammatory cytokines like interleukin 6(IL-6), tumor necrosis factor alpha(TNF-α) and matrix metalloproteinase 9 (MMP-9) in tears from both eyes of unilateral and bilateral KC patients and to compare it with the control group tear fluid results from one eye. Materials and Methods: In this prospective case-control study were analyzed twenty patients (40 eyes) with diagnosed KC disease, 10 patients (20 eyes) of this group was with unilateral KC (UKC) and 10 patients (20 eyes) with bilateral KC (BKC) and 10 health control subjects (20 eyes). Tears (110 µl) were collected from each eye with the Schirmer test tear collecting method. Results: Case group (N=20; 40 eyes) and control group (N=10; 20 eyes) had statistically significant difference in cytokine laboratory analysis between the groups.

CO-4

Corneal changes in patients with herpes simplex virus keratitis by in vivo confocal microscopy

Author: Danileviciene Vilija
Contact email: vilija123@gmail.com
Author’s working institution: Department of Ophthalmology, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania
Co-authors: Zemaitienè Reda¹, Gintauskiene Vilte Marija², Nedzelskiene Irena³, Zaliuniene Dalia¹
Co-author’s working institution: ¹ Department of Ophthalmology, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania ² Department of Immunology and Allergology, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania ³ Department of Dental and Oral Pathology, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania

Introduction: Herpetic keratitis is a major cause of corneal blindness [1]. The disease mostly affects the anterior segment and manifests as an epithelial or stromal keratitis, endotheliitis, and/or iritis and tends to recur [2,3]. Recurrences of the disease may result in corneal scarring, thinning, neovascularisation and hypesthesia, which is a major risk to form neurotrophic keratopathy [4]. Herpes simplex virus (HSV) keratitis presents with Langerhans cell (LC) infiltration and sensory nerve density changes in sub-basal corneal layer and endothelial cells (EC) damage. Purpose: To describe corneal sub-basal nerves changes, evaluate LC and EC density in HSV keratitis during acute phase of the disease and after 6 months.

Methods: A prospective clinical study included 269 patients divided into 3 groups: 79 – with active unilateral HSV keratitis, 101 healthy patients with previous history of herpes labialis and 89 patients with no history of any HSV diseases. All of the patients underwent a complete ophthalmological examination, Cochet-Bonnet aesthesiometry and LSCM of the central cornea. After 6 months all the patients with herpetic eye disease underwent the same examination. Serology tests of the serum to detect HSV ½ IgG and IgM were performed. Statistical analysis was performed with SPSS programme. The results were analysed by Kruskal-Wallis and Mann-Whitney tests.

Results: HSV affected eyes demonstrated a decrease in corneal sensitivity, corneal nerve fibre (CNFD), nerve branch (CNBD) and nerve total branch density (CTBD) and nerve fibre length (CNFL) and an increase in LC density.
Morphological features of Meibomian glands in young adults

Author: Ieva Alisauskaite
Contact email: ialisauskaite@yahoo.co.uk
Author’s working institution: Vilnius University, Faculty of Medicine
Co-authors: Egle Danieliene (1,2), Saulius Galgauskas (1,3)
Co-author’s working institution: (1) Vilnius University, Faculty of Medicine; (2) Akiu Gydytoju Praktika, Ltd, Vilnius, Lithuania; (3) Vilnius University Hospital Santaros Klinikos, Vilnius, Lithuania

Introduction: Meibomian gland dysfunction (MGD) is a common condition affecting up to 68% of people aged 40 years and older [1]. Little is known about MGD in young people, however, new data about the morphological changes of Meibomian glands (MGs) in asymptomatic children are emerging [2,3]. The relationship of MGs morphological features (e.g. deficiency and shape) with signs and symptoms of MGD, especially in young populations, is still debated among scientists [4]. Aim: To evaluate the anatomical features of MGs in young adults (age 18-25 years), and to find out if there are any associations of MGs morphology with subjective and objective symptoms of MGD. Methods: Prospective study was carried out from February 2018 to November 2018. 126 eyes of 63 volunteers were examined. The study subjects responded to the Standardized Patient Evaluation of Eye Dryness (SPEED) questionnaire and questions about the use of digital screens. The non-invasive tear break-up time (NITBuT), meibography imaging, evaluation of eyelid margins, MG orifices, meibum quality and MG expressibility, fluorescein tear break-up time (FTBuT), and corneal fluorescein staining tests were performed in the mentioned order for all of the study subjects. The distortion of MGs in upper eyelids was graded according to 6 grade MG distortion index by Zhao et al [3]. Statistical analysis was performed using SPSS v.23 software: Student t test and Pearson’s correlation was used for normally distributed data and χ2 test and Spearman correlation were applied for non-normally distributed and categorical data. Results: 56 eyes were included in the final analysis (34 female, mean age 22.7 ±1.43 years). According to SPEED score, 77% (N=43) of the subjects had dry eye symptoms. NITBuT and FTBuT were 12.64±4.43s and 6.27±3.49s accordingly, FTBuT being statistically shorter.
CO-6

Results of intracorneal ring segments implantation for patients with keratoconus

Author: Lina Socevičienė
Contact email: lina@lirema.lt
Author’s working institution: Eye Clinic Lirema

Purpose: To investigate results of keratoconus treatment with intracorneal implants - intracorneal ring segments (ICR), Kerarings, - patients population, stage of the treated disease, effect on vision, other surgical treatment of the same eye, complications of the treatment. Methods: It is retrospective study conducted in Eye Clinic Lirema, Vilnius. Patients who had keratoconus and were eligible for the ICR implantation, were treated with femtosecond laser assisted Kerarings implantation. Each patient underwent uncorrected visual acuity (UCVA) and best corrected visual acuity (BCVA) assessment on Snellen chart before and more than 4 months after the surgery, underwent Pentacam corneal analysis, disease stage assessment before and after the surgery. Complications and their outcomes were analysed.

Results: We had analysed 21 eye of 20 patients with ICR implants. Patients average age is 31 year (youngest 18, oldest 49). Gender distribution: 14 men, 6 women. Stage of keratoconus: 11 patients in 2nd stage of the disease, 9 patients in 3rd stage before ICR implantation. Three patients had had corneal cross linking (CXL) of the same eye before ICR implantation (7, 6 and 3 years ago), two patients had CXL after ICR implantation (after 7 and 8 months). Visual acuity changes: average UCVA before ICR was 0,1 (min 0,01, max 0,5), after - 0,5 (min 0,2, max 1,0); average BCVA was 0,5 (min 0,2, max 0,9) before and 0,6 (min 0,2, max 1,0) after ICR implantation. There were two cases of ICR migration, treated with the same ICR repositioning and corneal wound suturing, with good final outcome. Conclusions: Keratoconus treatment with ICR implantation is effective and safe treatment method. It gives significant vision improvement. Implantation is possible after CXL procedure as well as CXL is possible for non stable corneas after ICR implantation.
CO-7

Trends in Corneal Transplantation. Ultrathin DSAEK – an Option of Endothelial Keratoplasty

Author: Reda Žemaitienė
Author’s working institution: Hospital of Lithuanian University of Health Sciences Kauno klinikos

Introduction: Corneal blindness is the third leading cause of blindness in the world. Each year more than 180,000 corneal transplants are performed worldwide. The most common indications for the procedure are Fuch’s dystrophy, keratoconus, bullous keratopathy and infectious keratitis. Penetrating keratoplasty (PK) used to be the leading approach for a long time until other techniques without any requirements of transplanting all the layers of cornea, had emerged. Descemet Stripping Automated Endothelial Keratoplasty (dSAEK), ultrathin DSAEK and Descemet Membrane Endothelial Keratoplasty (dMEK) are partial-thickness endothelial keratoplasties which can be an option for a surgical treatment of corneal endothelial dysfunction without cornea fibrosis. DSAEK or ultrathin DSAEK involves transplanting the endothelium, Descemet’s membrane and a thin layer of posterior stroma onto the surface of posterior stroma after descemeterhexis. The indications for DSAEK are endothelial dysfunctions (Fuch’s endothelial dystrophy, bullous keratopathies – especially associated with glaucoma drainage device, aphakia, aniridia, anterior chamber intraocular lens), iridocorneal-endothelial syndrome, late failure of PK, if refractive outcome is acceptable prior to endothelial failure.

The first clinical case that shows successful transition to ultrathin DSAEK in endothelial dysfunction is presented below.

The case: A 68-year-old woman was diagnosed with pseudophakic bullous keratopathy (cataract phacoemulsification with posterior chamber intraocular lens implantation) three years ago. It was decided to perform partial-thickness keratoplasty because the patient had an endothelial dysfunction that was visually disabling and caused eye pain, but no severe stromal opacity was present. In January 2019 ultrathin DSAEK was performed. Anterior segment optic coherence tomography showed transplant to be fully attached during follow-up post-operatively and sutures were removed three months later after the surgery.
Conclusions: Even though PK remains the only possible approach of corneal transplantation in some cases, other techniques, such as DSAEK, ultrathin DSAEK and DMEK, have shown to have good results and lower rate of complications in endotelial dysfunctions. Partial-thickness endothelial keratoplasty is a treatment of choice when endothelium is damaged and no severe stromal opacity is found. DMEK is emerging as a viable endothelial keratoplasty procedure, but it has limited indications. DSAEK is more versatile and providing optimal outcomes in complex anterior segment cases.

