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KONGRES  
HRVATSKOG  
OFTALMOLOŠKOG I  
OPTOMETRIJSKOG  
● DRUŠTVA

23. - 26. svibnja 2019.  
Vodice

Knjiga sažetaka



HRVATSKO  
OFTALMOLOŠKO I  
OPTOMETRIJSKO  
DRUŠTVO

05  
20  
19

## **1. Ratimir Lazić**

### **Naslov:**

Vitrektomija kao kurativni i refraktivni zahvat u miopa sa ablacijom retine

### **Autori:**

Ratimir Lazic , Nikica Gabric

### **Ustanova:**

Specijalna bolnica Svjetlost Zagreb

### **Cilj:**

Pregledni rad i video

### **Bolesnici i metode:**

Pregledni rad i video

### **Rezultati:**

Ablacija retine u mlađih miopa se još uvek cesto lijeci konvencionalnom operacijom da se očuva pravozirnost leće, sposobnost akomodacije i izbjegnu potencijalne komplikacije vitrektomije pri kompletiranju odstranjuvanja staklovine koja je adherentna. U ovom preglednom prikazu zelio bih predložiti opciju primarne vitrektomije u mlađih miopa sa ablacijom. Danasna minimalno invazivna vitrektomija, u lokalnoj anesteziji sa brzinom vitrektoma od 7000 cpm i više, uz nisku pulsatsilnu trakciju i mogućnost ultrazvučne vitrektomije, znacajno umanjuje rizike operacije i udovoljava željama pacijenta da tijekom zahvata ujedno i rješe pitanje svoje dioptrijske posebice ugradnjom IOL-a sa produljenim rasponom fokusa.

### **Zaključak:**

Iako idalje smatram da je konvencionalna operacija ablacija retine u mlađih fakicnih miopa zlatni standard, predlagam opciju primarne vitrektomije sa ugradnjom IOL-a produljenog fokusa kao opciju koja osim kurativnog značaja ima i refraktivni ucinak što sve više pačenata zahtjeva. Napredak tehnologije, kirurških tehniki i nisku stupanj komplikacija potiče na razmišljanje o ovom pristupu kao alternativi konvencionalnoj operaciji. Pogotovo u vremenu kada je clear lens extraction postala sve česka metoda u refraktivnoj kirurgiji.

### **Title:**

Primary Vitrectomy for RD in Phakic Myops as Refractive Procedure as Well

### **Authors:**

Ratimir Lazic, Nikica Gabric

### **Institution:**

Eye Hospital Svjetlost Zagreb

### **Aim:**

Overview and Video

Patients and methods:

## Overview and Video

### **Results:**

Scleral buckling has long been considered golden standard in addressing retinal detachment in younger phakic myopes in order to preserve lens clarity, accommodation and avoid possible complications during surgery. In this overview I want to submit vitrectomy as a primary treatment due to great advances in surgical technique, high speed cutters, reduced pulsatile traction and even ultrasound cutters. Such surgery can yield good surgical results with reduced complications rate and also address refractive errors what patients demand nowadays more and more along with vitrectomy.

### **Conclusion:**

I believe scleral buckling to be standard of care regarding surgery for RD in younger phakic myopes. However an alternative approach with primary vitrectomy along with extended range vision intraocular lenses addresses both RD and refractive demands of nowadays patients. Improved surgery performed as outpatient procedure with decreased complications rate and addressing patients refractive needs may lead us to consider such approach in times when many undergo clear lens extraction as a refractive procedure.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

### **Ime i prezime / First and Last Name:-First**

Ratimir

### **Ime i prezime / First and Last Name:-Last**

Lazic

## **2. Morena Gavrić**

### **Naslov:**

STABILNOST ROŽNICE NAKON COLLAGEN CROSS LINKINGA KOD TRUDNICA

### **Autori:**

MORENA GAVRIĆ, NEVEN MILIČIĆ

### **Ustanova:**

KLINIKA SVJETLOST ZAGREB

### **Cilj:**

POKAZATI DA LI CROSS KINKING MOŽE PREVENIRATI NAPREDOVANJE KERATOKON USA KOD TRUDNICA

### **Bolesnici i metode:**

PRATI SE SEDAM TRUDNICA SA KERATOKONUSOM U DOBI OD 21 DO 28 GODINA. KOD SVIH ISPITANICA NAPRAVLJEN JE CROSS LINKING PRIJE TRUDNOĆE NA JEDNOM ILI OBS OKA(DREZDENSKI PROTOKOL).5 TRUDNOĆA JE DOVRŠENO KIRURŠKIM PUTEM. DVije TRUDNICE SU RODILE PRIRODNIM PUTEM.PECIJENTICE SU PRAĆENE ZA VRIJE ME TRUDNOĆE I 12 MJESECI NAKON PORODA.

### **Rezultati:**

Kod svih pacijentica ne konstatira se napredovanje keratokonusa za vrijeme trudnoće.

Praćenje godinu dana nakon poroda pokazalo je stabilnost rožnice čak i kod pacijentica koje su rodile prirodnim putem

### **Zaključak:**

Preventivni Cross linking omogućio je stabilnost rožnice unatoč svim promjenama koje sa sobom donosi trudnoća i pospartalni period

### **Title:**

THE STABILITY OF THE CORNEA AFTER COLLAGEN CROSS LINKING IN PREGNANT WOMEN

### **Authors:**

MORENA GAVRIĆ,NEVEN MILIČIĆ

### **Institution:**

EYE CLINIC SVJETLOST ZAGREB

### **Aim:**

THE AIM IS TO SHOW DOES CROSS LINKING CAN PREVENT PROGRESSION OF KERATO CONUS?

### **Patients and methods:**

SEVEN PREGNANT WOMEN WITH KERATOCONUS WERE INCLUDED IN THIS PROSPECTIVE STUDY IN AGE 21-

28 YEARS . ALL UNDERWENT CROSS LINKING IN ONE OR BOTH EYES BEFORE PREGNANCY (DRESDEN PROTOCOL).5 PREGNANCY IS COMPLETED SURGICALLY AND 2 NATURALLY. THE FOLLOW UP PERIOD WAS PREGNANCY AND 12-MONTHS AFTER DELIVERY.

**Results:**

ALL PATINTS HAD NEGLIGLIBLE PROGRESSION OFF KERATOCONUS IN PREGNANCY . ONE UEAR AFTER DELIVERY ALL CORNEAS HAVE REMAINED STABLE EVEN IN WOMEN WHO HAVE GIVEN BIRTH NATURALLY.

**Conclusion:**

PRE-PREGNANCY CROSS LINKED CORNEAS REMAINED STABLE IN SPITE OF ALL THE CHANGES THAT PREGNANCY AND POSPARTUM PERIOD RETURNS.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJAU ZA KONTAKTOLOGIJU / Contactology section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

MORENA

**Ime i prezime / First and Last Name:-Last**

GAVRIĆ

### **3. Maja Bohač**

#### **Naslov:**

PERSONALIZIRANI TRETMANI EXCIMER LASEROM NA VISOKO NEPRAVILNIM ROŽNICAMA

#### **Autori:**

Maja Bohač, Nikica Gabrić

#### **Ustanova:**

Specijalna bolnica za oftalmologiju Svjetlost, Klinika Medicinskog fakulteta Sveučilišta u Rijeci

#### **Cilj:**

Utvrđiti uspješnost i sigurnost personaliziranih excimer laser tretmana na visoko nepravilnim rožnicama.

#### **Bolesnici i metode:**

Prikaz serije slučajeva koja uključuje 34 oka koja su podvrgnuta ili rožničnim ili potpunim okularnim wavefrontom navođenim tretmanima sa excimer laserom. Rožnične nepravilnosti uzrokovane su ranijim komplikacijama rožnične refrakcijske kirurgije (17 očiju), keratokonusom (9 očiju), herpetičkim keratitisom (4 oka) i traumom (4 oka). U većini slučajeva nakon rožnične refrakcijske kirurgije gdje je preklopac bio očuvanog integriteta excimer laser ablacija se izvodila nakon podizanja preklopca, dok u slučajevima nepravilnosti preklopca, kod keratokonusa, herpetičkog keratitisisa i traume učinjen je transPRK. Sve excimer laser ablacijske izvedene su na Schwind Amaris 750S excimer laseru. Vrsta ablacijskog programa izabrana je na temelju izgleda ablacijskog profila i količine tkiva potrebnog da se izvede planirana excimer laser ablacija. U slučaju ektatičnih bolesti rožnice u istom aktu je izveden i crosslinking.

#### **Rezultati:**

U svim slučajevima došlo je do značajnog poboljšanja u topografiji rožnice, također je zabilježeno poboljšanje u redovima korigirane vidne oštrine (CDVA), poboljšanje u kvaliteti slike i smanjenje smetnji vida. Prosječno poboljšanje CDVA iznosilo je 3 reda (raspon 2-6 redova). Srednja vrijednost postoperativnog sfernog ekvivalenta bila je  $+0,37 \pm 0,21$ D (raspon -1,25 do +1,25D). Kod prvih slučajeva došlo je do hiperognog pomaka, nakon čega je učinjena prilagodba upisnog nomograma. Najmanje predvidljivi rezultati zabilježeni su u slučaju centralnih otoka na rožnici.

#### **Zaključak:**

Napredak u razumjevanju personaliziranih excimer laser tretmana zajedno sa napretkom u tehnologiji excimer lasera dovelo je do značajnog poboljšanja u refrakcijskoj predvidljivosti personaliziranih tretmana.

#### **Title:**

EXCIMER LASER CUSTOM ABLATIONS ON IRREGULAR CORNEAS

#### **Authors:**

Maja Bohač, Nikica Gabrić

**Institution:**

Specialty Eye Hospital Svjetlost, School of Medicine University of Rijeka

**Aim:**

To report efficacy and safety of custom excimer laser ablations in highly irregular corneas.

**Patients and methods:**

Case series of 34 eyes that underwent either corneal or ocular wavefront excimer laser ablation. Corneal irregularities were caused by previous corneal refractive surgery(17 eyes), primary keratoconus(9 eyes), herpetic keratitis(4 eyes) and trauma(4 eyes). In majority of refractive surgery complications where flap was intact relift was performed; while in cases of irregular flap, keratoconus, herpetic keratitis and trauma transPRK was performed. All ablations were performed on Schwind Amaris 750S excimer laser. Ablation type was chosen depending on the ablation profile and amount of tissue needed to perform the ablation. Ectatic disorders were treated in combination with same session CXL.

**Results:**

In all eyes significant improvement in corneal regularity, together with gain in corrected distance visual acuity (CDVA) and significant decrease in visual disturbances were observed. Average gain in CDVA was 3 lines (range 2-6 lines). Mean postoperative SE was  $+0,37 \pm 0,21$ D (range -1,25 to +1,50D). In first cases hyperopic shift was observed which led to nomogram adjustment. The least predictable results were observed in central steep islands.

**Conclusion:**

Improvement in understanding of ablation customization together with improvement in excimer laser software led to significant improvement in refractive predictability of custom ablations

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Maja

**Ime i prezime / First and Last Name:-Last**

Bohac

#### **4. Dinko Katić**

##### **Naslov:**

Dijabetička retinopatija - prikaz slučaja

##### **Autori:**

Katić D, Gabrić N, Lazić R

##### **Ustanova:**

Klinika Svjetlost

##### **Cilj:**

Prikazati efikasnost liječenja anti-VEGF-om pacijenata sa PDR.

##### **Bolesnici i metode:**

60-

ogodišnji pacijent sa dugogodišnjim dijabetesom tip II dolazi u našu ustanovu sa najbolje korigiranom vidnom oštrinom od 0,40. Snimljen mu je OCT i pregledan fundus metodom indirektneindirektne oftalmoskopije te je nađen PDR i parcijalni hemoftalmus.

##### **Rezultati:**

Nakon 3 uzastopne injekcije Avastina došlo je do poboljšanja vidne oštine na 0,90 i smanjenje proliferacija i hemoftalmusa na očnoj pozadini. Pacijent se 3 godine nije pojavljivao na pregledu iako mu je rečeno da dođe za mjesec dana na kontrolu. Nakon 3 godine dolazi sa hemoftalmusom i najbolje koriganim vidom od 0,06. Nakon 3 injekcije Avastina vidna oština se popravila na 0,95 i došlo je do kompletnog povlačenja hemoftalmusa i PRD.

##### **Zaključak:**

Anti-VEGF terapija je superiorna u liječenju PDR i bez upotrebe lasera.

##### **Title:**

Diabetic retinopathy - case report

##### **Authors:**

Dinko K, Gabrić N, Doc.dr.sc Ratimir Lazić, Dr.med.

##### **Institution:**

Eye Clinic Svjetlost

##### **Aim:**

Show efficacy of treatment of anti-VEGF patients with PDR.

##### **Patients and methods:**

A 60-year-old patient with long-term type II diabetes is coming to our clinic with BCVA of 0.40. He was photographed by OCT and examined by the method of indirect ophthalmoscopy, and PDR and partial hemoftalmus were found.

**Results:**

After 3 consecutive injections of Avastin, visual acuity improved to 0.90 and decreased proliferation and hemoftalmus on the background. The patient did not appear for a review for 3 years although he was told to come in for a month in control. After 3 years he comes with hemoftalmus and the best corrected visual acuity of 0.06. After 3 injections of Avastin, the visual acuity improved to 0.95 and a complete withdrawal of hemoftalmus and PRD occurred.

**Conclusion:**

Anti-VEGF therapy is superior in treating PDR and without the use of laser.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Dinko

**Ime i prezime / First and Last Name:-Last**

Katić

## **5. Ante Barišić**

### **Naslov:**

15 godina iskustva s ugradnjom intraokularnih leća za korekciju prezbiopije

### **Autori:**

Ante Barišić, Iva Dekaris, Maja Bohač, Nikica Gabrić

### **Ustanova:**

Specijalna bolnica za oftalmologiju Svjetlost

### **Cilj:**

Autori prikazuju 15 godina iskustva s ugradnjom intraokularnih leća za korekciju prezbiopije u Specij alnoj bolnici za oftalmologiju Svjetlost.

### **Bolesnici i metode:**

Pregledni rad u kojem prikazujemo što smo naučili nakon više od 10 000 ugrađenih različitih vrsta intraokularnih leća za korekciju prezbiopije kod pacijenata s kataraktom i refraktivnom izmjenom leće

### **Rezultati:**

Razvojem tehnologije, nove generacije intraokularnih leća za korekciju prezbiopije smanjuju nedostatke ranijih generacija te postaju dostupne sve većem broju pacijenata koji žele biti neovisni o naočalamima.

### **Zaključak:**

Intraokularne leće za korekciju prezbiopije učinkovita su i sigurna opcija za pacijente koji ispunjavaju potrebne kriterije. Svakom pacijentu treba pristupiti individualno pri izboru leće kako bi se izbjegle ili smanjile eventualne nuspojave ove tehnologije. Preoperativna evaluacija pacijenata je izuzetno važna za uspešan ishod.

### **Title:**

15 Years experience in Presbyopia correcting intraocular lenses implantation

### **Authors:**

Ante Barišić, Iva Dekaris, Maja Bohač, Nikica Gabrić

### **Institution:**

Eye Hospital Svjetlost

### **Aim:**

Authors are presenting 15 years experience with implantation of the Presbyopia correcting intraocular lenses in Eye Hospital Svjetlost

### **Patients and methods:**

This is an overview on more than 10 000 implantations of the Presbyopia correcting intraocular lenses in Eye Hospital Svjetlost in patients with cataract or refractive lens exchange.

**Results:**

With a development of technology, a newer generations of the Presbyopia correcting intraocular lenses reduce some disadvantages of earlier generations, so they are becoming available to more patients who want to be free of glasses.

**Conclusion:**

Intraocular lenses for presbyopia correction are efficient and safe option for patients who are fulfilling inclusion criteria. Each patient needs individual access regarding intraocular lens selection in order to avoid or reduce possible side-effects of the technology. Preoperative patient evaluation is very important for successful surgery.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ante

**Ime i prezime / First and Last Name:-Last**

Barišić

## **6. Ivana Mravičić**

### **Naslov:**

Kirurško liječenje CFEOM-a kod djece

### **Autori:**

Ivana Mravičić, Selma Lukačević, Miloš Miličević, Neven Miličić

### **Ustanova:**

Specijalna bolnica za oftalmologiju "Svjetlost"

### **Cilj:**

Prikazati postupke i uspješnost kirurškog liječenja CFEOM-a

### **Bolesnici i metode:**

Pacijent br 1: desetogodišnja curica s kompenzatornim položajem glave od  $30^{\circ}$  podignutom bradom. Urednom horizontalnom pokretljivošću, bez elevacije, limitirane depresije I s ptozom na oba oka. U prvoj operaciji retroponirana su oba donja mišića. U drugoj operaciji napravljena je antepozicija hipoplastičnih gornjih ravnih mišića. Treća operacija bila je suspenzija frontalisa na oba oka. Pacijent br 2: Dečak star 4 godine s oba oka fiksirana u inferoverziji, kompenzatornog položaja glave od  $40^{\circ}$  podignutom bradom. U prvoj operaciji napravljena je retropozicija oba donja ravna mišića. U drugoj operaciji donji mišići su produženi graftom goveđeg perikarda.

### **Rezultati:**

Pacijent br 1: Nakon dvije operacije strabizma kompenzatorni položaj glave se popravio na  $15^{\circ}$  podigneute brade. Nakon operacije ptoze brada je ostala podignuta za  $5^{\circ}$ . Pacijent br 2: Nakon 2 operacija strabizma kompenzatorni položaj glave se smanjio na  $10^{\circ}$  brada gore.

### **Zaključak:**

Odluka o operaciji donosi se na procjeni položaja očiju u primarnoj poziciji izraženosti prisilnog položaja glave i stupnju fibroze mišića. Cilj kirurškog liječenja je ispravljanje kompenzatornog položaja glave.

### **Title:**

Treatment of CFEOM in child's age.

### **Authors:**

Ivana Mravičić, Selma Lukačević, Miloš Miličević, Neven Miličić

### **Institution:**

Eye clinic "Svjetlost"

### **Aim:**

Methods and results of the surgical treatment of CFEOM

### **Patients and methods:**

Patient No 1: 9 years old girl with abnormal head position (AHP) of 30° chin up. Horizontal movements normal, no elevation, limited depression and ptosis on both eyes. In the first surgery inferior recti on both eyes were recessed. Second surgery, anteposition of hypoplastic superior recti. In the third surgery frontalis suspension was performed on both eyes. Patient No2.:4 years old boy with both eyes fixed in downgaze, chin up 40°, restricted vertical and horizontal movements. Both inferior muscles recessed. In the second surgery both inferior recti were elongated with pericardium patch grafted .

**Results:**

Patient No1: After two strabismus surgeries AHP improved, but the patient still had slight chin up 15° . After ptosis surgery residual AHP was 5°. Patient No2: After first surgery chin up was 20°, after second strabismus surgery 10°.

**Conclusion:**

Decision of the treatment was based on eye position in primary position, AHP and fibrotic changes in muscles. The most important goal is to treat AHP successfully.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ivana

**Ime i prezime / First and Last Name:-Last**

Mravicic

## **7. Tvrtka Benasić**

### **Naslov:**

23G vitrektomija za odstranjenje velikog intraokularnog stranog tijela

### **Autori:**

Tvrtka Benasić<sup>1</sup>, Maja Vinković<sup>1</sup>, Tomislav Jukić<sup>2</sup>, Andrijana Kopić<sup>1</sup>, Mario Bradvica<sup>1</sup>, Darije Čuržik<sup>1</sup>

### **Ustanova:**

1 Klinika za očne bolesti, KBC Osijek, Medicinski fakultet Osijek, Sveučilište Josip Juraj Strossmayer u Osijeku 2 Klinika za očne bolesti, KBC Zagreb, Medicinski fakultet Zagreb, Sveučilište u Zagrebu

### **Cilj:**

Prikaz slučaja pacijenta s intraokularnim metalnim stranim tijelom

### **Bolesnici i metode:**

69-

godišnji muškarac, koji je udarao čekićem po metalnim vratima, došao je u našu ustanovu s penetrantnom ranom superonazalnog dijela sklere i inkarceracijom irisa u ranu. Nakon uzimanja konjunktivalnog brisa, primarno je zbrinuta otvorena rana bulbusa zašivanjem sklere i spojnica i reponiranjem irisa u prednju očnu sobicu (DČ). Uvedena je profilaksa endoftalmitisa parenteralnim antibioticima i antitanička profilaksa. Orbitalna kompjuterizirana tomografija (CT) je pokazala metalno strano tijelo 4,4x2,7 mm u donjoj trećini bulbusa. Ultrazvuk (UZV) je upućivao na inferotemporalnu lokalizaciju stranog tijela.