RV-1

Real-World Outcomes of Ranibizumab Treatment for Diabetic Macular Edema

Author: Tadas Naujokaitis  
Contact email: tadas.naujokaitis@yahoo.com  
Author’s working institution: Faculty of Medicine, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania  
Co-authors: doc. dr. Vilma Jūratė Balčiūnienė  
Co-author’s working institution: Department of Ophthalmology, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania

Introduction: Intravitreal injections of vascular endothelial growth factor inhibitors, one of which is ranibizumab, have replaced macular laser photocoagulation as the mainstay of diabetic macular edema (DME) treatment [1]. Although clinical trials have demonstrated the effectiveness of ranibizumab treatment, the outcomes may differ in a real-world clinical setting [2]. Aim of the Study To evaluate the outcomes of ranibizumab treatment for DME in a real-world clinical setting.

Methods: This retrospective monocenter study involved the analysis of medical records of patients who started ranibizumab treatment for DME at the Hospital of the Lithuanian University of Health Sciences Kauno klinikos between June 2015 and May 2017. Anonymized data regarding follow-up visits, ranibizumab injections administered and best-corrected visual acuity (BCVA) were collected. Snellen BCVA measurements were converted to approximate Early Treatment Diabetic Retinopathy Study letter scores [3]. The Wilcoxon signed rank test was used to compare BCVA values at baseline with values at different time points during the follow-up period. Baseline BCVA subgroups were compared using the Kruskal-Wallis test. P value 68 letters), their vision remained better than of eyes with worse baseline BCVA throughout the two years of follow-up.

RV-2

**Long term outcome of surgically successful macular hole surgery: a case report**

**Author**: Juris Vanags  
**Contact email**: jurisvanags@inbox.lv  
**Author’s working institution**: P.Stradins Clinical university hospital  
**Co-authors**: Dāvis Raščevskis, Aija Balode, Guna Laganovska  
**Co-author’s working institution**: P.Stradins Clinical university hospital

**Introduction**: Nowadays macular hole surgery is highly safe procedure and often it is simultaneously combined with cataract surgery. However, severe complications may occur during postoperative period, reflecting on potential result. Aim: To present a case of macular hole surgery combined with cataract surgery and to analyze its outcomes in conjunction with complications - capsular bag fibrosis, hypotonia and band keratopathy. Methods: Macular hole surgery by means of pars plana vitrectomy, ILM peeling, gas infusion (C2F6) was performed in combination with cataract removal, intraocular lens implantation. Summary: Female patient, age 65 years. After successful surgery follow up visit was appointed after 5 weeks post op. First visit – VOS = 0,02, TOS = 2mmHg, optic part of intraocular lens out of the bag, capsular bag fibrosis. Pars plana vitrectomy, silicone oil infusion, capsular bag incisions performed 6 weeks after initial surgery. One week follow up visit showed VOS = 0,02, TOS = 2mmHg. Additional pars plana vitrectomy with silicone oil exchange 8 months after initial surgery was performed, VOS 0,05 and TOS = 7 mmHg was achieved. Initial band keratopathy started to develop. Silicone oil exchange and removal (chelation) of band keratopathy was performed 1 year and 7 months after initial surgery. Conclusions: If severe complications invade macular hole surgery in combination of cataract surgery, it is time consuming, thereby more expensive and results in potentially bad visual outcome.
RV-3

The First Experience with Foldable Capsular Vitreous Body (FCVB) Implantation in Latvia

Author: Guna Laganovska
Contact email: glaganovska@ml.lv
Author’s working institution: Riga Stradins University, P.Stradins Clinical university hospital
Co-authors: Oskars Gertners, Ilze Lace, Juris Vanags, Anete Kursite
Co-author’s working institution: Riga Stradins University, P.Stradins Clinical university hospital

Difficult retinal detachment and severe trauma cases need long-term silicon oil tamponade, which often leads to many silicon oil dependent complications. The FCVB is a device for long-term use of the silicon oil tamponade. The aim of the study is to demonstrate the first results of Foldable capsular vitreous body implantation. The Methods: The FCVB was implanted in a 63-year-old female patient. The patient had had the first retinal detachment surgery in January 2017, with silicon oil. The extraction of silicon oil and cataract surgery was performed in July, 2018. The redetachment of the retina occurred in November, 2018 and the secondary silicon oil tamponade was performed. The secondary glaucoma started in February, 2019. The silicon oil removal was performed in December 2018, and due to the redetachment of the retina the third silicon oil tamponade was performed during the same surgery. Due to the secondary glaucoma, silicon oil removal and the implantation of FCVB was performed in May, 2019. Before the implantation of BCVB the visual acuity was hand movement in the right eye, and intraocular pressure with four groups of antiglaucomatous medication was 38 mm of mercury. One week after the surgery the visual acuity was 0.005 and intraocular pressure 12 mm of mercury. The Conclusion. The Foldable Capsular Vitreous Body is one of the options for the treatment of severe cases of retinal detachment and eye traumas.
RV-4

Prevalence of complications in a lithuanian retinitis pigmentosa group

Author: Rasa Strupaitė-Šileikienė
Contact email: rasa.strupaite@santa.lt
Author's working institution: Center of Eye Diseases, Clinic of Ear, Nose, Throat, and Eye Diseases, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University
Co-authors: I. Strupaitė-Šakalienė2, R. Ašoklis1
Co-author’s working institution: 1Center of Eye Diseases, Clinic of Ear, Nose, Throat, and Eye Diseases, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University

Background and aim. Inherited retinal dystrophies (IRD) are now one of the leading causes of irreversible blindness [1] and retinitis pigmentosa (RP, OMIM #26800) is the most common group of IRD. RP is characterized by the primary degeneration of rod photoreceptors, followed by the loss of cone photoreceptors. Its prevalence is 1:3000 to 1:5000 [2]. RP is inherited in autosomal dominant, autosomal recessive, X-linked or simplex manner. RP may be in isolation or in association with systemic disease. The symptoms of RP are nyctalopia, progressive peripheral visual field loss and a reduction of the visual acuity in the end stage. The classical features of RP are arteriolar attenuation, peripheral pigmentation and waxy disc pallor [2]. The most common complications occurring during the progression of the disease are posterior subcapsular cataract, cystic macular oedema (CME) and epiretinal membrane (ERM) [3]. Material and methods. In this overview a Lithuanian RP patients group of 67 collected at the Center for Eye Diseases of Vilnius University Hospital Santaros Klinikos during the period 2015-2018 is presented. Results. After comprehensive ophthalmological investigation, RP group included 60 typical (5 of them were diagnosed with Usher s.) and 7 atypical forms of RP: 6 RP sine pigmento, 1 sectoral and 1 unilateral RP case. 5 syndromic RP cases were also presented. The visual acuity ranged from hand motion to 1,0. The optical coherence tomography (SD-OCT) revealed different retinal structure changes in 64% of patients: epiretinal membrane, cystoid macular changes, macular hole, vitreomacular traction, vitreomacular traction, macular hole. Conclusions. There is a need of careful ophthalmological examination, because the prevalence of treatable RP complications is high and suggests it may be clinically beneficial to screen patients with RP to identify those who may benefit from current or future interventions.
RV-5

Endophthalmitis After Intravitreal Injection

Author: Līga Radecka
Contact email: ligaradecka@inbox.lv
Author’s working institution: Riga East University Hospital, Clinic “Biķernieki”
Co-authors: Kristīne Baumanė
Co-author’s working institution: Riga East University Hospital, Clinic “Biķernieki”

Intravitreal injection of anti-vascular endothelial growth factor has become the standard of care for the treatment of a number of retinal diseases, including exudative age related macular degeneration. The most serious complication from intravitreal injection is endophthalmitis. Although rare, endophthalmitis can result in devastating loss of vision or loss of the eye. The aim of the presentation is to demonstrate three consecutive endophthalmitis cases after intravitreal injection of Bevacizumab in August 2018. Presenting symptoms, treatment, causative organisms, anatomical and functional outcome after 12 months of follow-up will be shown.
**RV-6**

**Association between Antenatal Blood Pressure and 5-Year Postpartum Retinal Arteriolar Structural and Functional Changes**

**Author:** Ralene Sim Zi Hui  
**Contact:** email ralene_sim1995@hotmail.com  
**Author’s working institution:** Ministry of Health Holdings, Singapore  
**Co-authors:** Izzuddin M Aris, Yap Seng Chong, Tien Yin Wong, Ling-Jun Li  
**Co-author’s working institution:** Department of O&G, National University Health System, Singapore, Singapore Institute for Clinical Sciences, Agency for Science Technology (A*STAR), Singapore, Singapore Eye Research Institute, Singapore National Eye Centre, Singapore, Department of O&G, KK Women’s and Children’s Hospital, O&G Academic Clinical Program (ACP), Duke-NUS Medical School, Singapore

**Background:** Studies have shown that hypertensive disorders of pregnancy (HDP) are associated with both postpartum retinal microvascular changes and cardiovascular (CV) risks. However, the underlying mechanism of HDP transitioning to micro- and macro-vascular changes remains unknown, due to the interaction between microvasculature and CV risks. In this study, we examined whether associations between antenatal systolic blood pressure (SBP) and postpartum retinal arteriolar changes are independent of postpartum CV risks.

**Methods:** We included 276 Singaporean mothers attending both baseline index pregnancy (2009-2010) and 5-year postpartum follow-up visits (2014-2015). We measured SBP at the baseline. At follow-up, we assessed retinal microvascular structure and function with retinal photography and dynamic vessel analyzer, together with CV risks using a validated 2008 Framingham Risk Score (FRS). We performed a traditional 4-step mediation analysis using linear regression by adjusting for a series of baseline characteristics: age, ethnicity, college degree, pre-pregnancy body mass index (BMI) and gestational diabetes (GDM) diagnosis at baseline. **Results:** We found that each 10mmHg increase in baseline SBP was associated with reduced arteriolar caliber (-1.3 μm; 95% CI: -3.0, 0.2) and fractal dimension (-0.4 Df; -1.0, 0.2), and significantly with increased arteriolar constriction (0.5%; 0.001, 1.0) at 5 years postpartum. Even though baseline SBP was associated with postpartum FRS, the latter was not associated with any retinal arteriolar measures. Therefore, no further mediation analysis was required. **Conclusion:** Our study suggested that elevated SBP during pregnancy was associated with suboptimal retinal arteriolar structure and function independent of postpartum CV risks.
RV-7

Acute-onset vitreous hemorrhage of unknown origin: should we act or wait?

Author: Adomas Pajėda
Contact email: pajeda.adomas@gmail.com
Author’s working institution: Department of Ophthalmology, Hospital of Lithuanian University of Health Sciences Kauno klinikos, Kaunas, Lithuania.
Co-authors: Arūnas Miliauskas, Saulius Ačas, Kirilas Zimarinas, Lina Krėpštė, Martynas Špečkauskas
Co-authors’ working institution: Department of Ophthalmology, Hospital of Lithuanian University of Health Sciences Kauno klinikos, Kaunas, Lithuania.

Introduction: Although it is quite simple to diagnose vitreous hemorrhage (VH), in most cases the real cause is unknown. Time of action must be adjusted to suspected origin of the disease, otherwise delayed surgery may have unfavourable visual prognosis. Aim: To evaluate perioperative characteristics of VH of unknown origin. Methods: A retrospective cross-sectional study was conducted in the Department of Ophthalmology, Hospital of Lithuanian University of Health Sciences Kauno klinikos. Subjects: patients who had pars plana vitrectomy (PPV) for VH of unknown origin in 2018. Exclusion criteria - VH due to trauma, postoperative complications, previously diagnosed proliferative diabetic retinopathy. Results: 54 VH of unknown origin preoperatively were operated. Most common causes were rhegmatogenous retinal detachments (RRD) and tears (40,7%), retinal vein occlusions (RVO) (18,5%), wet age-related macular degeneration (wAMD) (14,8%), retinal traction (7,4%), IOL chafing (3,7%) and other (14,8%): retinal angiomatosis, vitreoretinal proliferation, Terson syndrome, retinitis, subretinal hemorrhages of unknown origin and suspected overdose of anticoagulant or antiplatelet agents. Average age 68 [33;88] years. Time median from complaints to surgery was 9 [1;191] days (d) and 58 % of patients had surgery within 5 days from the first visit to an ophthalmologist to surgery. First day postoperatively 37 % of patients had improved visual acuity (VA), for 18,5 % VA did not change or worsened and 42,6 % had air, gas (C3F8) or silicone oil (1,9%) tamponade. For 23 patients who were followed-up in our department, best improvement for BCVA was found in RRD and tears group - median 0,6 [0,05;1]. While patients with wAMD and RVO had significantly lower median BCVA (respectively 0,35 [0,03;0,7] and 0,07 [0,04;0,5]). Conclusions: More than half of the patients required prompt surgical approach for VH of unknown origin, therefore delayed action can lead to unfavourable visual prognosis.
PAEDIATRIC OPHTHALMOLOGY AND STRABISMUS

P-1

Case Report

Author: Dr. Vineta Aizkalne
Contact email: vineta.aizkalne@gmail.com
Author’s working institution: Children’s Clinical University hospital (Riga)
Co-authors: Dr. Rometa Valtere, Dr. Sandra Valeinė, Dr. L. Berķe, Dr. G. Tauriņa
Co-author’s working institution: Children’s Clinical University hospital (Riga)

Abstract Fazio Londe Syndrome is a rare neurological disorder presenting with progressive bulbar palsy with respiratory failure. Is now found to be due to mutations in the SLC52A3 gene which encodes the intestinal (hRFT2) riboflavin transporter in some children. We report an 8-year-old child with features of Fazio Londe syndrome who presented to our Children's Clinical University hospital with respiratory failure and reduced visual acuity. Introduction Fazio Londe disease is a rare variant of the common neurodegenerative disorder. Case report The boy was hospitalised at 10 months. age (2011) with respiratory distress, drowsiness, progressive instability, eyelid ptosis. The baby was born healthy. The only child in the family. Family history does not have a congenital, hereditary or neurological disease. During hospitalization increases respiratory failure. Radiologically detected (RTG) aspiration type pneumonia and bronchial drainage disorders. When oxygen saturation decreases, artificial respiration begins, after 10 days tracheostomy is was done. No data on congenital heart disease, abnormal changes in abdominal organs. Geneticists conduct counseling and, after the prescribed examinations, concluded that there is a metabolic disorder - Multiple acylcoccocal A dehydrogenase deficiency. Eye doctor consultation (2011) - No signs of inflammation of the eye, pupils symmetrical. F.o.c.: OU RND pale pink, border sharp, blood vessels and retinal pathology not seen. In 2016, the eye doctor finds lower vision. Status Ophthalmicus: Far vision: Vod 20/100 nc./ Vos 20/70 nc. Near vision: Vod 20/50 nc. / Vos 20/nc. Color test vision 100%, stereovision – no (LANGE I), Convergence- norma. AT Far vision/near vision esotropia Bagolini tests- pozitive. Vorsa test show binocular vision aBagolini tests- pozitive. Vorsa test show binocular vision appear. Autorefractometer (after Sol Cyclogyl).: Od 1,00 0,25 30 Os 0,5 -0,75 50 Vison fields 2017.y. un 2018.y. OU NO changes. OCT (2018.y. April): RND changed, whitish, temporal fiber reduction (RNFL), the macula structure and shape preserved. Suspected secondary subatrophies of both eyes. Conclusion Breathing disorders are described more in literature, but the function of decreased visual visual acuity is not mentioned.
GLAUCOMA

G-1

Incidence of pseudoexfoliation syndrome and it’s association with non infectious eye deseases in Kaunas (Lithuania)

Author: Ugnė Rumelaitienė
Contact email: ugne_jasinskaite@yahoo.com
Author’s working institution: Department of Ophthalmology, Lithuanian University of Health Sciences, Kaunas, Lithuania
Co- authors: Prof. Dalia Žaliūnienė
Co-author’s working institution: Department of Ophthalmology, Lithuanian University of Health Sciences, Kaunas, Lithuania

Title: Incidence of pseudoexfoliation syndrome and it’s association with non infectious eye deseases in Kaunas (Lithuania) Purpose: To investigate the prevalence of pseudoexfoliation syndrome (PEX) and it’s association with cataract and glaucoma in elderly population in Kaunas. Methods: This follow-up study (2016) is part of prospective cohort study on Health, Alcohol and Psychosocial factors In Eastern Europe (HAPIEE)[1]. Baseline study was conducted in 2006 when 1033 participants were drawn from main HAPIEE study for ophthalmic examination. 686 participants (55-83 years-old ) were examined. 55 participants were excluded because of difficult determination of PEX in subjects with both pseudophakic eyes. For cataract and glaucoma distribution each eye was kept as object (1262 cases). Ophthalmological examination included thorough biomicroscopy; after diagnostic mydriasis diagnosis of PEX was approved by presence of typical grayish-white exfoliation material on the anterior capsule surface of the lens or elsewhere in the anterior chamber. Lens opacification was evaluated by LOCS III international classification (evaluation 0,1-5,9)[2]. Statistical analysis was performed using IBM SPSS Statistics version 20 software. Results: PEX was found in 216 (34.2%) participants, slightly more in men 85 (35.6%) than in women 131 (33.4%) (p>0.05). Cataract was diagnosed in 1116 eye (819 (73.4%) in No-PEX, 297 (26.6%) in PEX groups). Nuclear cataract was found in 591 (72.2%) vs. 198 (66.7%), mixed 224 (27.4%) vs. 99 (33.3%) cases respectively, cortical and subcapsular in 2 cases in No-PEX group (p>0.05). There were 113 glaucoma cases, 63 (6.7%) in No-PEX vs. 50 (15.3%) in PEX group.
Cost Comparison of Care Between Different Stage Glaucoma Patients

Author: Miglė Lindžiūtė
Contact email: migle.lindziute@gmail.com
Author’s working institution: Faculty of Medicine, Lithuanian University of Health Sciences, Kaunas, Lithuania
Co-authors: Prof. Ingrida Janulevičienė
Co-author’s working institution: Department of Ophthalmology, Lithuanian University of Health Sciences, Kaunas, Lithuania

Background: Glaucoma is a neurodegenerative disorder in which degenerating retinal ganglion cells produce visual disability [1]. Since glaucomatous damage is irreversible patients require treatment for the rest of their lives. Lifelong treatment poses a financial challenge to patients and this affects drug compliance which plays a major role in treatment outcome [2]. Patients need more antiglaucoma medications as the disease progresses, this suggests that direct costs of glaucoma treatment increase as disease severity worsens [3-4]. However, there is insufficient information about direct costs of glaucoma care in Lithuania as socioeconomic aspects of glaucoma have not been investigated.