### **Rezultati:**

Nakon pojave ranih znakova endoftalmitisa idućeg dana, odlučili smo se za hitan kirurški zahvat. U prerdnjoj očnoj sobici su primijećene upalne stanice i fibrinska reakcija s formiranjem sinehija i sužavanjem zjenice. Došlo je do progresije katarakte, a retina se nije mogla vizualizirati zbog hemoftalmusa. I zveli smo kirurški zahvat (BT, VM): uzimanje uzorka vitreusa, operacija katarakte, vitrektomija, odstranjenje stranog tijela, endolaser, instilacija silikonskog ulja i aplikacija vankomicina intravitrealno. Na kraju operacije su postavljeni šavovi na rožnicu i skleru. Postoperativni tijek je prošao uredno i pacijent se otpustio kući tjedan dana nakon ozljede. Brisevi spojnica i uzorak vitreusa su bili negativni na bakterije i gljive.

### **Zaključak:**

Postoje prednosti i nedostaci kako ranog tako i odgođenog kirurškog zbrinjavanja intraokularnih stranih tijela. Obzirom na znakove endoftalmitisa i nemogućnost vizualizacije retine i kvalitetnog praćenja stanja oka, odlučili smo se za ranu operativnu terapiju.

### **Title:**

23G Vitrectomy for Large Intraocular Foreign Body (IOFB) Removal

### **Authors:**

Tvrtka Benasić<sup>1</sup>, Maja Vinković<sup>1</sup>, Tomislav Jukić<sup>2</sup>, Andrijana Kopić<sup>1</sup>, Mario Bradvica<sup>1</sup>, Darije Čuržik<sup>1</sup>

**Institution:**

1 Eye Clinic, University Hospital Centre Osijek, Faculty of Medicine, Josip Juraj Strossmayer University of Osijek 2 Eye Clinic, University Hospital Centre Zagreb, School of Medicine, University of Zagreb

**Aim:**

To present a case of a patient with metallic intraocular foreign body (IOFB)

**Patients and methods:**

Sixty-nine-year-

old man who hammered came to our institution with penetrating superonasal scleral wound and incarceration of the iris in the wound. After taking the conjunctival swabs sclera was sutured and iris repositioned in the anterior chamber (DČ). Parenteral antibiotics, antitetanic prophylaxis were introduced. Orbital computerized tomography (CT) showed metallic IOFB 4.4x2.7 mm in the lower third of the eyeball. Ultrasound (US) showed inferotemporal location of the IOFB.

**Results:**

After the early signs of endophthalmitis the next day, we decided to do a prompt surgery. There was a fibrinous reaction and inflammatory cells in the anterior chamber with a formation of synaechiae and pupillary constriction. Cataract progressed and the retina was obscured due to vitreous haemorrhage. We performed the surgery (BT, VM): vitreous sample, cataract extraction, vitrectomy, IOFB (6 x 2.5 mm) removal, endolaser, silicone oil tamponade and intravitreal vancomycin. Scleral and corneal sutures were placed at the end of the procedure. Postoperatively patient was stable and discharged 1 week after the injury and scheduled for further check-ups. Conjunctival swabs and vitreous sample were negative for bacteria and fungi.

**Conclusion:**

There are advantages and disadvantages of early as well as delayed surgical treatment of IOFB removal. Since our patient had signs of endophthalmitis and no retinal visualization, we decided to do the early surgery.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tvrta

**Ime i prezime / First and Last Name:-Last**

Benašić

## **8. Slaven Balog**

### **Naslov:**

Naše iskustvo s AddOn IOL – nova perspektiva refrakcijske preciznosti

### **Autori:**

**Balog Slaven, Jelušić Vera, Kokot Antonio**

Ustanova:

Oftalmološka poliklinika “dr. Balog”, Osijek, Hrvatska Medicinski Fakultet Osijek, Sveučilište J.J. St rossmayera u Osijeku, Hrvatska

### **Cilj:**

Cilj rada je predstaviti nove mogućnosti korekcije sfernih, prezbiopskih i toričnih refraktivnih grešaka . Korektivni potencijal AddOn leća omogućuje ispravljanje i/ili poboljšanje vidne oštine i vidnih funkcija, ovisno o indikaciji i/ili želji pacijenta.

### **Bolesnici i metode:**

Predstaviti ćemo naše iskustvo u nekoliko kliničkih slučajeva (tri zasebna slučaja) s istim ciljem smanjenja rezidualne dioptrije/refraktivne pogreške nakon operacije mrene. Prvi slučaj: 57-godišnja pacijentica, miop, nakon uspješne operacije mrene na oba oka, razočarana gubitkom sposobnosti rada na blizinu, unatoč naočalnoj korekciji. Drugi slučaj: 63-godišnja pacijentica s umjerenim astigmatizmom, slabovidno desno oko, zbog naglog odljepljenja retine lijevog (boljeg) oka, pacijentica je upućena na operaciju zbrinjavanja ablacija mrežnice s operacijom mrene (PHACO+PPV). Spomenuta operacija je uspješno izvedena, no zbog greške prilikom izračuna leće ostala je velika rezidualna dioptrija/refraktivna pogreška. Unatoč tome, pacijent ostvaruje zavodnu vidnu oštalu s odgovarajućom naočalnom korekcijom. Treći slučaj: 43-godišnji pacijent, visoki hipermetrop (+15,00dsph), ambliop na lijevo oko, zbog prirode posla, ne želi više nositi rigidne kontaktne leće. Prirodna leća na oba oka je bila početno zamućena. Ranije je pacijent bio u Rusiji na laserskom tretmanu termalne keratoplastike, koja je ubrzo nakon toga popraćena hiperesnom infekcijom, te su ostali formirani i zamućeni ožiljci na rožnici oba oka. AddOn je refraktivno operativna platforma za fino ugađanje pseudofaknog oka. AddOn je implantira se u cilijarni sulkus na intraokularnu leću s fiksiranom bazom kapsularne vrećice, te je kompatibilan s uobičajenim implantima IOL-a u kapsularnim vrećicama bez obzira na dizajn ili materijal IOL-a.

### **Rezultati:**

Najbolje korigirana vidna oština od 1. tjedna do tri mjeseca postoperativno praćena je kod sva tri slučaja s ugrađenom sekundarnom IOL od strane istog kirurga i klinike u razdoblju od kolovoza 2017. godine do studenog 2018.godine. Rezultat je bio statistički značajno poboljšanje ne korigirane vidne oštine za 2 reda nakon gore navedene operacije te bez promjene u najboljoj korigiranoj vidnoj oštini. U slučaju torične sekundarne IOL ugradnje, rezultat je statistički značajna redukcija refraktivnog cilindra.

### **Zaključak:**

Sekundarna implantacija IOL-a se doima kao pouzdana kiraška opcija/metoda za korekciju rezidualne dioptrije/refraktivne pogreške nakon ugradnje primarne intraokularne leće, čak i u slučaju velike rezidualne dioptrije/refraktivne pogreške.

**Title:**

Our experience with 1stQ AddOn IOL- a new perspective on refraction precision

**Authors:**

Balog Slaven, Jelušić Vera, Kokot Antonio

**Institution:**

Private Eye Clinic "dr. Balog", Osijek, Croatia Faculty of Medicine, J.J. Strossmayer University of Osijek, Croatia

**Aim:**

To describe a new correction possibilities of spherical, presbyopic and torical refractive errors. The corrective potential of the AddOn allows to correct or to enhance visual functions, depending on indication and patient desire.

**Patients and methods:**

We will present our experience with several clinical practical cases (Three independent case studies) with the same aim of correcting a residual refractive error after cataract surgery. Case first: 57-years-old female, myopic, after successful cataract surgery on both eyes was very disappointed because she lost the ability to work near proximity regardless of spectacle correction. Case second: 63-years-old patient with both moderate astigmatism, amblyopic right eye, due to sudden retinal detachment of the left (better) eye patient was subjected to PPV+PHACO. The mentioned surgery was successfully performed but due to the fault in lens measurement the residual large refractive error was obtained despite the patient achieving enviable visual acuity with adequate eye correction Case third; 43-years-old male patient, high hypermetropic (+15 dsph), amblyopic on the left eye, because of the nature of the job, no longer wants to wear rigid contact lenses. The natural lens on both eyes was only initially cloudy. Previously he was in the Russia on laser treatment of thermal keratoplasty, which shortly after being complicated by herpes virus infection, resulting postinfectious corneal scars formation and blur on both corneas. The Add On is the refractive-surgery platform for fine-tuned correction of pseudophakic eyes. The AddOn is implanted into the sulcus in addition to the capsular-bag fixated basis intraocular lens (IOL) and is compatible with common capsular-bag IOL's irrespective of design or material.

**Results:**

Best corrected visual acuity (BCVA) data from one week to three months post-surgery were available for all of three eyes implanted with a secondary IOL by one surgeon at one practice between August 2017 and November 2018. There was a statistically significant improvement in uncorrected visual acuity of about two lines after surgery, with no change in best-corrected VA. In the case with toric secondary IOL there was a statistically significant reduction in refractive cylinder.

**Conclusion:**

The secondary IOL appears to be a viable surgical option to correct residual refractive error after primary intraocular lens implantation even in cases of a large refractive error

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery  
section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Slaven

**Ime i prezime / First and Last Name:-Last**

Balog

## **9. Maja Malenica Ravlić**

### **Naslov:**

Game on/off – utjecaj korištenja mobilnih igrica na perfuziju makule mjerena optičkom koherentnom tomografskom angiografijom

### **Autori:**

Maja Malenica Ravlić, Aida Kasumović, Ivana Radman, Marin Radmilović, Iva Krolo, Jelena Škunca Herman, Zoran Vatavuk

### **Ustanova:**

Klinički bolnički centar „Sestre milosrdnice“, Zagreb, Hrvatska

### **Cilj:**

Cilj ovog rada je istražiti utjecaj korištenja mobilnih igrica na protok i gustoću kapilara u retinalnoj ka pilarnoj mreži makularnog područja koristeći se optičkom koherencom tomografskom (OCT) angiografijom.

### **Bolesnici i metode:**

U prospektivnu studiju uključeno je 100 očiju (50 djece), između 7 i 14 godina života, stopostotne naj bolje korigirane vidne oštine na oba oka, praćene u Dječjoj ambulanti Klinike za očne bolesti KBC Sestre milosrdnice. Cijelo ispitivanje je vršio jedan ispitivač. Isključujući kriteriji su: slabovidnost, strabizam i ostale oftalmološke bolesti koje smanjuju vidnu oštinu. Na dan ispitivanja odredila se najprije vidna oštrina, a zatim su ispitanci upućeni na prvo snimanje osnovne referentne OCT angiografske slike koristeći program HD angio retina 3.0 mm x 3.0 mm uređaja Optovue RTVue XR Avanti s AngioVue (Optovue Inc, Fremont, CA, USA). Djeca su potom upućena da pod nadzorom roditelja 30 minuta igraju igrice na mobilnim uređajima. Nakon 30 minuta intenzivnog igranja mobilnih igrica ispitani cima se ponovno snimala OCT angiografija. Praćen je krvni protok retinalnih kapilarnih mreža, indeks protoka u superficialnom i dubokom kapilarnom pleksusu i protok u horiokapilarnoj mreži.

### **Rezultati:**

Analizom podataka uočila se promjena u protoku i gustoći kapilara u horiokapilarnoj mreži, dok protok u superficialnom i dubokom kapilarnom pleksusu nije pokazao znatnije promjene nakon tridesetminutnog igranja mobilnih igrica u odnosu na stanje prije igranja igrica.

### **Zaključak:**

Korištenje mobilnih igrica kroz polusatni period kod djece nije pokazalo statistički značajnije promjene u parametrima optičke koherentne tomografske angiografije. Potrebno je u dalnjim istraživanjima analizirati navedene parametre kod dulje izloženosti mobilnim igricama.

### **Title:**

Game on/off - The influence of the use of mobile games on the macula perfusion measurement by optical coherent tomographic angiography

### **Authors:**

Maja Malenica Ravlić, Aida Kasumović, Ivana Radman, Marin Radmilović, Iva Krolo, Jelena Škunca Herman, Zoran Vatavuk

**Institution:**

Clinical Hospital Center "Sestre milosrdnice", Zagreb, Croatia

**Aim:**

The aim of this paper is to investigate the influence of mobile gaming on the flow and capillary density in the retinal capillary network of the macular region using optical coherent tomography (OCT) angiography.

**Patients and methods:**

In the prospective study we have included 100 eyes (50 children), between 7 and 14 years old, 100% of the best corrected visual acuity on both eyes, followed at the Pediatric Clinic of Eye Clinic for KB C Sestre milosrdnice. The whole test was conducted by one examiner. Excluding criteria are: amblyopia, strabismus and other ophthalmic diseases that reduce visual acuity. On the day of the examination, visual acuity was determined first and then the subjects were referred to the first recording of the basic reference OCT angiographic image using HD angi-retina 3.0 mm x 3.0 mm Optovue RTVue XR Avanti's AngioVue (Optovue Inc, Fremont, CA, USA) device. Children are then instructed to play games on mobile devices, under parent supervision for 30 minutes. After 30 minutes of intense mobile gaming, OCT angiography was re-recorded. The blood flow of the retinal capillary nets, the flow index in the superficial and deep capillary plexus, and the flow in the horiocapilar network are monitored.

**Results:**

Data analysis showed changes in capillary flow and capillary densities in the horiocapil net, while the flow in the superficial and deep capillary plexus did not show any significant changes after 30 minutes of mobile gaming compared to the pre-play state of the game.

**Conclusion:**

The use of mobile games during the 30 minutes period did not show statistically significant changes in the parameters of optical coherent tomographic angiography. In further research it is necessary to analyze these parameters for longer exposure to mobile gaming.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Maja

**Ime i prezime / First and Last Name:-Last**

Malenica Ravlić

## **10. Neda Striber**

### **Naslov:**

Promjena debljine sloja živčanih vlakana retine ispitivana metodom optičke koherentne tomografije u djece s cerebralnom paralizom

### **Autori:**

Striber N. Dawidowsky B. Franceschi -Fattuta D. Konosić L

### **Ustanova:**

Klinika za dječje bolesti Zagreb

### **Cilj:**

Utvrđiti da li postoji promjena debljine sloja živčanih vlakana retine kod djece s cerebralnom paralizom, a koja se mogu dovesti u vezu s oštećenjem nezrelog mozga, odnosno mozga u razvoju što se javlja kod cerebralne paralize.

### **Bolesnici i metode:**

U istraživanje je uključen 41 ispitanik u dobi od 6 do 18 godina s cerebralnom paralizom bez obzira na tip cerebralne paralize i 49 zdravih ispitanika iste dobne skupine. Kod svih je učinjen kompletan oftalmološki pregled te ispitivanje sloja živčanih vlakana (RNLF) optičkom koherentnom tomografijom. Analiza je rađena u četiri kvadranta :superiorni, nazali, inferiorni i temporalni kvadrant.

### **Rezultati:**

Mješoviti multivarijatni model pokazao je da su značajne razlike u skupini oboljelih od cerebralne paralize u gornjem kvadrantu, te temporalnom kvadrantu. Gornji kvadrant je zahvaćen kod svih oboljelih CP podjednako. Što je oblik CP bio teži i rezultati su bili lošiji. Spol nije bila značajni prediktor niti za jedan kvadrant.

### **Zaključak:**

Promjene debljine sloja živčanih vlakana retine nađene kod djece oboljele od cerebralne paralize mogu se povezati s promjenama u nezrelog mozgu i optičkoj radijaciji kao je opisano i u radovima drugih autora, te se optička koherentna tomografija može uključiti kao standardna metoda praćenja oštećenja vidne funkcije kod djece s cerebralnom paralizom

### **Title:**

Retinal nerve fiber layer thickness changes in children with cerebral palsy detected using optical coherence tomography

### **Authors:**

Striber N. Dawidowsky B. Franceschi -Fattuta D. Konosić L

### **Institution:**

Children s Hospital Zagreb

### **Aim:**

To investigate the retinal nerve fiber layer thickness changes in children with cerebral palsy and their correlation with the defects of the immature or developing brain found in cerebral palsy.

**Patients and methods:**

Study included 41 participants aged 6-

18 years diagnosed with cerebral palsy, regardless of the type, and 49 healthy participants of the same age group. All participants underwent a complete ophthalmological examination and retinal nerve fiber layer (RNFL) thickness measurements were obtained using optical coherence tomography. Analysis of the RNFL thickness was conducted in four quadrants: superior, nasal, inferior and temporal.

**Results:**

A mixed multivariate model revealed significant RNFL thickness changes in the superior and temporal quadrant in participants with cerebral palsy. The superior quadrant was affected equally in all types of cerebral palsy. The extent of the changes correlated with the severity of cerebral palsy. Sex was not a significant predictor of RNFL thickness in any of the quadrants.

**Conclusion:**

Retinal nerve fiber layer thickness changes found in children with cerebral palsy correlate with the abnormalities of the immature brain and the optic radiation, as previously published by other authors. Optical coherence tomography can be implemented as a standard method for visual function loss monitoring in children with cerebral palsy.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Neda

**Ime i prezime / First and Last Name:-Last**

Striber

## **11. Tea Čaljkušić-Mance**

### **Naslov:**

Jednostrani endogeni Candida endoftalmitis kod prijašnjeg intravenskog ovisnika

### **Autori:**

Tea Čaljkušić-Mance, Tamara Mišljenović-Vučerić, Zvjezdana Alpeza-Dunato

### **Ustanova:**

KBC Rijeka

### **Cilj:**

Svrha je prikazati slučaj unilateralnog endogenog Candida endoftalmitisa kod prijašnjeg intravenskog narkomana u početku liječenog intravitrealnim vorikonazolom (100 mg/0,1 ml), sistemskim flukonazolom i PPVom.

### **Bolesnici i metode:**

35-

godišnji pacijent, bijelac, bivši intravenski narkoman javio se u oftalmološki odjel u KBC Rijeka, s pričom progresivnog pada oštine vida u desnom oku (RE) unutar nekoliko dana, bol, fotofobiju i hiperezemiju. Prošao je kompletan ophtalmološki pregled i učinjene su fundus fotografije i OCT. Bio je liječen intravitrealnim vorikonazolom (100 mg/0,1 ml), sistemskim flukonazolom i PPVom.

### **Rezultati:**

Vidna oština bila je stabilna na 0,9 prije nastanka epiretinalne membrane (ERM) i makularnog edema, česte komplikacije uveitisa s poremećajem vidne funkcije.

### **Zaključak:**

Prevencija formacije (ERM) temelji se na agresivnoj kontroli upale. Kada je prisutna, kirurški tretman s posteriornom vitrectomijom i ERM pilingom poboljšava ili stabilizira VA kada postoji makularna trakcija. U izostanku trakcije, rezultati su promjenjivi i nepredvidljivi. Premda se endogeni gljivični endoftalmitis smatra ozbiljnim očnim stanjem povezanim s lošim vidnim rezultatima, konačna vidna oština ovog bolesnika može se smatrati zadovoljavajućom, što nas potiče u indiciranju ovog postupka.

### **Title:**

Unilateral Endogenous Candida Endophthalmitis Following Prior Intravenous Drug Addict

### **Authors:**

Tea Čaljkušić-Mance, Tamara Mišljenović-Vučerić, Zvjezdana Alpeza-Dunato

### **Institution:**

Clinical Hospital Center Rijeka

### **Aim:**

The purpose is to report a case of unilateral endogenous Candida endophthalmitis following prior intravenous drug addict initially treated with intravitreal voriconazole (100 mg / 0.1 ml), systemic fluconazole and PPV.

#### **Patients and methods:**

White male 35 patient, former intravenous drug addict attended at the ophthalmology department at KBC Rijeka, with a complaint of progressive low visual acuity in the right eye (RE) for few days, pain, photophobia and hyperemia. He underwent complete ophtalmologic examination and fundus photography and OCT. He was treated with intravitreal voriconazole (100 mg / 0.1 ml), systemic fluconazole and PPV.

#### **Results:**

Visual acuity was stable on 0.9 before formation of epiretinal membrane (ERM) and macular oedema, a frequent complication of uveitis with impairment of visual function.

#### **Conclusion:**

The prevention of the formation(ERM) is based on the aggressive control of the inflammation; when present, surgical treatment with posterior vitrectomy and peeling of the ERM improves or stabilizes the VA when macular traction is proven. In the absence of traction, the results are variable and unpredictable. Although endogenous fungal endophthalmitis is considered a serious ocular condition associated to poor visual results, the final VA of this patient can be considered satisfactory, which excites us to indicate this procedure.

#### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA UVEA-u / Uvea section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

#### **Ime i prezime / First and Last Name:-First**

Tea

#### **Ime i prezime / First and Last Name:-Last**

Čaljkušić-Mance

## **12. Dejan Rašić**

### **Naslov:**

TUMORSKA MASA OKULARNIH ADNEKSA KAO PRVI ZNAK METASTATSKOG NEUROE NDOKRINOGL CARCINOMA PLUĆA

### **Autori:**

Rašić Dejan, Bogdanović Miroljub, Bogdanović Milica

### **Ustanova:**

Gamma Mediciina, Beograd, Srbija

### **Cilj:**

Prikaz slučaja pacijenta sa metastatskom promenom, koja je bila prvi znak neuroendokrinog karcinoma pluća, a pojavila se na donjem kapku levog oka.

### **Bolesnici i metode:**

Muškarac 65 godina starosti, upućen je sa bezbolnom oteklinom u donjem kapku levog oka, što je dovelo do značajnog suženja palpebralne rime. Ova masa je postepeno rasla tokom perioda od 3 meseca. MSCT je pokazao homogenu, ekspanzivnu, dobro demarkiranu, čvrstu, masu periorbitalne i orbitalne regije denziteta mekog tkiva, 25x19 mm, koja deformeša očnu jabučicu, potiskujući je lateralno i gore, uključujući i inferiorni i medijalni rektus, uz sumnju na defekt orbitalnog poda. Istorija bolesti pacijenta nije bila od značaja, laboratorijska istraživanja, rentgen, abdominalna i karlični ultrazvuk bez patoloških nalaza. U istoriji bolesti naveden je podatak da je pacijent bio dugogodisnji pušač. Urađena je orbitalna egzenteracija uz očuvanje kože kapaka.

### **Rezultati:**

Na osnovu histopatoloških osobina / morfologije i imunohistohemijskog profila, dijagnostikovana je metastaza na adneksama oka poreklom od neuroendokrinog karcinoma (verovatno mikrocelularni karcinom pluća, čista forma). Dva meseca nakon operacije na MSCT pluća pronađena je primarna lezija - na desnoj strani, 30x25 mm u hilusu, sa zahvaćenim hilarnim i medijastinalnim limfnim čvorovima. Pacijent je bio pod hemoterapijom i radioterapijom. Multiple metastaze u mozgu su pronađene na MSCT.

Pacijent je preminuo, 21 mjesec nakon dijagnoze i lečenjenja, od metastaza.

### **Zaključak:**

Nije bilo recidiva lokalnog / orbitalnog tumora tokom bolesti

### **Title:**

OCULAR ADNEXAL MASS AS THE FIRST SIGN OF METASTATIC LUNG NEUROENDOCRINE CARCINOMA

### **Authors:**

Rašić Dejan, Bogdanović Miroljub, Bogdanović Milica

### **Institution:**

Gamma Medicina, Belgrade, Serbia

**Aim:**

Aim to present a case of 65 old man with ocular adnexal mass as the first sign of the metastatic lung neuroendocrine carcinoma

**Patients and methods:**

A 65-

year old man was referred with a painless swelling in the lower eyelid of the left eye, causing significant narrowing of the palpebral rima. This had been growing progressively over a period of 3 months. A MSCT scan showed homogeneous, expansive, well-demarcated, solid, periorbital and orbital mass of soft-tissue-density, 25x19 mm, which indents the eyeball, and also making lateral and upwards eyeball dystopia, with inferior and medial rectus involvement and suspicious orbital floor defect. Patients past medical history was unremarkable, laboratory investigations, chest X-ray, abdominal and pelvic ultrasonography were in normal range. A long history of moderate to heavy

**Results:**

Based on the histopathologic features/morphology and the immunohistochemical profile, a diagnosis of ocular adnexal metastasis from neuroendocrine carcinoma (presumably small cell lung carcinoma, a pure form) was found to be most compatible. Two months after surgery, an MSCT of the lungs was performed and primary lesion was found – on the right side, 30x25 mm hilar mass with hilar and mediastinal lymph nodes involvement. The patient was under chemotherapy and radiotherapy. Multiple brain metastases were found on MSCT.

Twentyone months after diagnosis and treatment the patient died from the metastatic disease

**Conclusion:**

There had been no local/orbital tumour recurrence during the course of the disease.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA ORBITU / Orbit section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Dejan

**Ime i prezime / First and Last Name:-Last**

Rašić

## **13. Đoko Obućina**

### **Naslov:**

TRANSKONJUNKTIVALNI PRISTUP HIRURGIJI PTOZE KAPAKA

### **Autori:**

Obućina Đoko, Bogdanović Vladimir, Bogdanović Miroljub, Bogdanović Milica

### **Ustanova:**

Gamma Medicina, Beograd, Srbija

### **Cilj:**

Prikaz slučajeva korekcije ptoze transkonjunktivalnim pristupom uz evaluaciju rezultata i primenu Heringovog zakona

### **Bolesnici i metode:**

U proteklih 5 godina (od jula 2013 do juna 2018) uradili smo 306 operativnih korekcija ptoze (uključujući sekundarne intervencije). Transdermalnim pristupom 180 (58.83%) i transkonjunktivalnim pristupom 126 (41.17%). Primarnih intervencija ukupno 260. Sekundarnih intervencija je bilo 46 (15.03%). Za navedenih 126 intervencija, indikacije su bile sledeće: aponeurotska ptoza 62 (49.20%), involutivna ptoza 30 (23,80%), kongenitalna ptoza 22 (17,47%), druge etiologije (posttraumatska, paralitička ...) 12 (9,52%). Metode korišćene pri korekciji ptoze su bile: (1) konjunktivalna resekcija Mullerovog mišića (MMCR) sec. Puttermann, (2) resekcija Mullerovog mišića (MMR) sec. Soursa, (3) resekcija (ili duplikatura) m. levator palpebrae superioris sec. Sharma i (4) resekcija (ili duplikatura) m. levator palpebrae superioris sec. Mohindra.

### **Rezultati:**

Postignuti su zadovoljavajući rezultati u funkcionalnom i estetskom smislu i nije bilo potrebe za sekundarnim intervencijama. (Broj zadovoljnih pacijenata je verovatno nešto manji.) Nije bilo potrebe za sekundarnim intervencijama kod pacijenta sa fenomenom po Heringovom zakonu.

### **Zaključak:**

Operacija ptoze je uvek nešto između željenog i mogućeg

### **Title:**

TRANSCONJUNCTIVAL APPROACH IN PTOSIS SURGERY

### **Authors:**

Obućina Đoko, Bogdanović Vladimir, Bogdanović Miroljub, Bogdanović Milica

### **Institution:**

Gamma Medicina, Belgrade, Serbia

### **Aim:**

To report cases of correction of ptosis by transconjunctival approach with evaluation of results and use of Hering's law.

### **Patients and methods:**

Over the past 5 years (from July 2013 to June 2018), 306 operational corrections of ptosis (including secondary interventions) were performed. Transdermal approach was used in 180 cases (58.83%), and transconjunctival in 126 cases (41.17%). There were 260 primary interventions and 46 secondary interventions (15.03%). For the above 126 interventions, the indications were as follows: aponeurotic ptosis 62 (49.20%); involutional ptosis 30 (23.80%); congenital ptosis 22 (17.47%); and other etiology (posttraumatic, paralytic, etc.) 12 (9.52%). The methods used to correct ptosis were: (1) Muller's muscle-conjunctival resection (MMCR) sec. Puttermann; (2) Muller's muscle resection (MMR) sec. Sours; (3) resection (or duplicate) of levator palpebrae superioris muscle sec. Sharma; and (4) resection (or duplicate) of levator palpebrae superioris

### **Results:**

Satisfactory results were achieved in both functional and esthetic sense, and there was no need for secondary interventions. (The number of satisfied patients is probably slightly lower.) There was no need for secondary interventions in patients with Hering's law phenomenon.

### **Conclusion:**

Ptosis surgery is always a compromise between the desired and possible

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA ORBITU / Orbit section

Titula / Title:

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Doko

### **Ime i prezime / First and Last Name:-Last**

Obućina

## **14. Martina Paradžik Šimunović**

### **Naslov:**

Izračun jakosti intraokularne leće prema morfološkoj klasifikaciji pterigija biomikroskopskim pregledom.

### **Autori:**

Martina Paradžik Šimunović<sup>1</sup>, Ivana Olujić<sup>1</sup>, Žana Ljubić<sup>1</sup>, Ana Vučinović<sup>1</sup>, Tomislav Ljubičić<sup>1</sup>, Josipa Marin Lovrić<sup>1</sup>, Livia Puljak<sup>2</sup>, Kajo Bučan<sup>1</sup>, Mladen Lešin<sup>1</sup>

### **Ustanova:**

<sup>1</sup>Klinika za očne bolesti, KBC Split, Spinčićeva 1, Split, Hrvatska <sup>2</sup>Hrvatsko katoličko sveučilište, Zagreb, Hrvatska

### **Cilj:**

Pterigij je degeneracija spojnice nepoznate etiologije. Proučavano je nekoliko čimbenika rizika poput izloženosti UV svjetlu, no jasan patološki mehanizam još nije utvrđen. Često se pojavljuje kod starijih osobama i nije rijetkost da pacijenti imaju pterigij i sivu mrenu na oftalmološkom pregledu. Mjerenje veličine pterigija, ukupne dužine i ukupne površine, može na uputiti na implantaciju IOL-a najmanje 0.50 D manju od izračunate snage kada je veličina pterigija veća od 2.40 mm u ukupnoj dužini i 5.45 mm<sup>2</sup> u ukupnoj površini prilikom korištenja ImageJ programa za mjerenje, ali u svakodnevnom radu bilo bi zanimljivo znati da li je klasifikacija pterigija prema Tanu na pregledu biomikroskopom dovoljna za ispravan izračun IOL-a.

### **Bolesnici i metode:**

Muškarci i žene uključeni u ove rezultate bili su stariji od 18 godina s primarnim nazalnim pterigijem i operirani u KBC Split s postoperativnim praćenjem nakon 30 dana. Morfologija pterigija procjenjiva na je i tijekom očnog pregleda na biomikroskopskom pregledu i na temelju fotografije koju je ocjenjivao maskirani autor koji nije bilo uključen u pregled. Morfologija je klasificirana prema Tan: 1 atrofija / vidljive episkleralne krvne žile; 3 mesnat / nisu vidljive episkleralne krvne žile; i 2: srednji, između 1 i 3. Snaga IOL-a automatski je izračunata nakon mjerenja s optičkim biometrom AL-Scan (Nidek Co, Ltd). Za izračune IOL-a korištene su uobičajene formule: SRK / T i Holladay 1.

### **Rezultati:**

Navedeni rezultati su preliminarni sekundarni ishodi na 40 bolesnika iz randomizirane kliničke studije, kojaje registriran u protokolu Clinicaltrials.gov (registracijski broj: NCT03321201).

Pacijenti su podijeljeni u 3 skupine prema Tan klasifikaciji te su demografski podatci između skupina bili ujednačeni. Tan 1 (n = 10, srednja dob  $66.11 \pm 10.71$ ), Tan 2 (n = 18, srednja dob  $63.39 \pm 11.64$ ) i Tan 3 (n = 12, srednja dob  $66.31 \pm 7.8$ ). Preliminarni rezultati nakon 30 dana pokazali su statistički značajnu manju snagu IOL u skupini Tan 3 s obje uobičajeno korištene formule za izračunavanje IOL-a, SRT / T i Holladay 1 ( $21.99 \pm 1.70$  vs  $21.00 \pm 1.90$ ,  $p = 0.049$ ;  $22.34 \pm 2.03$  vs  $21.06 \pm 2.32$ ,  $p = 0.0335$ ) u usporedbi s preoperativnim mjeranjima, dok promjene u skupini Tan 1 nisu bile statistički značajne preoperativno i 30 dana postoperativno.

### **Zaključak:**

Biometrijske promjene u morfološkoj klasifikaciji pterigija na biomikroskopu kod niskog stupnja prema Tan (Tan 1) nisu značajno različite na preoperativnom izračunu IOL-a.

a i 30 dana poslijeoperacijski. U slučajevima s visokom Tan klasifikacijom (Tan 3), postoji statistički značajna manja jačina IOL, stoga treba razmotriti ugradnju intraokularne leće manje snage.

**Title:**

Effects of pterygium slit lamp morphology classification on IOL power calculation.

**Authors:**

Martina Paradžik Šimunović<sup>1</sup>, Ivana Olujić<sup>1</sup>, Žana Ljubić<sup>1</sup>, Ana Vučinović<sup>1</sup>, Tomislav Ljubičić<sup>1</sup>, Josipa Marin Lovrić<sup>1</sup>, Livia Puljak<sup>2</sup>, Kajo Bućan<sup>1</sup>, Mladen Lešin<sup>1</sup>

**Institution:**

<sup>1</sup>Department of Ophthalmology, University Hospital Split, Spinciceva 1, Split, Croatia <sup>2</sup>Catholic University of Croatia, Zagreb, Croatia

**Aim:**

Pterygium is classified as conjunctival degeneration with unknown etiology. Several risk factors have been studied such as exposure to UV light but a clear pathology mechanism still remains unclear. The onset of pterygium is usually in elderly therefore it is not uncommon that patients have both pterygium and cataract at the ophthalmological examination. Measuring the size of pterygium as total length and total area can lead to least 0.50 D smaller implant than calculated IOL power when pterygium size is larger than 2.40 mm in total length and 5.45 mm<sup>2</sup> in total area measured using the ImageJ program. Thus it would be compelling to know whether a slit lamp pterygium classification according to Tan is sufficient to make correct IOL calculation.

**Patients and methods:**

Male and female patients included in the study were older than 18 years of age with the primary nasal pterygium and operated at KBC Split with postoperative follow-up after 30 days. Pterygium morphology was evaluated both during an ocular examination on slit lamp and as well as on the basis of photograph by an additional masked specialist that was not involved in the examination. The morphology was classified according to Tan: 1 atrophic/underlying episcleral blood vessels visible, 3: fleshy/episcleral blood vessels are not visible and 2: intermediate, between 1 and 3. The IOL power was automatically calculated after measurement with Optical Biometer AL-Scan (Nidek Co, Ltd). Conventional formulas were used to make IOL calculations: SRK/T and Holladay 1.

**Results:**

The preliminary secondary outcomes were evaluated on 40 patients from randomized clinical study, which was registered in the protocol Clinicaltrials.gov (registration number: NCT03321201). Patients were divided in 3 groups according to Tan, with similar demographic data between groups, Tan 1 (n=10, mean age  $66.11 \pm 10.71$ ), Tan 2 (n = 18, mean age  $63.39 \pm 11.64$ ) and Tan 3 (n=12, mean age  $66.31 \pm 7.8$ ). Preliminary results after 30 days follow-up displayed significant lower IOL calculation in Tan 3 group with both commonly used formulas for IOL calculation, SRT/T and Holladay 1 ( $21.99 \pm 1.70$  vs  $21.00 \pm 1.90$ ,  $p=0.049$ ;  $22.34 \pm 2.03$  vs  $21.06 \pm 2.32$ ,  $p=0.0335$ ) when compared to preoperative measurements whereas no significant difference in IOL calculation was found in Tan 1 group preoperative and 30 days postoperative with both formulas, SRK/t and Holladay 1 ( $23.85 \pm 1.22$  vs.  $22.82 \pm 2.025$ ,  $p=0.1082$ ;  $24.20 \pm 1.123$  vs.  $23.13 \pm 1.956$ ,  $p=0.1008$ ).

**Conclusion:**

Biometrical changes in low grade pterygium according to slit lamp morphology classification by Tan (Tan 1) do not have significantly influence on IOL calculation preoperative and 30 days postoperative . In cases with high Tan classification (Tan 3), there is a statistical lower IOL power calculation, and therefore less IOL power should be considered.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

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Martina

**Ime i prezime / First and Last Name:-Last**

Paradžik Šimunović

## **15. Ivana Babić**

### **Naslov:**

**BITI ILI NE BITI U TEŠKOM SLUČAJU NEOVASKULARNOG GLAUKOMA U DIABETIČNO  
G PACIJENTA**

### **Autori:**

Babić I, Pleština Borjan I, Rogošić V, Bućan K

### **Ustanova:**

Klinika za očne bolesti, KBC Split

### **Cilj:**

Neovaskularni glaukom (NVG) je agresivni tip sekundarnog glaukoma uvijek povezan s izraženom retinalnom ishemijom, karakteriziran razvojem neovaskularizacija u komornom kutu i na šarenici (NVI) i s lošom vidnom prognozom, koji u svojoj uznapredovaloj fazi i uz današnje mogućnosti liječenja ostaje veliki terapijski izazov. Najčešći uzroci NVG su dijabetička retinopatija, ishemijska okluzija središnje retinalne vene i okularni ishemijski sindrom. Cilj ovog rada je prikazati izuzetno teški, uznapredovali oblik NVG-

a oba oka u dugogodišnjeg dijabetičnog bolesnika u kojeg je upornost u liječenju i dobro isplanirana kombinacija višestrukih kirurških zahvata i u ovom, naizgled, beznadnom slučaju, rezultirala prihvatljivim funkcionalnim rezultatom.

### **Bolesnici i metode:**

Muškarac, star 73 godine, dijabetičar 20 godina, posljednjih 12 godina na inzulinskoj terapiji, s proliferativnom dijabetičkom retinopatijom oba oka, provedenom panretinalnom fotokoagulacijom (PRP) na oba oka i antiglaukomskom operacijom na lijevom oku, te višestrukim intravitrealnim aplikacijama anti-

VEGF lijekova obostrano, zbog NVG, zaprimljen je zbog izrazito jake boli u desnom oku u Kliniku za očne bolesti KBC Split. Bolesnik je ranije operiran i zbog mrena na oba oka. Vidna oštrina desnog oka pri prijemu iznosila je osjet svjetla i urednu projekciju (L+P+), a na lijevom oku bolesnik je imao samo osjet svjetla dolje i temporalno. Intraokularni tlak (IOP), iznosio je 45 mm Hg u desnom oku uz to pičku terapiju (primjenjivana kombinacija brinzolamid+timolol i latanoprost) te 10 mmHg u lijevom oku bez terapije. Uskoro dolazi ponovo do povišenja IOP-a i u lijevom oku.

### **Rezultati:**

U bolesnika je primijenjena konzervativna antiglaukomatozna terapija dopuštenim lijekovima topički i sustavno u maksimalno dopuštenim dozama (s obzirom na stanje bubrega i kadriovaskularnog sistema) te anti-

VEGF (ranibizumab) intravitrealno i u prednju očnu sobicu na desnom oku. S obzirom da na primjeni terapiji nije postignuto odgovarajuće sniženje očnog tlaka na desnom oku, interveniralo se kirurskim metodama. Provedena je duboka sklerotomija (DS), nakon regresije neovaskularizacija šarenice i smanjenja broja NV u komornome kutu (poslije anti-

VEGF terapije). Unatoč oprezu i odabiru adekvatnog mjesta za DS, tijekom operacije došlo je do krvarenja u vitrusu, pa je postavljena indikacija za pars plana vitrektomiju (PPV). Konačno, napravljena je vitrektomija s dopunom PRP endolaserom u desnom oku. Kako u međuvremenu dolazi do povišenja IOT u lijevom oku pristupi se transskleralnoj krioretinopeksiji korištenjem BIOM-

a (zbog izražene mioze). Nakon provedenih kirurških zahvata IOP u oba oka dobro je kontroliran, a vidična oštrina desnog oka sada iznosi 0,2.

### **Zaključak:**

Zbrinjavanje NVG-

a uključuje i kontroliranje temeljnog ishemijskog procesa i smanjenje IOP. Liječenje neovaskularnog glaukoma (NVG) kao teško kontrolirane, devastirajuće bolest koja ugrožava vid, što često može biti pretraženo i jakim bolovima i dalje je veliki terapijski izazov. Uspješno liječenje može biti jako teško, gotovo beznadno u uznapredovaloj fazi bolesti. Zbog toga sve treba učiniti kako bi se spriječilo ovo stanje. Uz lasersku terapiju, anti-VEGF terapija je vrijedna pomoć u liječenju NVG-a, kako u prevenciji nastanka neovaskularizacija i regresiji postojećih, tako i u pripremi kirurških zahvata. Unatoč lošoj prognozi same bolesti, upornost, dobro isplanirana terapija te dobra suradljivost i međusobno povjerenje bolesnika i liječnika na kraju su doveli do iznenadujuće dobrog rezultata.