Aim: To compare glaucoma treatment costs for early and moderate stage glaucoma patients.

Methods: A descriptive observational study was conducted in the Eye Clinic of the Hospital of Lithuanian University of Health Sciences Kauno Klinikos. An original questionnaire was administered to 80 open angle glaucoma patients. The Hodapp–Parrish–Anderson classification was used to divide patients into two main groups of early (37 patients) and moderate (43 patients) stage glaucoma. Statistical analysis was performed using SPSS v. 17.0. Student’s t-tests, one-way analysis of variance (ANOVA), Mann-Whitney U test, Chi-square test, Pearson correlation and Cramer’s V coefficient factor were used. Results with p<0.05 were interpreted as statically significant.

Results: Moderate stage glaucoma patients were older than early stage glaucoma patients (73(±8) years old vs. 63(±11) years old; p<0.001). Early stage glaucoma patients visited their ophthalmologist 2.5(±1.5) times per year, while patients with moderate glaucoma had 4.4(±2.7) visits (p<0.001). Patients with early stage
Glaucoma used 1.8(±0.9) medications on average while patients with moderate glaucoma used 2.9(±0.9) medications (p<0.001). Most patients’ income was distributed in groups up to 300 Euros and from 300 to 500 Euros while only less than a fifth had an income higher than 500 Euros. Combined costs for treatment and transportation made up an average of 4.7% of patients’ income. Early stage glaucoma patients spent about 3.2% of their annual income for glaucoma care and transportation, while moderate stage glaucoma patients spent about 5.9% of their income (p=0.003). Employed patients spent about 2.7% of their income on direct glaucoma costs while retired participants spent 5.9% of their earnings, p=0.001.

**Conclusions:** Costs related to glaucoma made up a considerable amount of all patients’ income. Some patients’ groups were affected more than others. Moderate stage glaucoma patients had significantly higher glaucoma care costs than early stage glaucoma patients. Costs related to glaucoma made up a higher part of retired patients’ income than of patients that were employed. The fact that retired patients had a lower income, higher glaucoma costs and also had moderate glaucoma more frequently because of duration of glaucoma made them a more socially vulnerable group. This shows that early detection and treatment of glaucoma can significantly reduce the economic burden of this disease.

**References:**
Rare congenital iris membrane with secondary glaucoma: a case report

Author: Pille Tein
Contact email: pille.tein@itk.ee
Author’s working institution: Tallinn Eye Clinic

Purpose: To present evaluation and treatment of a child with rare congenital iris membrane.

Subject: Mother turned to emergency room with a 4-month-old girl with left eye corneal clouding and buphthalmos, epiphora and IOP 40mmHg. One week after birth, the mother noticed that the pupil of the left eye was different and the eyeball was enlarged, but the GP decided to wait.

Methods: Operation (deep sclerectomy with trabeculotomy and pupillotomy) was performed immediately and the most accurate measurements were obtained during examination under anesthesia. During operation, congenital iris membrane was discovered and there was no pupil and anterior chamber in the left eye. Preoperative IOP was 14mmHg RE, 40mmHg LE (iCare) Mean corneal diameter od 10 x 10,5mm/ os 13,5 x 13,5mm Corneal status: corneal clouding, buphthalmos

Results: Postoperative examination IOP with ICare was normal: 11mmHg RE, 10mmHg LE Buphthalmos and trabeculodysgenesis. Cycloplegic refraction – increasing axial length and myopia od= 2,75D sph/ os = -4,75D sph Imaging of optic disc with Ret-Cam were performed. During a follow-up period of 2y and 5m after the surgeries the IOP remained normal. Postoperatively IOP was 12mmHg RE, 15mmHg LE Corneal diameter od 10 x 11mm/ os 11 x 12mm and Haab`s striae Last examination was 2y and 6m after the surgery. The IOP was 10mmHg RE, 13mmHg LE Stabilization of disc cupping and ocular axial length has been achieved without additional glaucoma surgery or medications. Visual acuity: fixed and follows objects. Under mydriasis the pupil enlarges and is with posterior synechiae. Patient has good control of IOP.

Conclusion: It is important to recognize congenital iris membrane as soon as possible, as it has impact on vision. Timely pupillotomy is necessary to restore vision and to treat angle closure glaucoma.
Morphologic Changes of Lamina Cribrosa in Glaucomatous Eyes after Trabeculectomy

Author: Aistė Kadziauskienė
Contact email: aistedam@gmail.com
Author’s working institution: Clinic of Ears, Nose, Throat and Eye Diseases, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University. Center of Eye Diseases, Vilnius University Hospital Santaros Klinikos.
Co-authors: Ernesta Jašinskienė [1], Rimvydas Ašoklis [1, 2], Eugenijus Lesinskas [1, 2], Leopold Schmetterer [3, 4, 5, 6, 7]

Introduction. The biomechanical paradigm of glaucoma postulates that elevated intraocular pressure (IOP) causes compression, stretch, and shear of a lamina cribrosa (LC), which lead to LC deformations, strains on glial cells, and subsequent damage of the retinal ganglion cell axons [1, 2]. LC morphology has been shown to relate to the onset and progression of glaucoma [3-5]. Thus, all morphologic parameters describing the biomechanics of the LC in relation to IOP are of great importance to provide insights into the mechanisms of glaucoma pathogenesis and treatment. Purpose. To evaluate morphologic changes of the LC in glaucoma-affected eyes following trabeculectomy as well as to assess their relationship to biometric and clinical ocular parameters. Methods. The prospective longitudinal study included 112 patients (118 eyes) with glaucoma undergoing trabeculectomy. The LC was imaged using spectral-domain optical coherence tomography before trabeculectomy and during six follow-up visits throughout the first postoperative year. The mean and sectoral LC depths, nasal-temporal (N-T) and superior-inferior (S-I) curvatures, and global shape index (GSI) were measured. The pre- and postoperative measurements were compared using the Nemenyi post-hoc test; a linear mixed model analysis was performed to evaluate the associations between the LC morphologic changes with possible explanatory variables. Results. After trabeculectomy the mean and sectoral LC depth decreased
from baseline at all follow-up visits (449 ±129 µm, 412 ±112 µm, 385 ±100 µm, 383 ±101 µm, P < 0.001, the mean LC depth at baseline, 3-10 days, 6 months and 12 months after the surgery respectively). The LC shallowing progressed up to the sixth postoperative month. Twenty-eight patients showed a deepening of the LC from baseline in at least one follow-up visit. Eyes with shallower LC compared with baseline responded to IOP reduction with greater movement anteriorly (β = 1.67, P < 0.001) than eyes with deeper LC (β = 0.84, P = 0.002). There was a flattening of the LC curvature in N-T (P < 0.001) and S-I (P = 0.003) meridians 12 months after trabeculectomy. The mean LC GSI increased only during the early postoperative period (P = 0.02). Younger age and IOP reduction were related to LC shallowing (β = -2.27 µm/m., P < 0.001; β = 2.78 µm/mmhg, P = 0.002, respectively) and N-T flattening (β = 3.23 mm-1/m., β = -5.92 mm-1/mmhg, P < 0.001, respectively). Greater RNFL thinning during a postoperative year was associated with greater LC shallowing (β = 0.016 µm/µm, P < 0.001), N-T flattening (β = 0.005 µm/mm-1, P = 0.007), and GSI change (β = 0.002 µm/e-3, P = 0.048). Conclusions. In most eyes, trabeculectomy resulted in a long-term flattening and shallowing of the LC, which tended to stabilize after 6 months. Notably, in some eyes, the LC deepened from baseline, revealing bidirectional behavior after the surgery. Change in LC global shape was temporal. Reduction of IOP and age of the patient played an important role in the postoperative LC change. The greater LC morphologic changes were significantly related to the progression of glaucoma after trabeculectomy.

G-5

Comparison of filtering bleb characteristics using anterior segment OCT: minimally invasive glaucoma surgery vs. trabeculectomy

Author: Oskars Gertners
Contact email: oskarsgertners@gmail.com
Author’s working institution: Pauls Stradins Clinical University Hospital; Riga Stradins University
Co-authors: Guna Laganovska
Co-author’s working institution: Pauls Stradins Clinical University Hospital; Riga Stradins University

Introduction
Minimally invasive glaucoma surgery (MIGS) is a modern alternative to traditional trabeculectomy. Filtering bleb ultrastructure can be evaluated in-vivo using anterior segment optical coherence tomography (AS-OCT). Materials and methods
Retrospective case control study was conducted. Inclusion criteria (age >18 years; primary open-angle glaucoma patients who underwent MIGS with XEN implantation), exclusion criteria (other forms of glaucoma; follow up time less than 3 months; previous trabeculectomy). Nine patients were included in this study and were matched for age, gender, preoperative intraocular pressure (IOP). 18 (eighteen) patients formed two groups (nine MIGS – study; and nine trabeculectomy- control). Filtering bleb images were acquired using AS-OCT (Heidelberg Spectralis). Acquired data (pre- and postoperative IOP, filtering bleb height and width) were analysed using Microsoft Office Excel 2016. Results
18 (eighteen) patients were included in this study (9 study and 9 control). Mean ages were 69.6 years (study; SD-5.5) and 67.5 (control; SD- 8.0) (p=0.15). Mean preoperative IOP was 28.4 mm/Hg (study; SD- 2.5) and 30.0 mm/Hg (control; SD- 2.5) (p=0.14). Mean postoperative IOP was 16.9 mm/Hg (study; SD- 4.1) and 14.6 mm/Hg (control; SD- 4.4) (p=0.10). Mean filtering bleb height was 488.2 mkm (study; SD- 274) and 470 mkm (control; SD- 353) (p=0.45); Mean filtering bleb width was 2452 mkm (study; SD- 724) and 4131 (control; SD-1529) (p=0.01). Conclusions
Minimally invasive glaucoma surgery is an effective surgical treatment method for primary glaucoma patients. Filtering blebs can be successfully evaluated in-vivo with AS-OCT. Filtering bleb height was similar in both groups. Filtering bleb width was smaller in MIGS group compared to control.
**G-6**

**Comparison of anterior segment characteristics in cataract patients with or without glaucoma**

**Author**: Giedre Pakuliene  
**Contact email**: giedrepakuliene@gmail.com  
**Author’s working institution**: Lithuanian University Of Health Sciences  
**Co-authors**: Prof. dr. Ingrida Januleviciene  
**Co-author’s working institution**: Lithuanian University Of Health Sciences

**Abstract text (Abstracts should have a maximum of 500 words (excluding references))**: Introduction: Glaucoma is the leading cause of irreversible blindness in the world. The exact mechanism of glaucoma is still debatable. Aqueous humour drainage plays a major role in glaucoma pathogenesis as well as in glaucoma medications’ mechanism of action[1]. Aims: The purpose of our study was to investigate subtle anatomical differences of anterior chamber angle, Schlemm’s canal area, lens and corneal thickness, in patients scheduled for cataract surgery. Methods: A prospective comparative study of subjects, scheduled for cataract surgery, either treated for open angle glaucoma (OAG) or otherwise healthy controls. All of the subjects underwent full ophthalmic examination, anterior segment swept source optical coherence tomography (SS-OCT)(DRI OCT Triton plus(Ver.10.13)) and swept source optical biometry (IOL Master 700 v1.7). The SS-OCT images were processed and evaluated using Fiji program package[3]. Narrow anterior chamber angle was considered 0.05)(Mann-Whitney U Test). Gender distribution was similar in both groups (27% male and 73% female in glaucoma group and 31% male and 79% female in control group) (p>0.05) (Pearson's Chi square). We were unable to evaluate 6 subjects’ anterior chamber angles due to anatomical characteristics. The mean (SE) anterior chamber angle was 29.0 degrees (2.6) in glaucoma group and 30.2 degrees (1.8) in control group (p>0.05) (Mann-Whitney U Test). Anterior chamber angle was narrow in 28.6% cases (n=6) in glaucoma group and in 8% cases (n=20) in control group (p=0.067) (Pearson’s Chi square). The mean (SE) Schlemm’s canal area were 0.0034 (0.0003) mm2 in glaucoma group and 0.0033 (0.0003)mm2 in control group (p>0.05) (Mann-Whitney U Test). Lens thickness mean (SE) 4.6 (0.06) mm in control group and 4.7 (0.07) in glaucoma group (p>0.05) (Student T test). Lens thickness >5mm was observed in 15.4% in control group and 28.6% in glaucoma group
(p=0.364) (Pearson’s Chi square). Corneal thickness mean (SE) was 565.3 (8.6) mm in control group and 533.2 (6.7) mm in glaucoma group (p=0.07) (Student T Test). Conclusions: Corneal thickness was lower in subjects with glaucoma. We observed, that glaucoma group subjects tended to have narrow angle or lens >5 mm of thickness on the higher percentage of cases. Schlemm’s canal area was similar in both groups. Further studies are needed to evaluate possible factors, that may influence the observed changes.

OCULOPLASTICS AND ONCOLOGY

OO-1

Sebaceous gland carcinoma of the eyelids: 20 years’ experience in Finland

Author: Paula Niinimäki
Contact email: paula.niinimaki@hus.fi
Author’s working institution: Department of Ophthalmology, Helsinki University Hospital and University of Helsinki, Helsinki, Finland
Co-authors: Mika Siuko, Olli Tynninen, Tero Kivelä, Marita Uusitalo
Co-author's working institution: Department of Ophthalmology, Helsinki University Hospital and University of Helsinki, Helsinki, Finland and Department of Pathology, Helsinki University Hospital and University of Helsinki, Helsinki, Finland

Purpose of the study: To evaluate clinical features, diagnostic challenges, management and prognosis of sebaceous gland carcinoma (SGC) of the eyelid and adjacent structures.

Methods: Patient charts from Finnish Cancer Registry and Helsinki University Hospital databases were reviewed during a 20-year period (1998–2018). Information regarding distribution of age and sex, localization, suspected clinical and histologic diagnosis, treatment, follow up and recurrences were registered. SPSS for Windows, version 22.0 (IBM Corp, Armonk, NY, USA) was used for statistical analysis.

RESULTS: A total of 32 patients were identified with SGC of the eyelids and ocular adnexa in histopathology. The median age at the time of the diagnosis was 74 years. Most patients were women (72%). The SGC was located in the upper eyelid in 17 (53%) patients, in the lower eyelid in 12 (38%) patients, both in upper and in lower eyelids in two (6%) patients and in caruncula in one (3%) patient. The delay of the diagnosis of SGC was often significant: median time from the first symptoms to the final diagnosis was 12 months. Most common cause for this delay was incorrect diagnosis (87%), which in 14 (45%) was chalazion, other malignant tumor in 9 (29%) and a benign tumor in 8 (26%). Typical initial histopathologic misdiagnoses were squamous cell carcinoma and basal cell carcinoma. Most patients (94%) were treated surgically. Surgical margins were inadequate in seven patients (22%). The most common symptom that patients with SGC complained about after the surgical operation was irritation of
the operated eye (30%). During the five years of follow-up two patients had local recurrence. One patient died from metastatic SGC.

**Conclusions:** Most of the patients were female and median age at the time of the diagnosis of SGC was quite old. The most common anatomic site was upper eyelid, probably because of the larger area of tarsus with Meibomian glands compared to the lower eyelid. As the diagnosis of SGC is often significantly delayed, especially the differential diagnosis of chalazion is essential. Histopathologic diagnosis is also challenging, which underlines the importance of experienced pathologists. Because of the potential life threatening features of the SGC, adequate follow-up is needed.
Exophthalmic ophthalmoplegia, Graves infiltrative ophthalmopathy, distyreoid ophthalmoplegia, endocrine ophthalmopathy, thyroid-associated orbitopathy is a pathology of the oculomotor apparatus, autoimmune disease of unclear etiology, often unrelated to thyroid dysfunction. It is triggered by antithyroid antibodies (antithyroglobulin and antimicrosomal) and antithyroglobulin immune complexes, which cause autoimmune reactions in extraocular muscles and in soft tissues of the orbit. Disorder in the oculomotor muscles may appear long before, simultaneously or after the onset of thyrotoxicosis, after cure of thyrotoxicosis, or as an independent disease, not associated with thyroid pathology. Cellular immune response appears due to sensibilization of T-and B-lymphocytes of peripheral blood to the antigen of extraocular muscle membranes and retrobulbar formations. Clinically, along with exophthalmos, painful palpation of eyeballs, retraction of the upper eyelid, restriction of movement of the eyeballs and diplopia are observed. In the early phase of the disease, movement of the eyeball is limited to the side of the disordered muscle, but in the late phase, when fibrosis and sclerosis of the muscle are expressed, the eyeball is deflected to the side of disordered muscle. The degree of exophthalmos and paresis of extraocular muscles varies depending on the increase in muscle size, amount of orbital fat, and degree of the edema of retrobulbar fiber. About 5% of patients with endocrine ophthalmopathy (EOP) need surgical treatment. The purpose of the article is to substantiate the effectiveness of the plastic method with elongation of sclerosed muscle with exophthalmic strabismus. Material and methods. Depending on the squint angle of strabismus and the rigidity of extraocular muscle, the volume of elongation varied from 4 to 12 mm. Under local retrobulbar anesthesia with solution of articaine 4.0 incision of conjunctiva in the projection of attachment of the affected muscle was implemented, the muscle was separated. Suture was placed under the tendon, with which the muscle was strained. 2 locking stitches (vicryl 7-00) were put on 1/3 of the muscle from the lateral sides at the suspension
of tendon, these parts of the tendon were cut off from the point of suspension to sclera and the middle portion was separated along the muscle, it was separated for the necessary magnitude of the muscle elongation (from 4 to 12 mm), where it was cut off and connected to the lateral portions of the muscle. A continuous suture was applied to the conjunctiva (vicryl 8-00). Antibiotic with long-acting glucocorticoid (betamethasone) was administered under the conjunctiva. In the postoperative period, the patient continued to receive antibiotics and glucocorticoids for 3 weeks in a descending pattern in the form of instillations.