### **Title:**

TO BE OR NOT TO BE IN SEVERE CASE OF NEOVASCULAR GLAUCOMA IN DIABETIC PATIENT

### **Authors:**

Babić I, Pleština Borjan I, Bucan K, Rogošić V

### **Institution:**

Department of Ophthalmology, University Hospital Centre Split

### **Aim:**

Neovascular glaucoma (NVG) is an aggressive type of secondary glaucoma always associated with a significant retinal ischemia, characterized by the development of neovascularization (NVI) in the chamber angle and in the iris and a poor visual prognosis, which in its advanced stages and with today's treatment options remains a major therapeutic challenge. The most leading causes of NVG are diabetic retinopathy, central retinal vein occlusion and ocular ischemic syndrome. The aim of this paper is to demonstrate extremely difficult, advanced NVG forms of both eyes in the longstanding diabetic patient in whom persistence in treatment and a well planned combination of multiple surgical procedures and in this seemingly, hopeless case, resulted in an acceptable functional outcome.

### **Patients and methods:**

Male, 73 years old; a longtime (20 years) diabetic, the last 12 years on insulin therapy, with proliferative diabetic retinopathy of both eyes, performed panretinal photocoagulation (PRP) on both eyes, with antiglaucoma surgery on left eye done and multiple intravitreal applications of anti-VEGF drugs bilaterally, due to NVG; because of extremely severe pain in the right eye was admitted at the Eye Clinic Clinical Hospital Centre Split. The patient was previously operated due to cataract on both eyes. The initial examination revealed visual acuity in the right eye as appropriate light perception with projection and in left eye light perception with projections only temporal and down. Intraocular pressure (IOP), was 45 mm Hg in right eye with topical therapy (given combination brinzolamid+timolol and latanoprostum) and 10 mmHg in left eye without therapy. Soon it comes again to increasing IOP in his left eye.

### **Results:**

Conservative antiglaucoma therapy with the medication was administered to the patient in a topical and systemic manner at the maximum dose (considering the condition of the kidneys and the cardiovascular system) and anti-

VEGF (ranibizumab) pharmacotherapy was applied intravitreally and at the anterior chamber of the right eye. Considering that no adequate lowering of IOP of the right eye was achieved with applied medical therapy, surgical procedure was needed to reduce IOP. Deep sclerotomy (DS) was performed after regression of the neovascularization and after the number of NVs in the chamber angle was reduced (as the result of the anti-

VEGF therapy). Despite the caution and choosing adequate place for DS, during the operation there was bleeding in the vitreous and indication for pars plana vitrectomy (PPV) was made. Ultimately vitrectomy with the supplementation of PRP endolaser in the right eye was done. As in the meantime, there was an increase in IOP in the left eye, transscleral cryoretinopexy through BIOM in his left eye also was done (miosis of the pupil). His IOP in both eyes have been well controlled since the surgical interventions and his BCVA on right eye now is 0,2.

### **Conclusion:**

The management of NVG includes both controlling of the underlying ischemic process and decreasing IOP. Management of NVG as one of intractable, devastating, sight-threatening disease, which often can be accompanied by severe pain, remains a therapeutic challenge. Successful management may be strongly difficult, almost hopeless in an advanced stage of the disease. Therefore, all should be done to prevent this condition. Beside laser therapy, anti-

VEGF therapy is a valuable addition in the treatment of NVG, both for prevention and resolution of neovascularization and in preparation for surgical procedures. Despite the poor prognosis of the disease itself, persistence, well planned therapy, and good compliancy and mutual trust between the patient and the doctor, eventually led to surprisingly good results.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

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babić

## **16. Sanja Perić**

### **Naslov:**

Utjecaj retinopatije nedonoščadi na razvoj refraktivne greške i strabizma

### **Autori:**

Sanja Perić, Nenad Vukojević, Zlatko Juratovac, Marija Barišić Kutija, Martina Galiot Delić

### **Ustanova:**

KBC Zagreb

### **Cilj:**

longitudinalno istražiti utjecaj umjerene do teške retinopatije nedonoščadi na refraktivni status i pojavu strabizma u prvoj, trećoj i petoj godini života.

### **Bolesnici i metode:**

Djeca sa retinopatijom nedonoščadi podijeljena su u dvije grupe. Grupa A (n=25) koja je imala blažu retinopatiju nedonoščadi : retinopatija I i II stupanja sa spontanom regresijom. Grupa B (n=25) koja je imala težu retinopatiju nedonoščadi: retinopatija II i III stupnja , tretirani laserskom fotokoagulacijom. U obje grupe praćena je cikloplegijska refrakcija i pojava strabizma u prvoj, trećoj i petoj godini života. Ispitivala se refrakcijska greška i pojava strabizma kod pacijenata u grupi A i B te komparacija učestalosti istih između grupe A i B .

### **Rezultati:**

statistička obrada podataka u izradi

### **Zaključak:**

Publicirane studije ukazuju na utjecaj retinopatije nedonoščadi na refrakcijsku grešku i pojavu strabizma. Ovim istraživanjem želimo definirati optimalne intervale praćenja djece sa retinopatijom nedonoščadi kako bi se uz pravovremenu intervenciju postigao maksimalni razvoj vidnih funkcija

### **Title:**

The effects of retinopathy of prematurity on the development of refractive errors and strabismus

### **Authors:**

Sanja Perić, Nenad Vukojević, Zlatko Juratovac, Marija Barišić Kutija, Martina Galiot Delić

### **Institution:**

KBC Zagreb

### **Aim:**

to longitudinally investigate the influence of moderate –to-severe retinopathy of prematurity on refractive status and appearance of strabismus in first, third and fifth years of life.

### **Patients and methods:**

Infants with retinopathy of prematurity (ROP) were divided into two groups. Group A (n = 25), included stage 1 or 2 ROP cases , with spontaneous regression of ROP . Group B (n = 25) included stage 2 or 3 ROP , treated with laser photocoagulation. Longitudinal cycloplegic refraction data and strabismus were analyzed in groups A and B. Comparison of frequency of cycloplegic refraction data and strabismus was made between groups A and B in the first, third and fifth year of life.

**Results:**

statistical data analysis in evaluation

**Conclusion:**

recent studies implicated the influence of the retinopathy of prematurity on the refractive status and the appearance of strabismus. The results obtained in this study will help to optimize the intervals for follow-up of children with retinopathy of prematurity in order to timely intervene to achieve maximal results in development of visual functions.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

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## **17. Maja Merlak**

### **Naslov:**

Operacija komplikirane katarakte - PEX i katarakta

### **Autori:**

Merlak Maja, Grubešić Petra, Bilen Babić Marijana

### **Ustanova:**

Klinika za oftalmologiju KBC Rijeka

### **Cilj:**

ukazati na specifičnost operacije katarakte kod PEX sy; prepoznati preoperativne riziko faktore,intraoperativne i postoperativne komplikacije, te operativne tehnike kod pacijenata sa PEX sy

### **Bolesnici i metode:**

pregledni rad

### **Rezultati:**

pregledni rad

### **Zaključak:**

Postojanje PEX materijala ukazuje na progresivno slabljenje zonularnog aparata te gubitak stabilnosti leće i značajno povećava rizik od komplikacija. Prijeoperativni pregled, planirani pristup operativnom zahvalu i postoperativni menegment čini operaciju katarakte u pacijenata sa PEX sy sigurnijim zahvatom.

### **Title:**

Cataract Surgery in Complicated Cases - PEX and cataract

### **Authors:**

Merlak Maja, Grubešić Petra,Bilen Babić Marijana

### **Institution:**

Clinical Hospital Rijeka, Department of Ophthalmology

### **Aim:**

point to the specifics of the cataract surgery in patients with PEX sy , identify preoperative risk factors, intraoperative and postoperative complications, operating techniques in patients with PEX

### **Patients and methods:**

review

### **Results:**

review

### **Conclusion:**

Presence of PEX material indicates a progressive weakening of the zonular apparatus, loss of lens stability and significantly increases the risk of complications. Preoperative examination, the planned approach to surgery and postoperative management makes cataract surgery in patients with PEX syndrome more safe.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

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Maja

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Merlak

## **18. Šarolta Pinter**

### **Naslov:**

Laserski tretman senilne makularne degeneracije – Rezultati LEAD studije

### **Autori:**

Šarolta Pinter, Adrian Lukenda, Željka Karaman Martinović

### **Ustanova:**

Očna poliklinika Opto centar, Zagreb

### **Cilj:**

Prikazati najnovije dokaze i smjernice vezane uz primjenu nanosekundne laserske terapije bez zagrijavanja (SNL) u liječenju SMD, kao i mogućnost usporavanja napredovanja bolesti te njenu moguću upotrebu u svakodnevnoj praksi.

### **Bolesnici i metode:**

Pregled recenzirane literature

### **Rezultati:**

Istraživanje o primjeni lasera u liječenju početnog oblika senilne makularne degeneracije, pod nazivom LEAD, trajalo je 3 godine. Istraživanje je bilo multicentrično, randomizirano uz upotrebu slijepih kontrola koje je provedeno na 292 sudionika. Sudionici su primali retinalnu obnavljajuću terapiju (2R T®, Ellex) SNL ili placebo u 6-mjesečnim intervalima.

Mjereno je razdoblje koje je potrebno da početni oblik SMD prijeđe u kasni oblik SMD te koliko je si gurna primjena lasera.

Ukupni rezultati nisu pokazali statistički značajnu razliku između dva načina liječenja u usporavanju napredovanja bolesti ( $p=0.122$ ) .

Međutim, dodatne analize su pokazale da su različite kliničke skupine, različito reagirale na liječenje. Skupina bolesnika koja na početku istraživanja nije imala retikularne pseudodruze (blaži oblik SMD - 76% bolesnika), a koja je liječena laserskom terapijom, pokazala je značajno usporavanje napredovanja bolesti. Nasuprot tome, u skupini sa pseudodruzama (24% bolesnika) koja je liječena laserom, došlo je do pogoršanja bolesti ( $p=0.112$ ).

Neželjeni događaji su u obje skupine bili slični i statistički nisu bili značajni.

### **Zaključak:**

#### **Primjenom SNL-**

a bolest se ne može izlječiti. Jednako tako SNL nije odgovarajuća terapija za sve osobe s početnim oblikom senilne makularne degeneracije. Međutim, po prvi puta je terapija laserom kod određene skupine bolesnika sa degeneracijom makule, pokazala znakove usporavanja napredovanja bolesti.

Navedenu terapiju još ne očekujemo u svakodnevnoj praksi jer je potrebno provesti dodatna istraživanja usmjerena na dokaze vezana uz sigurnost i učinkovitost laserskog tretmana uz odgovarajući odabir bolesnika.

### **Title:**

The laser intervention in age-related macular degeneration - results of the LEAD trial

### **Authors:**

Šarolta Pinter, Adrian Lukenda, Željka Karaman Martinović

**Institution:**

Opto centar Eye center, Zagreb

**Aim:**

To demonstrate the latest evidence regarding the Subthreshold Nanosecond Laser (SNL) intervention in AMD and its potential in slowing the progression of the disease and use in everyday practice

**Patients and methods:**

Review of the recent peer-reviewed literature.

**Results:**

**The Laser Intervention in Early Stages of Age-**

Related Macular Degeneration (LEAD) study was a 3 years multicenter, randomized, sham-controlled trial that included 292 participants. They received Retinal Rejuvenation Therapy (2RT®, E llex) SNL or sham at 6-

monthly intervals. Main measures were the time to development of late AMD and its safety.

The overall results did not show a significant difference between the treatment modes in slowing progression of the disease ( $p=0.122$ ).

However, a post hoc analysis showed that different clinical groups responded differently to the treatment. The ones without coexisting reticular pseudodrusen (RPD) at baseline (less severe AMD – 76% of patients), who received SNL treatment showed a significant slowdown in disease progression ( $p=0.02$ ). Whereas, 24% of patients with RPD, who receive SNL treatment, showed an increased progression rate ( $p=0.112$ ). Adverse events in both groups were similar; not significant.

**Conclusion:**

SNL is not a cure and it is not suitable for every person with early stages of AMD, but for the first time a selected group of patient treated with this laser showed signs of slowing AMD disease progression from its early stage to late AMD. Its application in everyday practice is still on hold, since further safety and validation studies are necessary.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Šarolta

**Ime i prezime / First and Last Name:-Last**

Pinter

## **19. Miroljub Bogdanović**

### **Naslov:**

Okuloplastično – rekonstruktivni i protetski tretman postraumatskih lezija orbitalne regije

### **Autori:**

Bogdanović Miroljub, Obućina Đoko, Bogdanović Vladimir, Bogdanović Milica

### **Ustanova:**

Gamma Medicina, Beograd, Srbija

### **Cilj:**

Prikaz šest slučajeva tretmana post-traumatskih lezija orbitalne regije tretiranih okuloplastično rekonstruktivnim i protetskim metodama.

### **Bolesnici i metode:**

Analizirani su funkcionalno-estetski rezultati ukupnog okuloplastično-rekonstruktivnog i protetskog tretmana kod 6 reprezentativnih pacijenata. Anatomske strukture orbitalnih regija su bile sa izraženim post-traumatskim lezijama zbog kojih je protetski tretman bio jako otežan ili onemogućen.

### **Rezultati:**

Analizirani pacijenti su operativno i protetski tretirani u više navrata. Sprovedene su različite okuloplastično-rekonstruktivne i protetske procedure zavisno od potrebe za korekcijom postojećih lezija orbitalnih regija. Neophodne okuloplastične procedure su obuhvatale nadoknadu nedostajućeg volumena različitim vrstama orbitalnih implanata i filera, kao i korekciju deformiteta koštanih struktura orbite, korekciju deformiteta i pozicije kapaka, transplantaciju mukoznog grafta, korekcije konjunktivalnih forniksa. Postignuti su zadovoljavajući rezultati, u funkcionalnom i estetskom smislu.

### **Zaključak:**

Posle primene neophodnih okuloplastično-rekonstruktivnih zahvata praćenih komplementarnim protetskim tretmanom u slučajevima kada je protetska rehabilitacija bila potpuno onemogućena ili jako otežana, postignuti su zadovoljavajući funkcionalno-estetski efekti protetskog tretmana i korigovan stepen unakaženosti, a sve u cilju korektne socijalizacije i kvaliteta života ove kategorije pacijenata.

### **Title:**

Oculoplastic, reconstructive and prosthetic treatment of post-traumatic lesions of the orbital region

### **Authors:**

Bogdanović M, Obućina Đ, Bogdanović V, Bogdanović M

### **Institution:**

Gamma Medicina, Belgrade, Serbia

### **Aim:**

To present six cases of treatment of post-traumatic lesions of the orbital region treated with oculoplastic, reconstructive and prosthetic methods

**Patients and methods:**

The functional and esthetic results of complete oculoplastic, reconstructive and prosthetic treatment were analyzed in 6 representative patients. The anatomical structures of orbital regions were with prominent post-traumatic lesions due to which prosthetic treatment was very difficult or impossible.

**Results:**

Analyzed patients were surgically and prosthetically treated on several occasions. Various oculoplastic, reconstructive and prosthetic procedures were conducted depending on the required correction of the existing lesions of orbital regions. The required oculoplastic procedures included: substitution of the missing volume with various types of orbital implants and fillers, as well as correction of deformities of orbital bone structures, correction of eyelid deformity and position, mucosal graft transplantation, correction of conjunctival fornices. Satisfactory results have been achieved from both functional and aesthetic aspect.

**Conclusion:**

In cases where prosthetic rehabilitation was impossible or very difficult, the administration of necessary oculoplastic and reconstructive procedures accompanied by complementary prosthetic treatment achieved satisfactory functional esthetic effects of prosthetic treatment and correction of deformity facilitating socialization and quality of life of such patients.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA ORBITU / Orbit section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Miroljub

**Ime i prezime / First and Last Name:-Last**

Bogdanovic

## **20. Goran Marić**

### **Naslov:**

GUBITAK ENDOTELNIH STANICA ROŽNICE NAKON FAKOEMULZIFIKACIJE - TROGODIŠNJE PRAĆENJE

### **Autori:**

Marić G, Petric Vicković I, Lacmanović Lončar V, Ivezković R, Vatavuk Z

### **Ustanova:**

Klinika za očne bolesti KBC Sestre milosrdnice, Zagreb

### **Cilj:**

ustanoviti gubitak endotelnih stanica rožnice nakon operacije katarakte fakoemulzifikacijom.

### **Bolesnici i metode:**

Ova prospektivna studija provedena je od 1/2016. do 2/2019. na Klinici za očne bolesti KBC-a Sestre milosrdnice u Zagrebu. Uključeno je ukupno 35 očiju od 35 pacijenata (23 žene i 13 muškaraca) u dobi od 42 do 85 godina (u trenutku početka studije) sa nekomplikiranom kataraktom. Isključujući kriteriji su bili ranije operacije na oku, uveitis, postojanje druge očne patologije kao što je glaukom, okluzija arterije ili vene centralis retine, senilna makularna degeneracija, te šećerna bolest. Učinjena je rutinska operacija katarakte fakoemulzifikacijom na istom aparatru od strane 3 različita očna kirurga. Svim pacijentima učinjeno je snimanje endotela rožnice spekularnim mikroskopom Tomey EM 400 preoperativno, 1 mjesec poslije operacije te 3 godine poslije operacije.

### **Rezultati:**

Prosječna gustoća endotelnih stanica iznosila je 2456,34 stanice po mm<sup>2</sup> preoperativno, 1989,85 stanica po mm<sup>2</sup> jedan mjesec poslije operacije, te 1913,80 stanica po mm<sup>2</sup> tri godine poslije operacije. Gubitak endotelnih stanica jedan mjesec poslije operacije iznosio je prosječno 18,99%, a tri godine poslije operacije 22,08%.

### **Zaključak:**

Nakon značajnog jednokratnog gubitka ukupnog broja endotelnih stanica poslije operacije, daljnji trend pada iznosio je samo 1,03% stanica godišnje.

### **Title:**

CORNEAL ENDOTHELIAL CELL LOSS AFTER PHACOEMULSIFICATION - 3 YEARS FOLLOW-UP

### **Authors:**

Marić G, Petric Vicković I, Lacmanović Lončar V, Ivezković R, Vatavuk Z

### **Institution:**

Clinical department of ophthalmology, Sestre milosrdnice University Hospital Center, Zagreb

### **Aim:**

to evaluate corneal endothelial cell loss after phacoemulsification cataract surgery.

### **Patients and methods:**

This prospective study was performed from January 2016 till February 2019 at Clinical department of ophthalmology, Sestre milosrdnice University Hospital Center. 35 eyes of 35 patients with uncomplicated cataract (23 female and 13 male) at the age 42 to 85 (at the beginning of study) were included. Exclusion criteria were earlier eye surgeries, uveitis or other ocular pathology such as glaucoma, central retinal vein or artery occlusion, age related macular degeneration or diabetes mellitus. Routine phacoemulsification cataract surgery was performed by three different eye surgeons using the same PHACO machine. All patients were measured using specular microscope Tomey EM 4000 at three time points: preoperatively, 1 month after the surgery and three years after the surgery.

### **Results:**

Average endothelial cell density was 2456.34 cells/mm<sup>2</sup> preoperatively, 1989.85 cells/mm<sup>2</sup> one month after the surgery and 1913.80 cells/mm<sup>2</sup> three years after the surgery.

Corneal endothelial cell loss was 18.99% one month after the surgery and 22.08% three years after the surgery.

### **Conclusion:**

After significant short-term cell loss following phacoemulsification, further cell loss was only 1.03% per year.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Goran

**Ime i prezime / First and Last Name:-Last**

Marić

## **21. Tea Čaljušić-Mance**

### **Naslov:**

Iznenadno jednostrano pogoršanje vida kao posljedica koronarne angiografije

### **Autori:**

Tea Čaljušić-Mance, Tamara Mišljenović, Zvjezdana Alpeza-Dunato, Lana Kostić

### **Ustanova:**

KBC Rijeka

### **Cilj:**

Nakon koronarne angiografije rijetko su zabilježeni očni simptomi i uglavnom su bili vezani uz kontrastom inducirana tranzitorna kortikalna sljepoću. Željeli smo prikazati slučaj rijetke komplikacije koronarne angiografije.

### **Bolesnici i metode:**

63-

godišnja pacijentica javila se na našu Kliniku zbog iznenadnog zamagljenja vida desnog oka nakon koronarne angiografije. Sama angiografija protekla je bez incidenta. U prvom danu nakon koronarografije potužila se na iznenadno zamagljeni i zasjenjen vid desnog oka. CT snimka mozga učinjena je odmah da se isključi kontrastom inducirana tranzitorna kortikalna sljepoća, ali je bila uredna te se pacijentica javila na Oftalmološku kliniku. Pacijentica boluje od ishemične kardiomiopatije i preboljela je infarkt miokarda te ima makularnu degeneraciju oba oka, a uzima i mnogo lijekova. Očni tlak bio je 12 mmHg obostrano. Odredila joj se vidna oštrina, učinjena je fundoskopija, fluoresceinska angiografija i optička koherentna tomografija.

### **Rezultati:**

Na prvom pregledu vidna je oštrina bila 0.05 desno i 0.8 lijevo. Intraokularni tlak bio je 12 mmHg oba oka. I pregled biomikroskopom prikazao je urednu prednju sobicu. Fundoskopija desnog oka pokazala je nekoliko sitnih bijelih mrlja u blizini desne makule, najvjerojatnije mekih eksudata. Lijevo je bila zanemariva. Fluoresceinska angiografija potvrdila je okluziju malih ograna gornje temporalne grane arterije centralis retine s „non perfuzijom“ tkiva u hipofluorescentnim područjima. OCT je prikazao normalnu foveu s paracentralnom atrofijom i PEDom blizu nazalne makularne granice. Postepeno pobjoljšanje vidne oštirine zabilježeno je tijekom jednog mjeseca do vrijednosti od 0.5 bez liječenja.

### **Zaključak:**

Koronarna angiografija je minimalno invazivni postupak i jedan od najčešćih dijagnostičkih testova koji se provode i za dijagnostičke i interventne svrhe u suvremenoj kardiologiji. Uobičajene komplikacije uključuju srčanu aritmiju, infarkt miokarda, prolazni ishemijski napad, moždani udar i alergijsku reakciju. Incidencija oftalmičkih komplikacija u dijagnostičkoj koronarnoj angiografiji je izuzetno niska, a diferencijalna dijagnoza uvijek treba uključivati prolaznu kortikalnu sljepoću, okluziju retinalne arterije, amaurosis fugax i histeričnu sljepoću. U našem slučaju prepostavljamo da su nevidljivi mikroemboli uzrokovali prekid aksoplazmatskog protoka u kombinaciji sa sitnom BRVO i akumulaciju aksoplazmatskog materijala unutar sloja živčanih vlakana i rezultirali su mekim eksudatima koji su nestali 4-5 tjedana nakon početnog pojavljivanja. Ukratko prikazujemo intrigantan slučaj 63-

godišnje žene spojavom mekih eksudata u desnom oku u kombinaciji s malim BRVO-om nakon koronarne angiografije i naglašavamo ovu rijetku postkardijarnu komplikaciju koronarografije za buduće kardiologe i oftalmologe.

**Title:**

Sudden Unilateral Vision Deterioration Following Coronary Angiography

**Authors:**

Tea Čaljkušić-Mance, Tamara Mišljenović, Zvjezdana Alpeza-Dunato, Lana Kostić

**Institution:**

Clinical Hospital Center Rijeka, Rijeka, Croatia

**Aim:**

Visual symptoms after coronary angiography are rarely encountered and mostly related to contrast induced transient cortical blindness. We would like to show case report of the rare post coronary angiography complication.

**Patients and methods:**

A 63-year-old woman was referred to our clinic for acute onset of blurred vision in her right eye after coronary angiography. Her coronary angiography was uneventful. During first day after catheterization the patient complained of sudden blurred and patchy vision in the right eye. Computed tomography scan of the patient's brain was performed immediately to exclude a contrast induced transient cortical blindness, but it was unremarkable and the patient was referred to the department of ophthalmology. The patient had a history of ischaemic cardiomyopathy and myocardial infarction and macular degeneration of both eyes so she was on many medications. Intraocular pressures were 12 mm Hg. She underwent determination of visual acuity, fundoscopy, fluorescein angiography and optical coherent tomography.

**Results:**

On examination, the visual acuity (VA) was 0.05 in the right and 0.8 in the left eye. Intraocular pressures were 12 mm Hg both sides and slit lamp examination showed a normal anterior chamber. Fundoscopy of the right eye revealed a tiny few whitish patch near the right macula, suggestive of cotton wool spots. The left funduscopy findings were unremarkable. Fluorescein angiography confirmed occlusion of the small branches of retinal temporal artery upper branch with nonperfusion of the tissue bed in the hypofluorescent areas in right eye. OCT shows normal foveal part with paracentral atrophy and PED near nasal macular border. Gradually improving of visual acuity was noticed in one month period to 0.5 without treatment.

**Conclusion:**

Coronary angiography is a minimally invasive procedure and one of the commonest diagnostic tests performed for both diagnostic and interventional purposes in modern cardiology. Common complications include cardiac arrhythmia, myocardial infarct, transient ischemic attack, stroke and allergic reaction. The incidence of ophthalmic complications in diagnostic coronary angiography is extremely low, and differential diagnosis should always include contrast induced transient cortical blindness, retinal artery occlusion, amaurosis fugax and hysterical blindness. In our case, we presume that non visible micro emboli caused the axoplasmic flow interruption combined with tiny BRVO and accumulation of axoplasmic material within the nerve fiber layer and resulted in cotton wool spots that resolved 4-5 weeks after initial presentation. Summarizing we present an intriguing case of a 63-year-old woman with cotton wool spots in her right eye combined with tiny BRVO after coronary angiography.

phy and emphasize this rare post cardiac catheterization complication for future cardiologists and ophthalmologists.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tea

**Ime i prezime / First and Last Name:-Last**

Čaljkušić-Mance

## **22. Ivna Pleština-Borjan**

### **Naslov:**

Usporedba postojećih tehnika kirurškog liječenja regmatogenog odignuća mrežnice

### **Autori:**

Ivana Pleština-

Borjan, Kajo Bućan, Ljubo Znaor, Alen Siničić, Darko Batistić, Karla Katić, Ivana Barun

### **Ustanova:**

Klinika za očne bolesti, KBC Split

### **Cilj:**

Usporediti funkcionalne i anatomske rezultate sadašnjih kirurških tehnika zbrinjavanja primarnog regmatogenog odignuća mrežnice

### **Bolesnici i metode:**

U razdoblju od tri godine (od siječnja 2016 do kraja prosinca 2018) u Klinici za očne bolesti KBC Split, četiri vitreoretinalna kirurga operirala su 175 bolesnika zbog regmatogenog odignuća mrežnice. Urađena je retrospektivna analiza podataka svih operiranih bolesnika. U studiju su uključeni svi operirani bolesnici s najmanje 6 mjeseci poslije operacijskog praćenja. Bolesnici su obzirom na tehnike operacijskog zahvata podijeljeni u tri skupine: 112 bolesnika iz skupine PPV, bila je operirana tehnikom pars plana vitrektomije; 48 bolesnika iz skupine PR operirano je tehnikom kriopneumoretinopeksije; a 14 bolesnika iz skupine SB operirano je konvencionalnom tehnikom operacije odignuća mrežnice s postavljanjem silikonske plombe. Procjenjivan je primarni i konačni (nakon 6 mjeseci) anatomski uspjeh operacijskog zahvata kao i neuspjeh (ponovno odvajanje mrežnice) te mogući uzroci primarnog neuspjeha liječenja. Dobiveni rezultati uspoređivani su među promatranim skupinama. Statistički značajnom razlikom smatrana je vrijednost  $p < 0.05$ .

### **Rezultati:**

Od ukupno 174 operiranih bolesnika, 112 (64,4%) njih je bilo podvrgnuto pars plana vitrektomiji, 48 (27,6%) kriopneumoretinopeksiji a u 14 (8.04%) bolesnika urađena je konvencionalna operacija ablacijske mrežnice s postavljanjem silikonske plombe i/ili serklaža. Prosječna dob bolesnika iznosila je 62 g odine. Najmlađi bolesnik bio je star 21 godinu. U 75 bolesnika bila je operirana mrena s ugrađenom intraokularnom lećom, a dvoje bolesnika bilo je afakno. ( 47 bolesnika urađena je kombinirana operacija mrene i vitrektomije (PHACO + PPV). Tijekom perioda praćenja bolesnika još je sedmero bolesnik a iz skupine PPV trebalo operirati mrene. Primarni anatomski uspjeh postignut je u 87.5% bolesnika u grupi PPV, te jednako toliko i u grupi PR, dok je u SB grupi uspješnost iznosila 92,86%. Ponovni operacijski zahvat zbog ponovnog odignuća mrežnice trebalo je 12.5 % bolesnika u PPV skupini jednako kao i u PB skupini, dok je u SB skupini samo jedan bolesnik trebao reoperaciju. Nije bilo statistički značajne razlike u postignutom primarnom anatomskom uspjehu liječenja između tri korištene operacijske tehnike ( $p=0.840238$ ). U pseudofaknih bolesnika primijećen je statistički značajno veći neuspjeh primarnog kirurškog zbrinjavanja neovisno o samoj kirurškoj tehnici (( $p < 0.05$ ). U pet bolesnika bilo je potrebno više od jednog reoperacijskog zahvata zbog različitih komplikacija (vitreoretinalne proliferacije, sekundarni glaukom i dr.)

### **Zaključak:**

Istraživanje nije pokazalo statistički značajnu razliku u anatomskom uspjehu liječenja regmatogenog odignuća mrežnice između triju korištenih kirurških tehnika: pars plana vitrektomije, kriopneumoretin opeksije i konvencionalne operacije s postavljanjem silikonske plombe. Ni jedna od novijih studija ta kođer nije pokazala jasnu značajnu prednost jedne od ovih metoda pred drugom. Svaka od tri navedene operacijske tehnika za zbrinjavanje regmatogenog odignuća mrežnice, morala bi zadovoljiti slijedeće uvjete: 1. da se retina ponovo priljubi u samo jednom operacijskom zahvatu; 2. da se to postigne uz minimalni morbiditet; 3. da se zahvat izvede u lokalnoj anesteziji uz što manji trošak; 4. da se ne induciraju sekundarne komplikacije koje mogu ugroziti vid. Stoga je važno da vitreoretinalni kirurg bude upoznat sa sve tri kirurške tehnike, kako bi bio u mogućnosti odabratи postupak ili kombinacije postupaka temeljene na nalazima na oku (lokacija, veličina i broj retinalnih ruptura, vitrealne trakcije na rupturu, prisustvo i proširenost palisadnih degeneracija, stanje žute pjege, stanje leće, mogućnost dobre vizualizacije mrežnične periferije i dr.) i temeljem dobi i mogućnosti poslije operacijske suradnje bolesnika. Potrebno je još jednom naglasiti da poznавање svih triju kirurških metoda daje mogućnost kirurgu da odabere postupak koji je najpogodniji za samu ablaciјu za oko, kao i za samog bolesnika po mogućnosti u lokalnoj anesteziji i uz što manji trošak.

**Title:**

Comparison of present techniques for repair of primary rhegmatogenous retinal detachment

**Authors:**

Ivana Pleština-

Borjan, Kajo Bućan, Ljubo Znaor, Alen Siničić, Darko Batistić, Karla Katić, Ivana Barun

**Institution:**

Eye Clinic, Clinical Hospital Centre Split

**Aim:**

To evaluate contemporary surgical management of primary rhegmatogenous retinal detachment and to compare the anatomical and functional outcomes of different surgical techniques.

**Patients and methods:**

During three years period (from January 2016 to the end of December 2018) a total of 174 patients with primary rhegmatogenous retinal detachment were operated by four surgeons at the Eye Clinic, Clinical Hospital Center Split. Patient records were retrospectively analysed. All patients with at least 6 months follow-

up were included in the study. Patients were divided into 3 groups according to underwent surgical procedures: 112 patients who underwent pars plana vitrectomy (PPV group); 48 patients who underwent pneumatic retinopexy (PR group) and only 14 patients who underwent scleral buckling (SB group) surgery. Primary and final (6 months after primary surgery) anatomical and functional success was evaluated as well as the possible causes of primary failure of treatment and retina redetachment. The outcomes were compared between the investigated groups. P-value <0.05 was considered statistically significant.

**Results:**

Of total 174 operated patients, 112 (64,4%) underwent pars plana vitrectomy, 48 (27,6%) pneumatic retinopexy and scleral buckle only 14 (8.04%) patients. Average patients' age was 62 years. The youngest patient was 21 years old. Seventy-

five eyes were pseudophakic. Combined operation of PHACO and PPV was done in 47 patients. During follow-

up period another 7 patients from PPV group need cataract operation, because of cataract caused by si

licon oil. Primary anatomical success was achieved in 87.5% in the PPV group, 87.5% in the PR group and 92,86% in the SB group. Surgical retreatment because of redetachment was needed in 14 (12,5 %) patients in PPV group, in 6 (12,5%) patients in PR group and in one (7,14%) patient in SB group. There were no statistically significant differences ( $p= 0.840238$ ) in primary anatomical success between three surgical techniques used in the treatment of regmatogenous retinal detachment. The statistically significant total number of reoperations were observed in pseudophakic patients ( $p< 0.05$ ). The five patients required more than one retreatment due to different complications (vitreoretinal proliferations, secondary glaucoma, etc.)

### **Conclusion:**

The study showed no significant differences in the anatomical success rates in the treatment of rhegmatogenous retinal detachment between pars plana vitrectomy, scleral buckle or pneumatic retinopexy. Each of these surgical techniques has its indications and contraindications. Any of the recent studies, has not demonstrated a clear benefit of one method over another. In each of the three procedures for repair of a primary rhegmatogenous retinal detachment the following issues should be fulfilled: 1. to achieve retinal reattachment with only one operation; 2. to achieve retinal reattachment with minimum of morbidity; 3. to perform the surgery on a small budget and under local anesthesia; 4. not to induce secondary complications endangering regained visual function. So, it is important for vitreoretinal surgeon to be familiar with all three surgical techniques, to be able to choose procedure or its combinations based on ocular features (location , size and number of retinal breaks, vitreous traction on the retina breaks, presence and extent of lattice degeneration, status of macula, lens status, possibility of visualization of the retinal periphery) and the patient's age as well as his ability to cooperate with postoperative requirements. It is important to emphasize once again, that familiarity with all of the three methods of retinal detachment repair allows vitreoretinal surgeon to choose the procedure that best fits the retinal detachment, the eye and the patients, preferably in local anesthesia and at a lower cost.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ivana

**Ime i prezime / First and Last Name:-Last**

Pleština-Borjan

## **23. Lana Kostić**

### **Naslov:**

Prikaz slučaja: Vitrealno krvarenje kod djeteta

### **Autori:**

Lana Kostić, dr.med; Doc.dr.sc. Tea Čaljkušić Mance,dr med; Prof.dr.sc. Damir Kovačević, dr.med.; Vedran Markušić,dr.med.

### **Ustanova:**

Klinički bolnički centar Rijeka, Klinika za oftalmologiju

### **Cilj:**

Dijagnostička obrada obostranog vitrealnog krvarenja u djeteta

### **Bolesnici i metode:**

11-  
godišnja djevojčica ; Učinjena LFK retine, ekstenzivna oftalmološka, pedijatrijska , laboratorijska, slikovna i serološka obrada

### **Rezultati:**

Uz LFK i IVT popravak vidne oštchine sa MRPO na 1,0 sc  
-uzrok i dalje nejasan

### **Zaključak:**

Dijagnostička obrada u tijeku

### **Title:**

Case report: Vitreous haemorrhage in children

### **Authors:**

Lana Kostić, dr.med; Doc.dr.sc. Tea Čaljkušić Mance,dr med; Prof.dr.sc. Damir Kovačević, dr.med.; Vedran Markušić,dr.med.

### **Institution:**

University Hospital Center Of Rijeka, Department of Ophthalmology

### **Aim:**

To present diagnostic tests in bilateral vitreous haemorrhage in child

### **Patients and methods:**

11-  
year old girl; laser and ivt treatment, extensive ophthalmologic, pediatric, radiology, lab and serology tests

### **Results:**

With LFK and IVTH visual acuity went from counting fingers to 1,0 without correction  
-cause still not determined

**Conclusion:**

Diagnostic tests still going on

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Lana

**Ime i prezime / First and Last Name:-Last**

Kostić

## **24. Marin Belak**

### **Naslov:**

Subfoveolarni PFO- prikaz slučaja

### **Autori:**

Belak M., Vatavuk Z.

### **Ustanova:**

KBC Sestre milosrdnice

### **Cilj:**

Prikazati način i učinak uklanjanja subfoveolarnog perfluoroctana kroz prikaz slučaja.

### **Bolesnici i metode:**

Pacijent u dobi 62 g. prezentira se sa zaostatkom subfoveolarnog i subretinalnog perflourooctana nako n prethodne operacije ablacija retine sa multiplim rupturama (PPV, endolaser, PFO, insufflatio SF6 in CV). Bolesnik postoperativno navodi poboljšanje vida, no žali se na izobličenje slike. Druga operacija je učinjena 25 dana nakon prve operacije. Kao druga operacija se učini pars plana vitrektomija sa jat rogenim formiranjem serozne ablacijske retine uz donju temporalnu arkadu uz upotrebu 41 G kanile (Expendable 41G subretinal injection needle, DORC), te Alcon Constellation aparata. Nakon formiranja mjeđuhra serozne ablacijske retine, učinjena je izmjena tekućina/zrak radi širenja mjeđuhra ablacijske prema makularnom/foveolarnom području. Operacija se završi izmjenom zrak/SF6 plin. Postoperativno bolesnika se uputi da održava sjedeći ili uspravan položaj za vrijeme budnosti. Preoperativno i postoperativno je učinjen kompetan oftalmološki pregled, te OCT snimke i snimke fotofundusa.

### **Rezultati:**

Postoperativno dolazi do pomicanja subfoveolarnog PFO prema medioretini, te oporavka vidne oštine i gubitka metamorfopsija.

### **Zaključak:**

Subfovealni zaostatak perflourooctana uzrokuje značajano smanjenje centralne vidne oštine. Prikaznom operativnom tehnikom ranog pomicanja perflourooctana iz foveolarnog područja prema periferiji retine postiže se značajan oporavak vidne oštine i metamorfopsija.

### **Title:**

Subfoveal PFO (perflourooctane)- case report

### **Authors:**

Belak M., Vatavuk Z.

### **Institution:**

KBC Sestre milosrdnice

### **Aim:**

Case report will present the technique and result of subfoveal PFO displacement.

### **Patients and methods:**

62 year old male patient presents with residual PFO from earlier retinal detachment surgery with multiple holes (PPV, endolaser, PFO, insufflation SF6 in CV). Patient reports improvement of vision but complains of metamorphopsia. Subfoveal and subretinal PFO was confirmed with clinical examination and OCT. We performed pars plana vitrectomy with iatrogenic serous retinal detachment made with 41G needle injection (Extendible 41G subretinal injection needle, DORC) and the use of Alcon Constellation machine 25 days after the first surgery. After performing bullose retinal detachment near the inferior arcade fluid/air exchange was made to push the detachment in the macular/foveal area. Surgery was finished with air/SF6 gas exchange. Patient was instructed to maintain upright position during awake time. Complete ophthalmology exam, OCT and photo images were taken before and after surgery.

### **Results:**

After displacing subretinal PFO from the foveolar area to the periphery patient has increase in BCVA and loss of metamorphopsia.

### **Conclusion:**

Residual subfoveal PFO causes significant loss of visual acuity. Reported surgical technique from this case report showed that early displacement of subfoveal PFO leads to recovery of visual acuity and loss of metamorphopsia and is one of the promising techniques to treat this cases.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.

Specijalist / Specialist

### **Ime i prezime / First and Last Name:-First**

Marin

### **Ime i prezime / First and Last Name:-Last**

Belak

## **25. Andrijana Kopić**

### **Naslov:**

Početni odgovor na anti-  
VEGF terapiju kao prognostički faktor za ishod liječenja eksudativne senilne makularne degeneracije

### **Autori:**

Kopić Andrijana; Vinković Maja; Benašić Tvrkta; Jukić Tomislav; Bradvica Mario; Barać Josip

### **Ustanova:**

Klinički bolnički centar Osijek, Klinika za očne bolesti

### **Cilj:**

Istražiti procjenu ranog odgovora na anti-  
VEGF terapiju kod eksudativne senilne makularne degeneracije (SMD) i istražiti njegovu povezanost  
s ishodom liječenja SMD nakon 3 godine.

### **Bolesnici i metode:**

Ispitanici su bolesnici iz redovne retinološke ambulante naše Klinike koji su liječeni intravitrealnim in-  
jekcijama anti-VEGF-

a (bevacizumaba) radi eksudativne senilne makularne degeneracije. Istraživanje je provedeno retrospek-  
tivno. Rani odgovor na anti-

VEGF terapiju definiran je kao promjena vidne oštine i promjena OCT nalaza nakon tri inicijalne injekcije bevacizumaba koje su aplicirane svaka 4 tjedna. Također je učinjena analiza ukupnog broja anti-

-  
VEGF injekcija tijekom liječenja, te procjena vidne oštine i analiza OCT nalaza nakon liječenja intra-  
vitrealnim injekcijama bevacizumaba u trajanju tri godine. Nakon toga je učinjena i statistička analiza  
povezanosti početnog odgovora na anti-

VEGF terapiju i postignute vidne oštine i promjene OCT nalaza nakon liječenja od tri godine.