Results. Strabismus surgery was performed during inactive period, when the angle of deviation of the eye was stable for 6 months. Five patients with squint angle from 15 to 25 degrees and restriction of movement from the affected muscle were operated. In all the cases we have achieved the absence of diplopia in direct view, although the restriction of movement in 3 cases remained. Findings. This method is aimed at minimizing diplopia and to achieve binocular vision.

**OO-3**

**Development of lacrimal surgery in Estonia, example of one family**

**Author:** Kadi Palumaa  
**Contact email:** kadi.palumaa@itk.ee  
**Author’s working institution:** East Tallinn Central Hospital Eye Clinic, Tallinn, Estonia

Introduction  
Lacrimal surgery began in 1904 when Addeo Toti first described external dacryocystorhinostomy (DCR) to treat chronic dacryocystitis. Many new methods have been created since, but external DCR still remains a treatment option in special cases.  

**Aim**  
The aim of this presentation is to discuss the treatment options and patient selection for different lacrimal surgery operating methods.  

**Methods**  
Here we present three lacrimal surgery cases, all from the same family. All of them had similar developmental problems of lacrimal system. They were treated according to their medical problem and technical possibilities available at the time of referral.  

**Statistics and development of lacrimal surgery**  
Statistics and development of lacrimal surgery in Tallinn Eye Clinic is presented.  

**Summary**  
The father of the family underwent an external DCR when he was a child and the same method was used years later to treat his eldest daughter. As technology advanced, the second daughter was already treated with endonasal DCR using a direct endoscope. All the described patients of the family have satisfactory functional and cosmetic results. Lacrimal surgery in Estonia has developed rapidly since 2006. Bicanalicular silicone intubation and external DCR were the main operation methods in the first years. Direct endonasal DCR was introduced in 2013. Since August 2018, endonasal endoscopic DCR with screen is used. Bicanalicular silicone intubation gives good results especially in children with canalicular stenosis, but also in some adults with the same problem. Endonasal DCR is the preferred operation method for treating patients with chronic dacryocystitis. External DCR is still used mostly for patients for whom endonasal DCR is contraindicated.  

**Conclusions**  
Lacrimal surgery techniques have developed rapidly in recent decades. Differential diagnosis is important to make proper patient selection for certain operation method. In our clinic approximately 60 lacrimal system surgeries are performed every year with endonasal DCR, external DCR and bicanalicular intubation all relatively equal in proportion.
Ocular recurrence of primary central nervous system lymphoma: 2 clinical cases

Author: Augustina Grigaitė
Contact email: augustina.grigaite@gmail.com
Author’s working institution: Vilnius University Hospital Santaros Klinikos, Center of Eye Diseases
Co-authors: Andrius Cimbalas, Dovilė Šimkienė, Ramūnas Riauka
Co-author’s working institution: Vilnius University Hospital Santaros Klinikos, Center of Eye Diseases

Aim: We present two clinical cases of primary central nervous system diffuse large B-cell lymphoma (DLBCL) recurrence in the eye. Methods: 1st patient, a 36 year old female, was referred to our clinic on 15 January 2019. She complained of worsening left eye vision during the previous month. On presentation best corrected visual acuity (BCVA) in the left eye was 0.5. The eye had mild vitreous haze and in the fundus small yellow lesions in the center and parafoveally were observed. Optical coherence tomography (OCT) revealed diffuse retinal and optic nerve head swelling. The patient was diagnosed with primary DLBC lymphoma in 2016. She received 4 courses of chemotherapy with high dose methotrexate. Brain MRI performed 2 months post chemotherapy revealed complete resolution of the lesions. In 2017 the patient underwent autologous bone marrow transplant and complete remission was achieved. Since then the patient had regular check-ups. After ophthalmologic evaluation, a suspicion of tumor recurrence was raised. Whole body CT scan, complete blood work and brain MRI showed no signs of relapse. It was decided to perform a vitreous biopsy and cytology to confirm the diagnosis. Old histological samples from 2016 brain biopsy were reanalyzed and compared to the new vitreous samples. Same clonality profile and gene mutation were found. Therefore, the diagnosis of relapse of primary CNS lymphoma was confirmed and it was decided to start systemic chemotherapy. Yellow lesions in the fundus have diminished and diffuse retinal and ONH swelling had reduced. After a second chemotherapy course left eye BCVA improved to 0.7. Hematologists are planning a local ocular radiotherapy course is planned after four courses of systemic chemotherapy.

2nd patient was a 55 year old woman who presented to our department due to worsened left eye vision for a few months. She was diagnosed with primary CNS DLBCL in 2013. She had received 6 courses of systemic chemotherapy. In 2013 after an autologous bone marrow transplant,
a complete remission was achieved. She had no check-ups since 2016. This patient had classic intraocular lymphoma presentation in her left fundus: massive subretinal infiltrates with “leopard skin” pigmentation. Left eye vision was 0.02. The patient was referred to hematologists and a brain MRI revealed new lesions in left parietal lobe. A stereotactic biopsy of the lesions confirmed the relapse of DBCL. Chemotherapy was initiated. On a check up left fundus revealed almost a complete resolution of subretinal infiltrates although vision remained 0.08. The patient is planned to receive two more courses of systemic chemotherapy and afterwards a consolidation with radiotherapy is being considered.

**Conclusions:** Ocular DLBC lymphoma is a rare disease which accounts for < 1% of all intraocular tumors [1]. The optimal treatment method for ocular DLBCL remains unclear [2]. It is considered that it is important to eradicate lesions in the eye to remove the disease reservoir, although according to clinical studies it does not improve disease outcomes and survival rates [2,3]. The role of local radiotherapy still has to be established.

OO-5

Cutaneous Melanoma with Choroidal Metastases and Response to Systemic Therapy

Author: Eglė Baliutavičiūtė
Author’s working institution: Lithuanian University of Health Sciences
Co-authors: Neringa Taparauskaitė, Goda Miniauskienė
Co-author’s working institution: Hospital of Lithuanian University of Health Sciences Kauno klinikos

Introduction: The most common ocular tumours are metastases [1]. They predominantly arise from breast, lungs and gastrointestinal cancers [2]. Metastatic cutaneous melanoma represents less than 5% of ocular and orbital metastases [2]. Cutaneous melanoma is the most common type of melanomas with incidence rate of 10.2 cases per 100 000 people in Europe [3]. Melanoma develops from uncontrollably proliferating melanocytes and is responsible for 5% of all cutaneous malignancies [4]. Lungs, liver and brain are the most common metastastic sites while ocular involvement is rare [5]. Choroid is often affected due to good vascularisation, metastases are more aggressive than primary uveal melanomas [1]. Initial treatment consists of excision of primary cutaneous melanoma and lymph nodes with metastases. Systemic therapy is used to prevent tumour spreading and shows good results [1].

Methods: Presentation of clinical findings and imaging of a patient with cutaneous melanoma with choroidal metastases.

Case: A 41-year-old woman presented with a month of progressive blurry vision in left eye. She had a surgical melanoma excision in her back two years ago. One year and eight months after the surgery metastases in axillary lymph nodes were detected and removed. After lymph nodes excision the patient was treated with interferon 3 times per day. On ophthalmological examination three months later her corrected visual acuity was 0.4 in the left eye and an elevated pigmented choroidal lesion with associated retinal detachment in the fundus of left eye was revealed. After the diagnosis of ocular metastases, treatment with vemurafenib and cobimetinib was started and vision acuity with fundus examination showed improvement after one month of treatment. One year later this treatment was changed to nivolumab because subcutaneous and brain metastases were detected. At the same time metastatic reactivation in the same eye and uveitis in her right
eye were diagnosed. Patient is being treated with nivolumab at the moment.

**Conclusion:** Ocular metastases from cutaneous melanoma are rarely present. Although in this case firstly they responded to the treatment with vemurafenib and cobimetinib positively, one year later metastases in other localizations appeared and choroidal metastases reactivated. Nivolumab was prescribed and we expect results of this treatment.

**References:**
UVEITIS AND OTHER INTRAOCULAR INFLAMATION

U-1

Posterior scleritis: case series

Author: Vaiva Stankeviciute, MD
Contact email: vaiva.stank@gmail.com
Author’s working institution: Center of Eye Diseases, Clinic of Ear, Nose, Throat, and Eye Diseases, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University
Co-authors: Rasa Strupaite, MD, PHD, I.Strupaite-Sakaliene, Andrius Cimbalas, MD, PHD, Rimvydas Asoklis, MD, PHD, FEBO.
Co-author’s working institution: Center of Eye Diseases, Clinic of Ear, Nose, Throat, and Eye Diseases, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University

Brief introduction: Posterior scleritis is a rare yet potentially vision-threatening condition that is often underdiagnosed due to its perplexing and varied clinical presentation. Aim The aim of these cases is to portray different aetiologies, presentation, pathogenesis and diagnosis of posterior scleritis. Methods 3 patients admitted to Vilnius University Santaros Clinics were diagnosed with posterior scleritis. Detailed anamnesis was gathered. Ophthalmic examination, including visual acuity, intraocular pressure, slit lamp and fundus examination, B-scan, OCT and FA were performed. Various blood testing, including specific immunologic, rheumatologic and dermatologic tests were completed. Patients were also consulted by other doctor specialists. Results 3 patients (40-year-old Asian male, 38-year-old Caucasian male and 58-year-old Caucasian female) diagnosed with posterior scleritis received treatment with both oral and topical steroids and NSAID. During the course of the treatment patients’ symptoms, including severe pain and redness of the eye, painful eye movements, decreased vision and refractive error, nearly disappeared. Ophthalmic symptoms, including swollen eyelids, engorged episcleral veins, conjunctival injection, chemosis and choroidal folds, markedly improved. Pathologic changes observed with B-scan, OCT and FA diminished. Blood testing along with specialist’s consultations revealed unknown systemic disease or untreated infection. Conclusion The case series portrayed different aetiologies, presentation, pathogenesis and diagnosis of the same disease - posterior scleritis. In order to diagnose this rare condition better it is crucial to discuss and educate ourselves about diverse manifestations, possible aetiologies and treatment possibilities of posterior scleritis.

U-2

Acute Posterior Multifocal Placoid Pigment Epitheliopathy Associated with Chronic Pulmonary embolism and Angioleiomyoma

Author: Indrė Meiliūnienė
Author’s working institution: Lithuanian University of Health Sciences
Co-authors: Goda Miniauskienė Reda Žemaitienė
Co-author’s working institution: Hospital of Lithuanian University of Health Sciences Kauno klinikos

Introduction: Acute posterior multifocal placoid pigment epitheliopathy (APMPPE) is an inflammatory chorioretinopathy characterized by a rapid onset of visual loss associated with central and paracentral scotomas in young adults. The exact etiology of APMPPE is unknown, however some believe that it is secondary to a delayed-type hypersensitivity-induced occlusive vasculitis [1]. APMPPE has been described in cases associated with systemic diseases [2,3].

Aim of the report: The aim of this report is to present a case of acute posterior multifocal placoid pigment epitheliopathy (APMPPE) associated with chronic pulmonary embolism and angioleiomyoma.

Results: 43 years old female presented with a visual deterioration and complains of chills, weakness, muscle and joints pain. Basic ophthalmic examination, optical coherence tomography (OCT) and laboratory tests were performed. Consultant specialists recommended some additional diagnostic methods – computed tomography (CT) scan of the chest revealed chronic pulmonary embolism and heterogenic masses in the inferior vena cava and right atrial. Cardiac magnetic resonance imaging (MRI), cardiac and abdominal ultrasound, abdominal CT, MRI of the pelvis, scetcal scintigraphy data needed to be differenciated between thrombotic masses and oncological process. Thoracolaparotomy was performed for diagnostic ant treatment purposes. Angioleiomyoma of the inferior vena cava and right atrial was diagnosed.

Conclusions: The exact cause of acute posterior multifocal placoid pigment epitheliopathy is not known. This report adds to the literature of a novel association of APMPPE with pulmonary embolism and angioleiomyoma. It is important that all patients with a new diagnosis of APMPPE should receive a full systemic work-up to evaluate other systemic conditions.
POSTER PRESENTATIONS

P-01

Epiretinal membrane peeling for combined hamartoma of the retina and retinal pigment epithelium.

Authors: Agne Krucaite, Arvydas Gelzinis, Arunas Miliauskas

Introduction: Combined hamartoma of the retina and retinal pigment epithelium (CHRRPE) is a rare benign tumor of neurosensory retina and retinal pigment epithelium usually found in children. Surgical treatment of epiretinal membrane associated with CHRRPE is still a subject of debate.

Methods: A case report.

Results: A 7-year-old female was referred to our department due to vision loss and changes in the fundus of her right eye. Her last ophthalmic examination was normal one year ago. The referral diagnosis was toxocariasis. Best corrected visual acuity in the right eye was 0.15. A grey solitary tumor with epiretinal membrane, tortuous vessels and traction was found in the macula. Optical coherence tomography (OCT) showed signs of CHRRPE. Pars plana vitrectomy was performed with epiretinal membrane peeling. The macular traction was reduced and visual acuity remained stable after the surgery.

Conclusion: CHRRPE can be diagnosed late as children lack of ability to notice vision loss in one eye. OCT is important in differential diagnosis of CHRRPE and follow up for cooperative patients. Surgical treatment of epiretinal membrane associated with CHRRPE is a safe procedure to improve retinal architecture.
P-02
Optical iridectomy in infant with Peters plus syndrome

Authors: Agne Krucaite, Arvydas Gelzinis, Arunas Miliauskas, Reda Zemaitiene

Introduction: Peters Plus syndrome is a rare genetic condition characterized by ocular, auditory, facial, genitourinary system, cardiac abnormalities and developmental delay. Peters anomaly is the most common ocular dysgenesis causing corneal opacification at birth and severe amblyopia. Systemic malformations, young age and postoperative care contribute to the difficulties in surgical treatment.

Methods: A case report

Results: A 2-month-old female was referred to our ophthalmology department due to nystagmus and corneal opacities. She was born at 38 weeks’ gestation. Her birth weight was 2100 grams. She is the first child in the family born after 6 miscarriages. Red reflex screening was not performed due to narrow palpebral fissure. Anterior segment examination under general anesthesia showed corneal opacity in the inferonasal quadrant with iridocorneal adhesion and corectopia in the right eye. Diffuse corneal opacification with minimal view of the anterior segment was seen in the left eye. The intraocular pressure (IOP) was 22.4 mmHg in the right eye and 24.4 mmHg (Icare) in the left eye. Horizontal corneal diameter was 9 mm in both eyes. Other malformed features found in the physical pediatric examination included: micrognathia, narrow nostrils, low position of the ears, brachydactyly, unilateral renal agenesis, ureteral ectopia, atrial septal defect, moderate hearing loss and severe developmental delay. Surgical optical-sector iridectomies were performed in both eyes. IOP was controlled with dorzolamide and timolol drops. Now the patient is 20-month-old. She is following the light and objects with her right eye, left eye is deviated inward. There is small residual horizontal nystagmus.

Conclusion: Optical-sector iridectomy is an effective choice of treatment in infants with moderate Peter anomaly and multiple congenital abnormalities to avoid systemic use of glucocorticoids and immunosuppressants after corneal transplantation.
P-03

**Idiopathic choroidal neovascularization in childhood: a case series report**

**Authors:** Tatjana Kisil, Jūratė Balčiūnienė, Arvydas Gelžinis, Reda Žemaitienė

**Introduction:** Choroidal neovascularization (CNV) involves the growth of new blood vessels that originate from the choroid through a break in the Bruch membrane into the sub–retinal pigment epithelium or subretinal space. In young patients CNV may arise in association with several conditions other than Age-related macular degeneration and pathologic myopia. These include angioid streaks, inflammations, macular dystrophy, trauma, tumors other disorders. In some cases, no specific cause can be identified, and these cases are known as idiopathic CNV. **Idiopathic CNV** is a disorder that primarily affecting patients younger than 50 years and it is a major cause of visual loss.

**Methods:** Case series

**Results:** 1 st case. 8 years old boy complained of the blurry vision of the right eye for about 2 month. His best corrected visual acuity (BCVA) (Snellen chart) in the right eye was 0.06 and 1.0 in the left eye. Patient had a prominent gray-brown lesion of the macula at funduscopy. Patient has been tested for toxoplasmosis, Lyme disease in other hospital. Full blood tests to rule out inflammatory pathology were normal. Macular OCT showed area of hiperreflection. In OCT angiography: small hyperreflective lesion in deep and outer retina and choriocapillaris layers. The idiopatic choroidal neovascularization was diagnosed. Treatment with intravitreal vascular endothelial growth factors inhibitors (anti-VEGF) was started. In 1 month after Bevacizumab intravitreal injection CNV reduced, BCVA increased up to 0.3. The patient is still observed. There is no progression. 2 nd case. 15 years old teenager complained of sudden black spot in right eye vision field. There was bleeding from the nose before blurry vision. Any trauma was denied. His BCVA (Snellen chart) of the right eye was 0.2 and and 1.0 of the left eye. Macular edema, pigmented area with intense haemorrhage were noticed during fundus examination in the right eye. Blood tests to rule out any inflammatory or coagulation pathology were normal.