### **Rezultati:**

Ukupno je analizirano 50-  
ak očiju. Preliminarni rezultati analize pokazuju da je dobar početni odgovor na prve tri injekcije bevacizumaba u smislu poboljšanja vidne oštine i OCT nalaza povezan s većim oporavkom vidne oštine  
nakon provedenog trogodišnjeg liječenja.

### **Zaključak:**

Opterećenje brojem bolesnika i dijagnoza koje danas liječimo anti-  
VEGF terapijom sve je veće i dugotrajnije. S obzirom na velike varijacije u odgovoru na ovu vrstu ter-  
apije, važno je brzo nakon početka liječenja procijeniti koliku će korist od same terapije bolesnik imat i i eventualno za neke od njih ranije pokušati s drugim modalitetima liječenja. Za eksudativnu SMD is-  
tražuju se brojni prognostički faktori odgovora na anti-

VEGF terapiju, a rani odgovor mogao bi se pokazati kao vrlo koristan prognostički faktor za ishod lije-  
čenja ove bolesti.

### **Title:**

Initial treatment response as a predictive factor for anti-VEGF therapy outcomes in neovascular age-  
related macular degeneration

**Authors:**

Kopić Andrijana; Vinković Maja; Benasić Tvrka; Jukić Tomislav; Bradvica Mario; Barać Josip

**Institution:**

University Hospital Centre Osijek, Department of Ophthalmology

**Aim:**

To explore the assessment of the initial response to intravitreal anti-VEGF therapy in neovascular age-related macular degeneration (nAMD) and investigate its possible association with 3-year treatment outcomes.

**Patients and methods:**

Participants were patients from our Department that were treated with intravitreal anti-VEGF(bevacizumab) injections for nAMD. Study was retrospectively designed. The early response was defined as the change of visual acuity and OCT findings after initial three bevacizumab injections that were applied every four weeks. We also analyzed overall number of intravitreal injections, assessed the visual acuity and OCT findings after the 3-year treatment. We investigated the possible association of the initial treatment response and 3-year anti-VEGF therapy outcomes.

**Results:**

This study included about fifty eyes. Preliminary results showed that good early treatment response to initial three anti-VEGF injections was associated with good 3-year treatment outcomes, especially with good visual acuity outcomes.

**Conclusion:**

The burden of anti-VEGF therapy is getting larger every day. Considering large variations in the response to anti-VEGF therapy, it is important to assess possible benefit of the treatment early after the onset and possibly consider other treatment modalities for some patients. There are numerous studies that are trying to define predictive factors for treatment outcomes in nAMD and early response to anti-VEGF therapy could be very useful in that assessment.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Andrijana

**Ime i prezime / First and Last Name:-Last**

Kopić

## **26. Jelena Juri Mandić**

### **Naslov:**

Autori: Jelena Juri Mandić, Sanja Kusačić Kuna, Maja Barić, Sanja Perić, Josip Knežević, Tomislav Jukić, Nenad Vukojević PREGO III pilot studija Hrvatska : promjena kliničkih i epidemioloških obrazaca

### **Autori:**

Jelena Juri Mandić, Sanja Kusačić Kuna, Maja Barić, Sanja Perić, Josip Knežević, Tomislav Jukić, Nenad Vukojević

### **Ustanova:**

Klinika za očne bolesti Medicinskog fakulteta Sveučilišta u Zagrebu, KBC Zagreb

### **Cilj:**

identificirati promjene u kliničkoj prezentaciji Gravesove orbitopatije kod bolesnika koji se javljaju u tercijarnu bolničku ustanovu i analizirati trend mogućih promjena u inicijalnom liječenju.

### **Bolesnici i metode:**

Klinička studija bit će provedena kao prospektivno, observacijsko, multicentrično istraživanje. U istraživanju sudjeluju bolesnici sa novootkrivenom Gravesovom orbitopatijom koji se javljaju na liječenje na Kliniku za očne bolesti KBC Zagreb kao službeni EUGOGO centar u Hrvatskoj u periodu od 4 mjeseca zaključno sa 1.5.2019

### **Rezultati:**

Kliničke i demografske karakteristike, vremenski okvir od početka bolesti do javljanja u EUGOGO centar Hrvatska , kao i opcije inicijalnog liječenja Gravesove orbitopatije bit će zabilježene na anonimnom upitniku , a dobiveni podatci će se statističkom analizom obraditi i usporediti sa rezultatima prethodne PREGO studija.

### **Zaključak:**

Rezultati studije upućuju da se u Europi kliničke manifestacije kod bolesnika sa GO mijenjaju kroz vrijeme.

### **Title:**

PREGO III pilot study Croatia (PREsentation of Graves' Orbitopathy): changes in referral patterns to European Group on Graves' Orbitopathy EUGOGO center Croatia- Department of ophtahlmology , UHC Zagreb over the period from 2012-2019.

### **Authors:**

Jelena Juri Mandić, Sanja Kusačić Kuna, Maja Barić, Sanja Perić, Josip Knežević, Tomislav Jukić, Nenad Vukojević

### **Institution:**

Department of Ophthalmology Medical School, UHC Zagreb

### **Aim:**

The aim of the study is to identify the changes in presentation of Graves' orbitopathy (GO) to tertiary centers and analyze the changes in initial treatment trends

**Patients and methods:**

In this study the patients with Graves' orbitopathy will be included. All new referrals with a diagnosis of GO over a 4-

month period to a European Group on Graves' Orbitopathy (EUGOGO) will be included in the study.

**Results:**

Clinical and demographical characteristics, referral timelines and the initial decisions about the treatment of the thyroid disease and GO will be recorded. The data will be compared to the prior publications

**Conclusion:**

These findings suggest that clinical manifestation of patients with GO might be changing over time in Europe.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA ORBITU / Orbit section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Jelena

**Ime i prezime / First and Last Name:-Last**

Juri Mandić

## **27. Iva Bešlić**

### **Naslov:**

Strukturne promijene sloja mrežničnih živčanih vlakana i sloja ganglijskih stanica dijagnosticirane optičkom koherentnom tomografijom u bolesnika s multiplom sklerozom

### **Autori:**

Bešlić I, Matić M, Vidović T, Vojvodić L, Omazić H, Vukojević N

### **Ustanova:**

KBC Zagreb, Klinika za očne bolesti Medicinskog fakulteta u Zagrebu

### **Cilj:**

Prikaz strukturalnih promijena na optičkoj koherentnoj tomografiji (OCT) u bolesnika s multiplom sklerozom (MS).

### **Bolesnici i metode:**

Ispitanici su bolesnici s MS-om podijeljeni u dvije skupine. U prvoj skupini su bolesnici koji su zbog akutnog optičkog neuritisa treatirani pulsном kortikosteroidnom terapijom, a u drugoj su oni bez zabilježene epizode akutnog optičkog neuritisa. Objema skupinama učinjena je dijagnostička pretraga OCT.

### **Rezultati:**

U ispitanika sa dijagnosticiranim akutnim optičkim neuritisom na OCT-u je zabilježeno stanjenje sloja živčanih vlakana i sloja ganglijskih stanica. Također je i u nekim bolesnika iz druge skupine, onima kojim akutni optički neuritis nije dijagnosticiran, nađeno stanjenje u oba sloja, no promijene su manje izražene.

### **Zaključak:**

Analiza rezultata optičke koherentne tomografije pokazala je da u bolesnika, kojima je dijagnosticiran i kortikosteroidnom pulsном terapijom liječen akutni optički neuritis, najprije dolazi do stanjenja u sloju ganglijskih stanica te potom do stanjenja sloja živčanih vlakana. Jednaki rezultati dobiju se i kod dijela pacijenata iz druge skupine, kod kojih se akutni optički neuritis nije manifestirao, a imaju multiplu sklerozu.

### **Title:**

Structural changes in retinal nerve fibre layer and ganglion cell layer diagnosed with optical coherence tomography in patients with multiple sclerosis

### **Authors:**

Bešlić I, Matić M, Vidović T, Vojvodić L, Omazić H, Vukojević N

### **Institution:**

University Hospital Centre Zagreb, Department of ophthalmology

### **Aim:**

The aim of the study was to show structural changes assessed by optical coherence tomography (OCT) in patient with multiple sclerosis (MS).

**Patients and methods:**

The subjects were patients with multiple sclerosis, divided into two groups. The first group is comprised of patients with acute optic neuritis that were treated with pulse corticosteroid therapy, and the second group is comprised of patients without episode of acute optic neuritis. OCT was done to both groups.

**Results:**

Patients with acute optic neuritis showed significant thickness reduction in retinal nerve fiber layer and in ganglion cell layer. Thickness reduction in both layers was also found in patients without previous acute optic neuritis, although in a much lesser extent.

**Conclusion:**

Analysis of OCT results showed that thickness reduction in ganglion cell layer can be found before thickness reduction in retinal nerve fiber in patients with previous acute optic neuritis treated with corticosteroid pulse therapy. Thickness reduction of both layers is also found in some patients with MS from the second group, who had not had an episode of acute optic neuritis.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Iva

**Ime i prezime / First and Last Name:-Last**

Bešlić

## **28. Dean Šarić**

### **Naslov:**

Skinuti ili ne (rožnični endotel) kod lamelarne keratoplastike nakon neuspješne penetrantne keratoplastike

### **Autori:**

D.Šarić, S. Ramić, B. Kuzmanović-Elabjer, M. Bušić

### **Ustanova:**

Očna klinika, KB "Sveti Duh"

### **Cilj:**

Cilj ove studije bio je usporediti rezultate lamelarne keratoplastike (Descemet-stripping automated endothelial keratoplasty (DSAEK) ) kod očiju sa prethodnom penetrantnom keratoplastikom.

### **Bolesnici i metode:**

Operirano je 10 očiju sa dekompenzacijom endotela nakon prethodne penetrirajuće keratoplastike. Kod 5 očiju ukonjen je endotel prethodne keratoplastike, a kod 5 je lamela postavljena na endotel prethodne keratoplastike. Uspoređeni su rezultati tijekom prve postoperativne godine.

### **Rezultati:**

U grupi gdje endotel prethodne keratoplastike nije uklonjen u dva slučaja došlo je do pomaka lamele i potrebe za repozicijom. Također je u istoj grupi došlo do jednog propadanja grafta. Vidna oštrina je bila bolja u grupi pacijenata gdje je endotel uklonjen.

### **Zaključak:**

Kod endotelne lamelarne keratoplastike rađene na očima sa prethodnom penetrantnom keratoplastikom bolji rezultati se postižu ako se dekompenzirani endotel ukloni. Dalja istraživanja na većem uzorku potrebna su da se potvrdi ova hipoteza.

### **Title:**

To remove or not to remove (corneal endothelium) in eyes with failed penetrating keratoplasty

### **Authors:**

D.Šarić, S. Ramić, B. Kuzmanović-Elabjer, M. Bušić

### **Institution:**

Eye Clinic, KB "Sveti Duh"

### **Aim:**

The aim of this study was to compare outcomes of Descemet-stripping automated endothelial keratoplasty (DSAEK) for eyes with previous penetrating keratoplasty (PK).

### **Patients and methods:**

Ten eyes with failed penetrating keratoplasty underwent Descemet-stripping automated endothelial keratoplasty. In 5 eyes decompensated endothelium of previous keratoplasty was removed and in 5 lamella was placed on endothelium of previous PK.

**Results:**

Ten eyes with failed penetrating keratoplasty underwent Descemet-stripping automated endothelial keratoplasty. In 5 eyes decompensated endothelium of previous keratoplasty was removed and in 5 graft was placed on endothelium of previous PK.

**Conclusion:**

Descemet-stripping automated endothelial keratoplasty in eyes with failed penetrating keratoplasty should be done with decompensated endothelium removal. Further investigations on larger number of patients should be done to confirm this hypothesis.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Dean

**Ime i prezime / First and Last Name:-Last**

Šarić

## **29. Ana Barbara Uršič**

### **Naslov:**

Residual Astigmatism After Toric Intraocular Iens Implantation

### **Autori:**

Ana Barbara Uršič, Vladimir Pfeifer

### **Ustanova:**

OKC Pfeifer, Ljubljana Slovenia

### **Cilj:**

to identify the amount of residual refractive astigmatism in patients who underwent cataract surgery and toric IOL implantation (Zeiss AT TORBI 709 M/MP) in OKC Pfeifer, Ljubljana Slovenia.

### **Bolesnici i metode:**

In the study were included 194 eyes of 134 patients who underwent cataract surgery and toric IOL implantation at OKC Pfeifer from January 2016 to September 2018. Statistical analysis was performed to determine uncorrected and best corrected visual acuity (UCDVA / BCDVA) using Snellen charts and the amount of residual astigmatism. Follow up was 2 to 20 months after the surgery. The mean spherical power of the implanted toric IOL was +16,7DSph and the median was +18.50DSph (range: 1.00DSph to +26.50DSph). The mean cylinder of the IOL was 2.43DCyl, the median was 2.00DCyl (range: 1.00DCyl to 10.00DCyl).

### **Rezultati:**

The mean age of the patients was 70.20 years (range: 36 to 74 years) and 51,6% of the patients were men, 82% of eyes had associated pathology such as macular degeneration, amblyopia, glaucoma, epiretinal membrane, etc. Mean BCDVA before surgery was 0.50, the median was 0.60 (range: CF to 1.00). Mean preoperative refraction was -1,60 D Sph, median was -0,50DSph (range: -20.00DSph to +6.50DSph). Mean preoperative refractive cylinder was 1,5DCyl, the median was 1,5DCyl (range: 0DCyl to 6.0DCyl). Mean keratometry was 44.471D, the median was 44.3 (range: 41.06D to 50.32D). Mean corneal astigmatism was 1.88DCyl, median was 1.55DCyl (range: 0,5DCyl to 7.25DCyl). Postoperative mean UCDVA was 0.86, the median was 1.00 (range: 0.16 to 1.20) and the mean BCDVA was 1.00, the median was 1.00 (range 0.30 to 1.50). Mean postoperative refraction was +0.15DSph, median was 0 D Sph (range: -0.75DSph to +1.75DSph). The mean postoperative refractive astigmatism was 0.31DCyl, the median was 0,3DCyl (range: 0D to 1,75DCyl). Mean spherical equivalent was 0.003, median is 0 (range: -0.75 to 1,5).

### **Zaključak:**

The residual postoperative astigmatism was very low in patients with corneal astigmatism who underwent cataract surgery and toric IOL (Zeiss AT TORBI 709 M/MP) implantation. Patients uncorrected visual acuity improved significantly and consequently also the quality of life.

### **Title:**

Residual Astigmatism After Toric Intraocular Iens Implantation

### **Authors:**

Ana Barbara Uršič, Vladimir Pfeifer

**Institution:**

OKC Pfeifer, Ljubljana Slovenia

**Aim:**

to identify the amount of residual refractive astigmatism in patients who underwent cataract surgery and toric IOL implantation (Zeiss AT TORBI 709 M/MP) in OKC Pfeifer, Ljubljana Slovenia.

Patients and methods:

In the study were included 194 eyes of 134 patients who underwent cataract surgery and toric IOL implantation at OKC Pfeifer from January 2016 to September 2018. Statistical analysis was performed to determine uncorrected and best corrected visual acuity (UCDVA / BCDVA) using Snellen charts and the amount of residual astigmatism. Follow up was 2 to 20 months after the surgery. The mean sphere power of the implanted toric IOL was +16,7DSph and the median was +18.50DSph (range: 1.00DSph to +26.50DSph). The mean cylinder of the IOL was 2.43DCyl, the median was 2.00DCyl (range: 1.00DCyl to 10.00DCyl).

**Results:**

The mean age of the patients was 70.20 years (range: 36 to 74 years) and 51,6% of the patients were men, 82% of eyes had associated pathology such as macular degeneration, amblyopia, glaucoma, epiretinal membrane, etc. Mean BCDVA before surgery was 0.50, the median was 0.60 (range: CF to 1.00). Mean preoperative refraction was -1,60 D Sph, median was -0,50DSph (range: -20.00DSph to +6.50DSph). Mean preoperative refractive cylinder was 1,5DCyl, the median was 1,5DCyl (range: 0DCyl to 6.0DCyl). Mean keratometry was 44.471D, the median was 44.3 (range: 41.06D to 50.32D). Mean corneal astigmatism was 1.88DCyl, median was 1.55DCyl (range: 0,5DCyl to 7.25DCyl). Postoperative mean UCDVA was 0.86, the median was 1.00 (range: 0.16 to 1.20) and the mean BCDVA was 1.00, the median was 1.00 (range 0.30 to 1.50). Mean postoperative refraction was +0.15DSph, median was 0 D Sph (range: -0.75DSph to +1.75DSph). The mean postoperative refractive astigmatism was 0.31DCyl, the median was 0,3DCyl (range: 0D to 1,75DCyl). Mean spherical equivalent was 0.003, median is 0 (range: -0.75 to 1,5).

**Conclusion:**

The residual postoperative astigmatism was very low in patients with corneal astigmatism who underwent cataract surgery and toric IOL (Zeiss AT TORBI 709 M/MP) implantation. Patients uncorrected visual acuity improved significantly and consequently also the quality of life.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ana Barbara

**Ime i prezime / First and Last Name:-Last**

Uršič

## **30. Adrian Lukenda**

### **Naslov:**

Crosslinking kolagena kod vrlo tankih rožnica – 10 godišnja iskustva

### **Autori:**

Adrian Lukenda, Željka Karaman Martinović, Šarolta Pinter

### **Ustanova:**

Očna poliklinika Opto centar, Zagreb

### **Cilj:**

prikazati učinkovitost i sigurnost zahvata crosslinking kolagena na rožnicama tanjim od 450 µm izvedenih u poliklinici Opto centar u razdoblju od 2009. do 2019. godine.

### **Bolesnici i metode:**

u retrospektivno istraživanje uključeni su bolesnici s keratokonusom s vrlo tankim rožnicama koji su lijечeni crosslinking zahvatom s uklonjenim epitelom prema Dresdenskom protokolu (30 minuta uz 3 mW/cm<sup>2</sup>) uz upotrebu različitih otopina riboflavina (hipoosmolarna, normoosmolarni riboflavin s dekstranom ili hidroksipropil metil celulozom). Bolesnici su podijeljeni u dvije skupine prema vrijednosti ma najmanje pahimetrije (< 400 µm i 400-450 µm) izmjereno na Scheimpflug Pentacam ili Allegro Oculyzer uređaju.

### **Rezultati:**

Analizirani su podaci o sigurnosti i učinkovitosti zahvata, uključujući nekorigiranu vidnu oštinu, najbolju vidnu oštinu korigiranu naočalama i vidnu oštinu korigiranu kontaktnim lećama, keratometriju, najtanju izmjerenu vrijednost pahimetrije prije i nakon zahvata, stražnju elevaciju na apeksu konusa, kao i komplikacije. Najkraće vrijeme praćenja bolesnika uključenih u istraživanje bilo je 12 mjeseci.

### **Zaključak:**

Crosslinking je siguran i učinkovit zahvat u zaustavljanju napredovanja keratokonusa kod rožnica tanjih od 450 µm. Najnižu vrijednost predoperativne pahimetrije kod koje je moguće provesti učinkovit zahvat još treba odrediti. Potrebno je smanjiti potrebu za liječenjem vrlo tankih rožnica ranjom dijagnozom i pravodobnim zahvatima.

### **Title:**

Collagen cross-linking in very thin corneas – 10 year experience

### **Authors:**

Adrian Lukenda, Željka Karaman Martinović, Šarolta Pinter

### **Institution:**

Opto Centar Eye Center, Zagreb

### **Aim:**

To assess the efficacy and safety of collagen crosslinking procedures performed on patients with corneas thinner than 450 µm in Opto Centar from 2009. until 2019.

**Patients and methods:**

Retrospective study of patients with very thin keratoconic corneas treated with crosslinking using the epi-off Dresden protocol (30 minutes with 3 mW/cm<sup>2</sup>) with different riboflavin solutions (hipoosmolar, n ormoosmolar riboflavin with dextran or with HPMC). Patients were divided in two groups according to the thinnest pachymetry (< 400 µm and 400 to 450 µm) measured by Scheimpflug Oculus Pentacam or Allegro Oculyzer device.