Right eye macular OCT: irregular retinal pigment epithelium and hyperreflection under the macula and hyporeflective area under the neurosensory retina.
OCT-angiography: a small hyperreflective lesion in deep and outer retina and choriocapillaris layers. Fluorescein angiography (FA): small early hyperfluorescence with intense progressive leakage. OCT and FA allowed to suspect CNV. The idiopathic CNV was diagnosed. It was decided to start treatment with intravitreal anti-VEGF Bevacizumab. During treatment it was used 3 intravitreal injections. His right eye BCVA increased till 0.9. There was no progression, subretinal hyporeflective area has gone on OCT.

**Conclusion:** Early anti-VEGF treatment can stop idiopathic choroidal neovascularisation progression and achieve better results.
P-04

Optic disc pit maculopathy treatment

Authors: Jūratė Balčiūnienė, Tatjana Kisil, Arvydas Gelžinis, Reda Žemaitienė

Introduction: Optic disc pit (ODP) is a rare congenital abnormality of the optic nerve head. It can be complicated by a macular detachment associated with progressive visual loss. Serous maculopathy can occur in 25-75% of OPD.

Methods: Case report

Results: 11 years old girl with a complaint of right eye blurred vision was referred to our clinic. From the anamnesis there was a head ache before event. Her best corrected visual acuity BCVA (Snellen chart) of the right eye was 0.2 and 1.0 of the left eye. On fundoscopic examination a temporally located ODP associated with serous macular detachment was detected in the right eye, while no pathological changes were seen in the left eye. OCT revealed optic disc pit maculopathy in the right eye. Macular thickness was about 960 μm. Patient was treated with argon laser photocoagulation 3 times and topical NSAID (Nonsteroidal anti-inflammatory drug). After 6 months there was no significant optic nerve pit maculopathy regression. Next 6 month patient was followed using carboanhydrase inhibitors (CAI) drops 3 times a day and macular thickness decreased by 700 μm. 6 month more with CAI (Dorzolamide) drops and OCT imaging showed regression of the optic disc pit maculopathy. BCVA increased up to 1.0. The patient is still observed and there is no progression.

Conclusion: The development of optic pit maculopathy in childhood is rare and can cause visual impairment. There are not enough studies for the treatment methods. Our case shows that laser photocoagulation and long term treatment with CAI drops can effectively help to regress serous maculopathy, to prevent or at least delay surgical treatment.
P-05

Epidemiological characteristics and visual outcomes of pediatric ocular trauma

Author: Monika Vieversytė
Contact email: monikavieversyte@gmail.com
Author’s working institution: Lithuanian University of Health Sciences
Co-authors: dr. E. Puodžiuvienė
Co-author’s working institution: Lithuanian University of Health Sciences

Introduction: Pediatric trauma can lead to serious visual impairment as a result of the trauma itself or secondary to amblyopia. [1] Precise data on epidemiological characteristics and visual outcomes of pediatric ocular injuries are valuable for the prevention of monocular blindness. [2,3] Aim: To find out and evaluate epidemiological characteristics and visual outcomes of pediatric ocular trauma. Methods: A total of 268 cases of pediatric ocular trauma admitted to the Department of Ophthalmology of the Lithuanian University of Health Sciences Hospital from January 2008 to December 2013 were retrospectively reviewed. Data analysed included age, sex, cause, type and treatment of injury, initial and final visual acuity (VA) and tissues involvement. Eye injuries were classified by Birmingham Eye Trauma Terminology (BETT) and Ocular Trauma Classification System (OTCS). The Statistical Package for Social Science (SPSS 22.0) was used for statistical analysis. A statistical analysis of all quantitative data, including derive statistics, parametric and non-parametric comparisons was performed for all variables. Chi-square and Fischer’s exact test were performed to test differences in proportions of categorical variables between two or more groups, and the Wilcoxon nonparametric test was used for dependant variables. Results: The age of children ranged from 6 months to 17.5 years. Boys were more likely to suffer ocular injury than girls. Home was the leading place of eye injury (60.4%), followed by outdoors (31.7%), school (5.2%) and sporting area (2.2%). The highest percentage of eye injuries in children were caused by blunt (40.3%) and sharp objects (29.9%), followed by burns (9.3%), falls (6.7%), explosions (4.5%), fireworks (4.1%), gunshots (1.9%) and traffic accidents (0.7%). Closed globe injury (CGI) was the most common type of eye injury (53.4%). CGI were noted to be higher in children aged 13-18 years, while open globe injury (OGI) were higher in the pre-school age group. Injury of grade 4 and grade 5 were
more common in OGI, while grade 1 and grade 2 predominated in cases of CGI. Hypotony, traumatic cataract, iris laceration, vitreous prolapse and uveitis were the most common presentations of OGI, while hyphema, secondary glaucoma and retinal edema were significantly related with CGI. Final diagnoses contributing to poor final visual outcome such as corneal scar corneal opacity, hypotony, aphakia, and retinal detachment were statistically significant related only with OGI. Overall, 65.63% of children regained good visual acuity (VA ≥ 0.5), but for 18.4% of them, the trauma resulted in severe visual impairment (VA ≤ 0.1). Conclusion: Ocular trauma in children still remains an important preventable cause of ocular morbidity. This study provides data indicating that ophthalmological injuries are a significant cause of visual impairment in children.
Comparative analysis of the infectious inflammatory diseases of the anterior and posterior eye segments among patients from volga federal district of Russia and Western Kazakhstan

Author: Kim S.M.
Contact email: nauka@mail.ofmmtk.ru
Author's working institution: Orenburg branch of S. Fyodorov Eye Microsurgery Federal State Institution of the Ministry of Health of the Russian Federation, Orenburg, Russia
Co-authors: Chuprova A.D., Iserkepova A.M., Belyakova E.G.
Co-author's working institution: State Budgetary Health Institution “Orenburg Regional Clinical TB Dispensary”, Orenburg

Rationale. Among infectious inflammatory eye diseases, the following are predominating: conjunctivitis (66.7%), blepharitis (22.3%), keratitis (5-10%), vascular tract inflammation (7-30%). Frequent pathogens are gram-positive bacteria (63.9-87.5%), gram-negative bacteria (12.5-35.0%), polymicrobial flora (11.1-19.2%) [1]. An increase in herpetic uveitides and uveitides associated with systemic diseases [2,3] is observed. 70% of uveitides have unknown etiology. Mixed infections often lead to recurrence and chronic inflammation [4,5]. Purpose: To conduct comparative morbidity analysis of inflammatory diseases of anterior and posterior eye segments in patients from Volga Federal District of Russia and Western Kazakhstan observed in the Orenburg branch of NMRC “IRTC “Eye Microsurgery”. Material and methods: 238 patient charts for 2015-2018 have been analyzed. Case-records, clinical manifestations, laboratory diagnostic data for specific infections using polymerase chain reaction, enzyme immunoassay, conjunctival cavity scrapings analysis, positive tuberculin tests, specific antibacterial treatment effect, consultations with specialists, including phthisiooculist, were studied. Results and discussion: 34 patients of 238 had keratitis, 165 - anterior uveitis, 13 - posterior uveitis, 26 - keratouveitis. Keratitis prevalence among Russian patients was 49.3% (acute) and 27.2% (chronic), in Western Kazakhstan - 0.6% and 26.5%, respectively, which represents prevalence of keratitis in volga Federal District of Russia due to acute forms. It was established that etiological factors for chronic keratitis development in Volga Federal District of Russia and Western Kazakhstan are: herpes simplex virus (HSV) type 1, 2 - 31.9% and 30.9%; cytomegalovirus (CMV) - 31.6% and 29.6%; Epstein-Barr virus - 21.5% and 29.6%; tuberculosis - 2.8% and 6.6%; Chlamydia
- 7.7% and 9.9%; syphilis - 4.5% and 3.5%, respectively. The predominance of patients with acute form in Russia can be explained by the territorial availability of specialized ophthalmological medical care. The predominance of patients with chronic inflammatory eye diseases from Kazakhstan may be due to the fact that patients with acute forms were cured at the place of residence, and chronic cases were treated outpatientsly. Conjunctival cultures examination data analysis in inflammatory diseases of the anterior segment of the eye: 39.7% - colonies growth was not observed; 19.8% - Staphylococcus epidermidis; 16.5% - Staphylococcus haemolyticus; 15.7% - Staphylococcus aureus; 4.6% - Enterococcus; 3.7% Acinetobacter. Endogenous uveitides case rate among Russian patients was 58.5%, patients of Kazakhstan - 41.5%. The following etiological factors of endogenous uveitides development were established in Russia and Western Kazakhstan: HSV type 1, type 2 - 18.6% and 19.4%; CMV - 17.4% and 19.6%; Epstein-Barr virus - 14.7% and 17.9%; chlamydia - 17.7% and 6.8%; tuberculosis - 3.2% and 8.5%; syphilis - 1.5% and 2.8%; toxoplasmosis - 13.3% and 8.8%; STDs (gardnerella, ureaplasma, mycoplasma) - 5.7% and 8.9%; HIV - 0.8% and 1.0%, respectively. Prevalence of mixed infection was revealed in 48.5% of cases. Conclusions: 1. Comparative morbidity analysis of inflammatory diseases of anterior and posterior eye segments in Volga Federal District of Russia and Western Kazakhstan showed that mixed infections dominate. 2. According to the etiological factor among endogenous uveitides, uveitides of mixed, viral, parasitic, and tuberculous etiology prevail.

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