**Results:**

The safety and efficacy data, including uncorrected, best spectacle-corrected and best contact lens-corrected visual outcomes, keratometry, preoperative and postoperative thinnest pachymetry, posterior elevation at the cone apex, and complications were analyzed. The minimum follow-up was 12 months.

**Conclusion:**

Cross-linking is a safe and effective procedure to halt the progression of keratoconus in corneas thinner than 450 µm. The lowest preoperative pachymetry values for efficient cross-linking remains to be determined. It is necessary to further reduce the need for treating very thin corneas by earlier diagnosis and timely procedures.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Adrian

**Ime i prezime / First and Last Name:-Last**

Lukenda

## **31. Aleksej Medić**

### **Naslov:**

Ksenologni gel stent implantat, nova ab interno minimalno invazivna operacija glaukoma- klinički rezultati nakon 18 mjeseci

### **Autori:**

A. Medić, K. Čulina, T. Jukić

### **Ustanova:**

Poliklinika Medić Jukić

### **Cilj:**

Ispitati uspjehost snižavanja intraokularnog tlaka i sigurnosni profil implantacije xen gel stenta kod bolesnika sa glaukomom otvorenog kuta

### **Bolesnici i metode:**

28 bolesnika sa glaukomom otvorenog kuta na maksimalnoj antiglaukomskoj terapiji i/ili netoleranciji na 1 ili više lijekova podvrgnuti su operaciji ugradnje ksenolognog stent implantata. Klinički ishodi koji su se pratili su: vrijednosti intraokularnog tlaka prije i poslije zahvata, broj antiglaukomskih lijekova prije i poslije zahvata te intra i postoperativne komplikacije.

### **Rezultati:**

Srednja vrijednost IOT-a prije operacije bila je  $24.2 \pm 4.5$  mmHg. Srednja vrijednost lijekova prije operacije bila je  $2.6 \pm 0.9$ . 18 mjeseci nakon operacije srednja vrijednost IOT-a bila je  $15.2 \pm 2.1$ , a srednja vrijednost lijekova  $0.4 \pm 0.8$ .

### **Zaključak:**

Implantacija ksenolognog gel stenta statistički značajno snižava postoperativni IOT i broj antiglaukomskih lijekova uz minimalne intra i postoperativne komplikacije.

### **Title:**

Xen gel implantation, minimally invasive glaucoma surgery-clinical results after 18 months

### **Authors:**

A.Medic, K.Culina, T.Jukic

### **Institution:**

Eye clinic Medic Jukic

### **Aim:**

To evaluate the efficacy in intraocular pressure (IOP) reduction and safety of the Xen gel stent-minimally invasive glaucoma surgery device.

### **Patients and methods:**

28 patients with open-angle glaucoma underwent a XEN 45 Gel Stent implantation. Treatment outcomes analyzed included: IOP, medication use, intra and postoperative complications.

**Results:**

The mean preoperative IOP was  $24.2 \pm 4.5$  mmHg on  $2.6 \pm 0.9$  medication. After 18 months the mean postoperative IOP was  $15.2 \pm 2.1$  with a mean of  $0.4 \pm 0.8$  medication. There were no major intraoperative and postoperative complications during the 18 months of follow up period.

**Conclusion:**

This study demonstrated that the xen gel implant is statistically effective in reducing IOP and medications in glaucoma patients with a low rate of complications.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA GLAUKOM / Glaucoma section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Aleksej

**Ime i prezime / First and Last Name:-Last**

Medić

## **32. Haris Kujundžić**

### **Naslov:**

Radius-Maumanee-ov sindrom

### **Autori:**

\*dr Haris Kujundžić, \*\*prof. dr Miroslav Radunović

### **Ustanova:**

\*Klinika za očne bolesti, Klinički centar Crne Gore \*\* Medicinski fakultet Univerziteta Crne Gore

### **Cilj:**

Ispitati uzroke dilatiranih episkleralnih krvnih sudova

### **Bolesnici i metode:**

Prikaz slučaja dilatiranih episkleralnih krvnih sudova

### **Rezultati:**

Pacijent dobi 58. godina, pedijatar sa sjevera Crne Gore, se javio na pregled kod oftalmologa zbog jednostrano proširenih episkleralnih krvnih sudova prije dvije godine. Urađena je detaljna dijagnostika mogućih ozbiljnih stanja koja mogu izazvati povišenje pritiska u ovom krvnom spletu, ali nije potvrđen nijedan od njih. Redovno se kontroliše u kabinetu za glaukom.

### **Zaključak:**

Brojna stanja mogu biti povezana sa dilatiranim episkleralnim krvnim sudovima te je uputno uraditi adekvatne dijagnostičke procedure kako bi se utvrdio uzrok ovog stanja i sproveo adekvatan tretman pacijenta. Isključivanjem poznatih uzroka povišenog episkleralnog venskog pritiska, stanje se može nazvati idiopatsko ili Radius-Maumanee-ov sindrom. Važno je prtatiti i na vrijeme liječiti pacijente sa ovim sindromom jer su u većini slučajeva povezani sa glaukomom otvorenog ugla.

### **Title:**

Radius-Maumanee Syndroma

### **Authors:**

\*Dr. Haris Kujundžić \*\* prof. Miroslav Radunović

### **Institution:**

Eye Clinic, Clinical Center of Montenegro \*\* Medical School, University of Montenegro

### **Aim:**

Investigate conditions associated with dilated episcleral veins

### **Patients and methods:**

Dilated episcleral veins - case presentation

### **Results:**

58-y-

o patient, pediatrician from North of Montenegro, addressed to an ophthalmologist because of unilateral dilated episcleral veins, two years ago. All diagnostic procedures for serious possible conditions of elevated pressure in these blood vessels didn't revealed the cause. He has regular glaucoma follow-up.

**Conclusion:**

Lots od conditions could be associated with dilated episcleral veins. Adequate diganostic procedures should be performed in order to find the cause of elevated episcleral venous pressure and appropriate management. The condition is idiopathic if all known causes are excluded and named Radius-Maumanee syndroma. It should be keep on mind it is usually associted with open-angle glaucoma.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA ORBITU / Orbit section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Haris

**Ime i prezime / First and Last Name:-Last**

Kujundžić

### **33. Nenad Vukojević**

#### **Naslov:**

OCT morfologija uveitičkog makularnog edema i prognostički biomarkeri za vidnu oštrinu

#### **Autori:**

Vukojević Nenad, Jukić Tomislav, Štanfel Marija i Mandić Krešimir

#### **Ustanova:**

Klinika za očne bolesti Medicinskog fakulteta Sveučilišta u Zagrebu, KBC Zagreb

#### **Cilj:**

Cilj rada je istražiti morfologiju uveitičkog makularnog edema na prikazu SD optičke koherentne tomografije i karakteristike važne za prognozu vidne oštine.

#### **Bolesnici i metode:**

Deskriptivno presječno istraživanje provedeno je na pacijentima s uveitisom liječenim na Klinici za očne bolesti KBC Zagreb. SD-

OCT dijagnostikom analizirana je morfologija uveitičkog makularnog edema te njezin utjecaj na vidnu oštrinu.

#### **Rezultati:**

U našem istraživanju analizirana su 54 oka od 39 pacijenata s uveitisom i makularnim edemom. 20 (5 1.28%) pacijenata je imalo jednostrani, a 19 (48.72%) obostrani uveitis. Poznata etiologija uveitisa bila je kod 10 (25.24%) pacijenata. Makularni edem je klasificiran kao difuzni i cistoidni makularni edem (CME). Bilo je 11 (28.20%) pacijenata s prednjim, 16 (41.04%) s intermedijarnim, 1 (2.56%) sa stražnjim i 11 (28.20%) s panuveitisom. 12 (22.22%) očiju je imalo difuzni edem, kod 42 (77.78%) oka je bio CME, a od toga 5 s elementima epimakularne membrane (ERM), a 12 (22.22%) očiju sa seroznim odignućem makule (SMD).

#### **Zaključak:**

Cistoidni makularni edem je najčešći oblik uveitičkog makularnog edema i u značajnom postotku je komplikiran s seroznim odignućem makule koje se može dijagnosticirati samo na OCT prikazu.

#### **Title:**

OCT patterns of uveitic macular edema and prognostic biomarkers for visual acuity

#### **Authors:**

Vukojević Nenad, Jukić Tomislav, Štanfel Marija i Mandić Krešimir

#### **Institution:**

Department of Ophthalmology, School of Medicine University of Zagreb, UHC Zagreb

#### **Aim:**

The aim of the study was to investigate the patterns of uveitic macular edema using SD Optical Coherence Tomography as a diagnostic tool and characteristics important for the visual acuity prognosis.

#### **Patients and methods:**

A descriptive cross-sectional study was performed on patients with uveitis treated at the Department of Ophthalmology, University Hospital Zagreb. The morphology of uveitic macular edema was analyzed by SD-OCT diagnostic tool and its effect on visual acuity.

**Results:**

In our study, 54 of 39 patients with uveitis and macular edema were analyzed. 20 (51.28%) patients had unilateral involvement and 19 (48.72%) bilateral involvement. The known etiology of uveitis was in 10 (25.24%) patients. Patterns of macular edema were classified as a diffuse macular edema (DME) and cystoid macular edema (CME). There were 11 (28.20%) patients with anterior, 16 (41.04%) with intermediate, 1 (2.56%) with posterior and 11 (28.20%) patients with panuveitis. 12 (22.22%) eyes had a diffuse edema, 42 (77.78%) eyes had CME, of which 5 with epimacular membrane (ERM) elements and 12 (22.22%) eyes with serous macular detachment (SMD).

**Conclusion:**

Cystoid macular edema (CME) is the most common form of uveitic macular edema and in significant percentage is complicated with serous macular detachment (SMD) that can only be diagnosed by OCT technology.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA UVEA-u / Uvea section

Titula / Title:

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Nenad

**Ime i prezime / First and Last Name:-Last**

Vukojević

## **34. Dean Šarić**

### **Naslov:**

Crosslinking u kombinaciji s refraktivnom kirurgijom za pacijente sa keratokonusom

### **Autori:**

D.Šarić, D. Grgić, M. Belovari, Z. Mandić

### **Ustanova:**

Poliklinika Optical Express

### **Cilj:**

Usporediti rezultate vidne oštine nakon fotorefrakcijske keratektomije (PRK) kod očiju koje su prethodno bile podvrgnute cross-linkingu i očiju koje nisu imale prethodnih zahvata.

### **Bolesnici i metode:**

Pacijenti su podjeljeni u dvije grupe, grupa od 7 pacijenata (14 očiju) koje su prije refrakcijske kirurgije bile podvrgnute cross-linkingu za početni keratokonus (PRK&CXL grupa). PRK je učinjen najmanje 6 mjeseci iza cross-linkingu. Druga grupa od 25 pacijenata (50) očiju gdje je urađen samo PRK zahvat za miopski astigmatizam (PRK kontrolna grupa). Nekorigirana vidna oština uspoređena je 3,6 i 12 mjeseci iza zahvata.

### **Rezultati:**

Nije bilo značajne razlike u nekorigiranoj vidnoj oštini između grupa, podkorigiranih pacijenata je bilo relativno više u PRK&CXL grupi.

### **Zaključak:**

PRK je siguran zahvat za korekciju refrakcijske greške kod pacijenata sa početnim keratokonusom kod kojih je 6 mjeseci ranije učinjen cross-linking. Dalja istraživanja su potrebna da se utvrdi da li za takve zahvate treba mijenjati nomograme u odnosu na zahvate na očima kod kojih se radi samo o refrakcijskom zahvatu.

### **Title:**

Cross-linking combined with refractive surgery for keratoconus patients

### **Authors:**

D.Šarić, D. Grgić, M. Belovari, Z. Mandić

### **Institution:**

Optical Express Polyclinic

### **Aim:**

To determine the differences in the eyes undergoing refractive surgery after cross-linking (CXL) and virgin eyes.

### **Patients and methods:**

There were two groups of patients, one with 7 patients, 14 eyes treated with photorefractive keratectomy (PRK) after CXL for mild keratoconus (PRK&CXL group). PRK was performed at least 6 months after CXL. Second group with 25 patients, 50 eyes that underwent simple PRK for myopic astigmatism (PRK control group). Uncorrected visual acuity was compared 3, 6 and 12 months after surgery.

**Results:**

There were relatively more uncorrected patients in PRK&CXL group but overall results of uncorrected visual acuity were similar in both groups.

**Conclusion:**

PRK is safe procedure for mild keratoconus patients that underwent CXL procedure 6 months previous to refractive surgery. Further investigations should be performed to understand if the same protocols of refractive surgery should be used for crosslinked corneas as for virgin eyes.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Dean

**Ime i prezime / First and Last Name:-Last**

Šarić

## **35. Sandra Vokurka Topljak**

### **Naslov:**

Korekcija retrakcije gornjih vjeđa incobotulinom A kod bolesnika sa TAO

### **Autori:**

Sandra Vokurka Topljak, , Martina Galijot Delić , Sanja Perić, Jelena Juri Mandić

### **Ustanova:**

Očni odjel OB Bjelovar, Klinika za očne bolesti Medicinskog fakulteta Sveučilišta u Zagrebu KBC Z agreb,

### **Cilj:**

Ishodi liječenja retrakcije gornjih vjeđa kod bolesnika sa TAO incobotulinom tipa A putem dva različita aplikacijska pristupa.

### **Bolesnici i metode:**

Bolesnici sa TAO klasificirani po CAS-u, podijeljeni su u dvije skupine ovisno o aplikacijskom pristupu.

### **Rezultati:**

U tijeku je statistička obrada podataka

### **Zaključak:**

Prema preliminarnim podatcima oba aplikacijska pristupa incobotulinuma A sigurno i učinkovito mogu se koristiti u korekciji retrakcije gornjih vjeđa u bolesnika sa TAO. Ovisno o vremenskim intervalima u kojem su učinjena kontrolna mjerena i evaluacija terapijskog odgovora registrirane su prolazne nuspojave sa sličnom distribucijom u obje ispitivane skupine.

### **Title:**

Upper eyelid retraction treatment with incobotulin A in patients with TAO

### **Authors:**

Sandra Vokurka Topljak, , Martina Galijot Delić , Sanja Perić, Jelena Juri Mandić

### **Institution:**

Eye unit, GH Bjelovar, Department of ophthalmology Medical School Zagreb, Clinical Hospital Center Zagreb

### **Aim:**

Outcomes of upper eyelid retraction treatment with Incobotulinum Type A using two different application approaches in TAO patients..

### **Patients and methods:**

Patients with TAO-classified by CAS were divided into two groups depending on the application approach

**Results:**

Statistical data processing is in progress.

**Conclusion:**

According to preliminary data, both application approaches of incobotulin A can be safely and efficiently used for correction of upper eyelid retraction in patients with TAO. Depending on follow up intervals with control measurements and therapeutic response evaluation , transient side effects with similar distribution were reported in both groups.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA ORBITU / Orbit section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Sandra

**Ime i prezime / First and Last Name:-Last**

Vokurka Topljak

## **36. Dean Sarajčev**

### **Naslov:**

Treacher Collins sindrom: prikaz slučaja

### **Autori:**

Sarajčev D, Ložić B, Kujundžić Lovrić S, Lešin M, Bućan K

### **Ustanova:**

Klinika za očne bolesti KBC Split

### **Cilj:**

Prikazati slučaj dosad ne dijagnosticiranog Treacher Collins sindroma s pseudo kolobomima donjih vjeđa.

### **Bolesnici i metode:**

Osamnaestogodišnji pacijent dolazi na pregled zbog estetskih razloga. U djetinjstvu su mu operirane o bje uške. Kliničkim pregledom se utvrde pseudo kolobomi donjih vjeđa i nedostatak trepavica u medijalne dvije trećine. Pacijent se uputi genetičaru koji fenotipski zaključi da se radi o blažem obliku Treacher Collins sindroma. Naprave se CT snimci glave i 3D rekonstrukcija kostiju lica. Nakon završenih dijagnostičkih pretraga pacijent se tretira kirurški – ekscizijom ruba vjeđe, lateralnom kantopeksijom te vertikalnim proširenjem donjih vjeđa.

### **Rezultati:**

Rezultati kliničkih i dijagnostičkih ispitivanja pokazali su da se radi o blažem obliku Treacher Collins sindroma. Prikazuje se i metoda kirurškog liječenja pseudo koloboma vjeđa.

### **Zaključak:**

Sindrom Treacher Collins je rijedak sindrom koji može ostaviti manje i veće deformitete vjeđa. U slučaju manjih deformiteta vjeđa postoji mogućnost kirurške rekonstrukcije. U slučaju većih deformiteta povezanih s kostima lica potreban je multidisciplinarni pristup.

### **Title:**

Treacher Collins syndrome: A case report

### **Authors:**

Sarajčev D, Ložić B, Kujundžić Lovrić S, Lešin M, Bućan K

### **Institution:**

Department of Ophthalmology, University Hospital Center Split

### **Aim:**

To display a case of a heretofore undiagnosed Treacher Collins syndrome with pseudo colobomas of lower eyelids.

### **Patients and methods:**

Eighteen-year-old patient comes for a check-up regarding aesthetical reasons. He had both auricles operated during childhood. By a clinical examination pseudo colobomas of the lower eyelids and the lack of eyelashes in the medial two-thirds are identified. The patient is sent to a geneticist who phenotypically concludes that a milder form of the Treacher Collins syndrome is at stake. CT scans of the head are made as well as a 3D reconstruction of facial bones. After the diagnostic tests have been completed, the patient is treated surgically – by an excision of the eyelid edge, lateral canthopexy and vertical enlargement of the lower eyelids.

### **Results:**

The results of clinical and diagnostic tests have shown that this is a mild form of the Treacher Collins syndrome. A method of surgical treatment of the pseudo colobomas of the eyelids is also displayed.

### **Conclusion:**

The Treacher Collins syndrome is a rare syndrome that can leave minor and major eyelid deformities. In the case of minor eyelid deformities there is a possibility of surgical reconstruction. In case of major deformities associated with facial bones, a multidisciplinary approach is required.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

### **Ime i prezime / First and Last Name:-First**

Dean

### **Ime i prezime / First and Last Name:-Last**

Sarajčev

## **37. Mia Zorić Geber**

### **Naslov:**

Kirurško liječenje postoperativnih komplikacija glaukomskih drenažnih implantata

### **Autori:**

Zorić Geber M, Ivezović R, Lacmanović Lončar V, Parat K, Vatavuk Z

### **Ustanova:**

Klinika za očne bolesti KBC Sestre milosrdnice

### **Cilj:**

Glaukomski drenažni implantati učinkoviti su u liječenju povišenog očnog tlaka i očuvanju vida u kirurškom liječenju refraktornih glaukoma. Cilj studije je prikazati učinkovitost Glaukomskih drenažnih implantata i kirurško liječenje postoperativnih komplikacija.

### **Bolesnici i metode:**

Glaukomski drenažni implantati učinkoviti su u liječenju povišenog očnog tlaka i očuvanju vida u kirurškom liječenju refraktornih glaukoma. Cilj studije je prikazati učinkovitost Glaukomskih drenažnih implantata i kirurško liječenje postoperativnih komplikacija.

### **Rezultati:**

Glaukomski drenažni implantati učinkoviti su u liječenju povišenog očnog tlaka i očuvanju vida u kirurškom liječenju refraktornih glaukoma. Cilj studije je prikazati učinkovitost Glaukomskih drenažnih implantata i kirurško liječenje postoperativnih komplikacija.

### **Zaključak:**

Glaukomski drenažni implantati učinkoviti su u liječenju povišenog očnog tlaka i očuvanju vida u kirurškom liječenju refraktornih glaukoma. Cilj studije je prikazati učinkovitost Glaukomskih drenažnih implantata i kirurško liječenje postoperativnih komplikacija.

### **Title:**

Surgical Management of Glaucoma Drainage Devices Postoperative Complications

### **Authors:**

Zorić Geber M, Ivezović R, Lacmanović Lončar V, Parat K, Vatavuk Z

### **Institution:**

University Department of Ophthalmology University Hospital Center Sestre milosrdnice

### **Aim:**

Glaucoma drainage devices (GDDs) have been demonstrated to be very effective in lowering IOP and, thus, in preserving vision in management of refractory glaucomas. This study describes our experience with the GDDs and investigates the effectiveness and management of the postoperative complications in patients with refractory glaucoma.

Patients and methods:

This study describes our experience with the GDDs and investigates the effectiveness and management of the postoperative complications in patients with refractory glaucoma.

**Results:**

This study describes our experience with the GDDs and investigates the effectiveness and management of the postoperative complications in patients with refractory glaucoma.

**Conclusion:**

This study describes our experience with the GDDs and investigates the effectiveness and management of the postoperative complications in patients with refractory glaucoma.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA GLAUKOM / Glaucoma section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Mia

**Ime i prezime / First and Last Name:-Last**

Zorić Geber

## **38. Nikolina Zrakić**

### **Naslov:**

Liječenje recidivirajućih pterigija transplantacijom amnijske membrane i jednostavnog limbalnog epitelnog transplantanta (SLET)

### **Autori:**

Zrakić N., Ivezović R., Vladislavljević Ljubas M., Vatavuk Z.

### **Ustanova:**

Klinički bolnički centar "Sestre milosrdnice", Zagreb, Hrvatska

### **Cilj:**

U ovom istraživanju opisana je kirurška tehnika; transplantacija amnijske membrane (AMT) i jednostavnog limbalnog epitelnog transplantanta (SLET) u liječenju povratnih pterigija.

### **Bolesnici i metode:**

U istraživanje su bila uključena 3 bolesnika; dva sa recidivom pterigija i jedan sa pseudopterigijem, nizazalnom i temporalnom stranom. Sva tri bolesnika su tretirana novim postupkom AMT i SLET pomoći fibrinskog ljepila.

### **Rezultati:**

Nakon operativnog zahvata postoperativni tretman uključuje liječenje umjetnim suzama i topikalnim kortikosteroidima (deksametazon 0,5 %), svakih 6 sati do potpunog zacijeljivanja epitela. Sedam dana nakon operacije uklonjena je meka kontaktna leća.

### **Zaključak:**

Zaključili smo da je kombinacija transplantacije amnijske membrane, koja inhibira subkonjunktivalnu fibrozu, i limbalnog autografta, koji vraća limbalnu funkciju dobar kirurški postupak za liječenje bolesnika s povratnim pterigijem.

### **Title:**

Treating of recurrent pterygium by amniotic membrane transplantation and simple limbal epithelial transplantation (SLET)

### **Authors:**

Zrakić N., Ivezović R., Vladislavljević Ljubas M., Vatavuk Z.

### **Institution:**

Department of Ophthalmology, University Clinical Hospital Center „Sestre milosrdnice”, Zagreb, Croatia

### **Aim:**

In this study, surgical technique for amniotic membrane transplantation (AMT) with a simple limbal epithelial transplantation (SLET) is described in cases of treating recurrent pterygium.

**Patients and methods:**

This study included three patients; two patients were with recurrent pterygium and one was with pseu dopterygium, nasal and temporal side. All three were treated with procedure AMT and SLET using fi brin glue

**Results:**

After surgery, postoperative treatment includes artificial tears and topical steroid eye drops (dexameth ason 0,5%), every 6 hours until full epithelial healing. Soft bandage contact lens was removed after 7 days of surgery.

**Conclusion:**

We have found that the combination of an amniotic membrane transplantation, which inhibit subconjunctival fibrosis, and limbal autograft, which restore limbal function, is a good surgical procedure for treating patients with recurrent pterygium.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

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Nikolina

**Ime i prezime / First and Last Name:-Last**

Zrakić

## **39. Miro Kalauz**

### **Naslov:**

Fakoemulzifikacija i implantacija intraokularne leće kod pacijenta s nanoftalmusom

### **Autori:**

Kalauz M, Jukić T, Masnec S, Kuzman T, Škegro I, Jandroković S

### **Ustanova:**

Klinika za očne bolesti, Medicinskog fakulteta, Sveučilišta u Zagrebu, KBC Zagreb

### **Cilj:**

Prikazati postupak i rezultat fakoemulzifikacije s implantacijom intraokularne leće kod pacijenta s nanoftalmusom

### **Bolesnici i metode:**

x

### **Rezultati:**

x

### **Zaključak:**

Suha pars plana vitrektomija, fakoemulzifikacija i IOL implantacija kod pacijenata s nanoftalmusom je izazov za kirurge. Kratka aksijalna duljina i povišeni očni tlak su rizični faktori za nastanak komplikacija

### **Title:**

Phacoemulsification and intraocular lens implantation in nanophthalmos.

### **Authors:**

Kalauz M, Jukić T, Masnec S, Kuzman T, Škegro I, Jandroković S

### **Institution:**

Zagreb University Hospital Center Department of Ophthalmology

### **Aim:**

To evaluate the outcomes of phacoemulsification and intraocular lens (IOL) implantation in nanophthalmos

### **Patients and methods:**

x

### **Results:**

x

### **Conclusion:**

Dry Vitrectomy, Phacoemulsification and IOL implantation in microphthalmos/nanophthalmos was challenging but appears safer than previously reported. A shorter AL and abnormal IOP were significant risk factors for complications.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Doc.dr.sc.

**Specijalist / Specialist**

Ime i prezime / First and Last Name:-First

Miro

**Ime i prezime / First and Last Name:-Last**

Kalauz

## **40. Marija Štanfel**

### **Naslov:**

Ablacija retine i biometeorološka prognoza

### **Autori:**

Štanfel Marija, Opačić Dalibor, Mandić Krešimir, Jukić Tomislav, Vukojević Nenad

### **Ustanova:**

Klinički bolnički centar Zagreb

### **Cilj:**

Utvrđiti povezanost vremenskih prilika (temperatura, vlažnost, tlak zraka i sl.) i hidraciju organizma n a pojavnost ablacija retine.

### **Bolesnici i metode:**

Uključili smo konsekutivne pacijente s primarnom regmatogenom ablacijom retine koji su liječeni u n ašoj ustanovi, mjerili parametre hidriranosti organizma i meteorološke prilike u vrijeme pojave simpto ma.

### **Rezultati:**

Podaci su u obradi.

### **Zaključak:**

Podaci su u obradi.

### **Title:**

Primary rhegmatogenous retinal detachment and biometeorological prognosis

### **Authors:**

Štanfel Marija, Opačić Dalibor, Mandić Krešimir, Jukić Tomislav, Vukojević Nenad

### **Institution:**

University hospital center Zagreb

### **Aim:**

To determine relation between meteorological conditions and incidence of primary rhegmatogenous r etinal detachment.

### **Patients and methods:**

Consecutive patients treated in our clinic for primary rhegmatogenous retinal detachment considering parameters of systemic hydration and meteorological conditions in time of beginning of symptoms.

### **Results:**

We are processing data at the moment.

### **Conclusion:**

We are processing data at the moment.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.

Specijalist / Specialist

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Marija

**Ime i prezime / First and Last Name:-Last**

Štanfel

## **41. Marin Radmilović**

### **Naslov:**

Automatizirana detekcija i kvantifikacija intraretinalnih, subretinalnih i sub-RPE eksudata na slikama optičke koherentne tomografije u senilnoj makularnoj degeneraciji

### **Autori:**

Marin Radmilović, Aida Kasumović, Martina Melinščak, Sven Lončarić, Zoran Vatavuk

### **Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska; Fakultet elektr otehnike i računarstva, Zagreb, Hrvatska

### **Cilj:**

Prisutnost i količina intraretinalnih, subretinalnih i sub-RPE eksudata na slikama optičke koherentne tomografije (OCT) ključna je u donošenju odluka o liječ enju osoba sa senilnom makularnom degeneracijom i drugim eksudativnim makulopatijama. Osim što je navedena procjena ovisna o iskustvu liječnika i zahtjeva određeni utrošak vremena, trenutnim ko mercijalnim OCT algoritmima nije moguće precizno kvantificirati navedene promjene. Automatizacij a analize omogućila bi bržu i objektivniju detekciju te precizniju kvantifikaciju eksudata, time olakšav ajući donošenje odluka i praćenje tijeka bolesti. Cilj je ovog istraživanja procjena metode strojnog uče nja u automatiziranoj detekciji i kvantifikaciji intraretinalnih, subretinalnih i sub-RPE eksudata kod OCT slika osoba sa senilnom makularnom degeneracijom.

### **Bolesnici i metode:**

Volumni skenovi makularnog područja 23 oka s eksudativnom makularnom degeneracijom snimljeni su korištenjem SD OCT uređaja (Cirrus HD-OCT 500, Carl Zeiss Meditec AG, Jena). Sveukupno 1270 B-skenova iz navedena 23 makularna volumena ručno su označena u programu za obradu slika (GIMP). Označavanje je proveo jedan stručnjak, a označavani su: 1) unutarnja limitirajuća membrana (ILM), retinalni pigmentni epitel (RPE) i Bruchova membrana (BM), kao slojevi važni za precizno lokaliziranje eksudata i izračun debljine mrežnice, te 2) intraretinalni, subretinalni i sub-RPE eksudati. Označeni skenovi korišteni su za uvježbavanje algoritma strojnog učenja. Validacija algoritma provedena je "leave one out" metodom i izračunavanjem Dice indeksa sličnosti, a greška algoritma uspoređena sa ljudskom greškom izračunatom na 75 B-skenova ponovno označenih od strane istog i još jednog stručnjaka.

### **Rezultati:**

Predloženi algoritam pokazao je prosječni Dice indeks sličnosti iznad 75% za intraretinalne i subretinalne eksudate, a iznad 85% za sub-RPE eksudate. Prema linearnoj regresiji, sposobnost detekcije specifičnih eksudata korelirala je 90-95% između automatizirane i stručne ljudske anotacije.

### **Zaključak:**

Prosječni Dice indeks sličnosti iznad 75% za sve tri vrste eksudata ukazuje na dobre mogućnosti preduženog algoritma strojnog učenja u detekciji i kvantifikaciji intraretinalnih, subretinalnih i sub-RPE eksudata u OCT slikama očiju sa senilnom makularnom degeneracijom.

**Title:**

Automated Detection and Quantification of Intraretinal, Subretinal, and Sub-RPE Exudates in Age-Related Macular Degeneration Optical Coherence Tomography Images

**Authors:**

Marin Radmilović, Aida Kasumović, Martina Melinščak, Sven Lončarić, Zoran Vatavuk

**Institution:**

Department of Ophthalmology, "Sestre milosrdnice" University Hospital Center, Zagreb, Croatia; Faculty of Electrical Engineering and Computing, Zagreb, Croatia

**Aim:**

The presence and quantity of intraretinal, subretinal, and sub-retinal-pigment-epithelium (RPE) exudates in optical coherence tomography (OCT) scans guides treatment decisions in patients with age-related macular degeneration and other exudative maculopathies. Aside from being grader dependent and time consuming, the evaluation of OCT scans for these exudates in routine clinical practice lacks precise quantification, as commercial OCT algorithms do not detect them. An automated process promises to offer faster and more objective detection and quantification of these changes, allowing for a better workflow and follow-up. The objective of this study is to investigate the applicability of a machine learning method for automatic detection and quantification of intraretinal, subretinal, and sub-RPE exudates from a database of OCT images with age-related macular degeneration.

**Patients and methods:**

Spectral-domain OCT macular volumes of 23 eyes with exudative age related macular degeneration were collected on a Cirrus HD-OCT 500 platform (Carl Zeiss Meditec AG, Jena). Raw images were extracted and 1270 selected B-scans were manually annotated in an open-source image manipulation program (GIMP) by an expert grader. The annotation involved: 1) tracing inner limiting membrane (ILM), retinal pigment epithelium (RPE) and Bruch's membrane (BM) as layers relevant for precise localization of exudates and for retinal thickness measurement, and 2) tracing intraretinal, subretinal, and sub-RPE exudates. A subset of 75 B-scans was reannotated by the same expert grader and also annotated by a second expert grader to calculate the intraobserver and interobserver errors. The 1270 annotated scans served as a template for a machine learning algorithm. The algorithm was evaluated using a leave-one-out volume validation and Dice similarity index calculation, and its error was compared against the intraobserver and interobserver errors.

**Results:**

The proposed algorithm achieved average Dice similarity indices above 75% for intraretinal and subretinal exudates, and above 85% for sub-RPE exudates. The ability of detecting specific exudates correlated 90-95% between automated and expert manual annotations using linear regression analysis.

**Conclusion:**

The average Dice similarity indices above 75% for all three types of exudates indicate that the proposed method can be used for effective automatic detection and calculation of intraretinal, subretinal, and sub-RPE exudates in OCT scans of eyes with age-related macular degeneration.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Marin

**Ime i prezime / First and Last Name:-Last**

Radmilović

## **42. Dean Šarić**

### **Naslov:**

Cross-linking za keratokonus: naše 15 godišnje iskustvo

### **Autori:**

D.Šarić, S.Ramić, B. Kuzmanović-Elabjer, M. Bušić

### **Ustanova:**

Očna klinika KB"Sveti Duh"

### **Cilj:**

Evaluirati dugoročni učinak cross-linkinga rožničnog kolagena kod pacijenata sa progresivnim keratokonusom.

### **Bolesnici i metode:**

Ova studija obrađuje 134 oka od 134 pacijenata sa progresivnim keratokonusom između 2014. i 2018. Godine. Sve oči tretirane su metodom cross-linking (Drezdenski protokol). Klasični Drezdenski protokol učinjen je u svim slučajevima. Praćena je najbolja nekorigirana i korigirana vidna oštrina, maksimalna i srednja keratometrijska vrijednost, te debljina rožnice 1, 2, 5 i deset godina iza zahvata. Uspoređene su vrijednosti nakon deset godina kao i trend promjena tijekom deset godišnjeg praćenja.

### **Rezultati:**

Srednja vrijednost nekorigirane i korigirane vidne oštchine poboljšala se kroz period od 5 godina. Srednja maksimalna i srednja keratometrijska vrijednost značajno su se smanjile. Nakon dvije godine od zahvata najbolja korigirana vidna oštrina se polako stabilizirala, dok je rožnična elevacija nastavila padati do pete godine iza zahvata.

### **Zaključak:**

Bazirano na našim 15 godišnjim rezultatima, tretman progresivnog keratokonusa cross-linking metodom zaustavlja progresiju bolesti, metoda je sigurna uz minimum komplikacija i može eliminirati potrebu za keratoplastikom kod pacijenata sa keratokonusom.

### **Title:**

Corneal collagen cross-linking for keratoconus: our 15 years experience

### **Authors:**

D.Šarić, S.Ramić, B. Kuzmanović-Elabjer, M. Bušić

### **Institution:**

Eye Clinic KB"Sveti Duh"

### **Aim:**

To evaluate the long-term results of corneal collagen cross-linking (CXL) in patients with progressive keratoconus.

### **Patients and methods:**

This study was conducted on 134 eyes of 134 patients with progressive keratoconus between 2004 and 2018. All eyes were treated with standard crosslinking (Dresden protocol). Patients were tested for best-corrected visual acuity (BCVA), uncorrected visual acuity (UCVA) and Scheimpflug imaging from which were extracted maximum keratometry reading (max-K), average of minimum and maximum keratometry readings (mean-K), central corneal thickness (CCT) at 1, 2, 5, and 10 years after CXL. We studied results at 10 years after CXL as well as the trend of changes over the 10-year period.

### **Results:**

Mean UCVA and BCVA showed improvement over 5 years period. Mean max-K and mean-K decreased significantly over 5 years. The CCT first decreased and later increased. After the two years BCVA slowly stabilized, whereas elevation readings continued to decrease up to 5 years after CXL.

### **Conclusion:**

Based on our 15-year results, treatment of progressive keratoconus with CXL can stop disease progression without raising any concern for safety, with minimum complications and can eliminate the need for keratoplasty.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJAU ZA KONTAKTOLOGIJU / Contactology section

Titula / Title:

Dr.

Specijalist / Specialist

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Dean

**Ime i prezime / First and Last Name:-Last**

Šarić

## **43. Damir Bosnar**

### **Naslov:**

Transplantacija isječka lećne kapsule u liječenju bolesnice s refraktornom makularnom rupturom

### **Autori:**

Bosnar Damir, Šarić Borna, Bušić Mladen, Kuzmanović Elabjer Biljana, Ramić Senad

### **Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Medicinski fakultet Sveučilišta Josipa Jurja Strossmayera u Osijeku

### **Cilj:**

prikazati tehniku transplantacije isječka lećne kapsule u liječenju bolesnice s refraktornom makularnom rupturom

### **Bolesnici i metode:**

Prikaz slučaja: Bolesnica u dobi od 70 godinajavla se zbog progresivnog gubitka vidi uslijed razvoja maturne mrene kojoj je prethodila pars plana vitrektomija istoga oka učinjena zbog makularne rupture u drugoj ustanovi šest godina ranije. Nakon uspješne operacije mrene lijevog oka najbolje korigiran a vidna oštrina bila je 0,08 na Snellenovoj tablici. Kliničkim pregledom dijagnosticirana je makularna ruptura pune debljine retine četvrto stupnja, što je potvrđeno spektralnom optičkom koherentnom tomografijom. Nađene su i promjene podlježećeg retinalnog pigmentnog epitela. Učinjena je pars plana vitrektomija s transplantacijom isječka dobivenog stražnjom kapsuloreksom. Ova metoda je u dostupnoj literaturi opisana kao uspješnija u odnosu na klasične metode operativnog liječenja refraktornih makularnih ruptura

### **Rezultati:**

Mjesec dana nakon operacije makularna ruptura lijevog oka je zatvorena, a najbolje korigirana vidna oštrina iznosila je 0,15. Status makule i vidna funkcija stabilni su tijekom deset mjeseci praćenja.

### **Zaključak:**

U izboru metode kirurškog liječenja refraktorne makularne rupture treba misliti na tehniku transplantacije isječka lećne kapsule. U evaluaciji učinkovitosti i sigurnosti opisane metode nužni su veći broj ispitnika i dulje vrijeme praćenja.

### **Title:**

Lens capsular flap transplantation in the management of refractory macular hole

### **Authors:**

Bosnar Damir, Šarić Borna, Bušić Mladen, Kuzmanović Elabjer Biljana, Ramić Senad

### **Institution:**

University Eye Clinic, University Hospital „Sveti Duh“, Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek

### **Aim:**

To present lens capsular flap transplantation in the patient with refractory macular hole

**Patients and methods:**

Case report: A 70-year-old female presented with progressive visual loss of the left eye. She underwent pars plana vitrectomy for the macular hole of that eye in another institution six years ago. On presentation, mature cataract of the left eye was diagnosed with best-corrected visual acuity of 0.08 on Snellen chart. An uneventful cataract surgery ensued, enabling visualization of the posterior segment of the eye. Spectral domain optical coherence tomography confirmed stage 4 macular hole with multiple changes of the underlying retinal pigment epithelium. Pars plana vitrectomy was combined with flap harvested from the intact posterior lens capsule transplantation. According to the literature the procedure had higher success rate than classic methods for refractory macular hole surgery.

**Results:**

One month after surgery macular hole of the left eye was closed. Best-corrected visual acuity improved to 0.15. Retinal finding and visual function remained stable for ten months of follow-up.

**Conclusion:**

Lens capsular flap transplantation should be considered for the treatment of refractory macular hole. Larger case series and longer follow-up are needed for efficacy and safety evaluation of the procedure.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Damir

**Ime i prezime / First and Last Name:-Last**

Bosnar

## **44. Goran Marić**

### **Naslov:**

Gubitak endotelnih stanica rožnice nakon fakoemulzifikacije- trogodišnje praćenje

### **Autori:**

Marić G, Petric Vicković I, Lacmanović Lončar V, Iveković R, Vatavuk Z

### **Ustanova:**

Klinika za očne bolesti, KBC Sestre milosrdnice, Zagreb

### **Cilj:**

ustanoviti gubitak endotelnih stanica rožnice nakon operacije katarakte fakoemulzifikacijom.

### **Bolesnici i metode:**

U ovu prospективnu studiju uključeno je ukupno 35 očiju od 35 pacijenata. Učinjena je operacija katarakte fakoemulzifikacijom na istom aparatru od strane 3 različita očna kirurga. Svim pacijentima učinjeno je snimanje endotela rožnice spekularnim mikroskopom Tomey EM 4000 preoperativno, 1 mjesec poslije operacije te 3 godine poslije operacije.

### **Rezultati:**

Prosječna gustoća endotelnih stanica iznosila je 2456,34 stanice po mm<sup>2</sup> preoperativno, 1989,85 stanica po mm<sup>2</sup> jedan mjesec poslije operacije, te 1913,80 stanica po mm<sup>2</sup> tri godine poslije operacije. Gubitak endotelnih stanica jedan mjesec poslije operacije iznosio je prosječno 18,99%, a tri godine poslije operacije 22,08%.

### **Zaključak:**

Nakon značajnog jednokratnog poslijeoperativnog gubitka ukupnog broja endotelnih stanica rožnice, daljnji trend pada iznosio je 1,03% godišnje.

### **Title:**

CORNEAL ENDOTHELIAL CELL LOSS AFTER PHACOEMULSIFICATION- 3 YEARS FOLLOW UP

### **Authors:**

Marić G, Petric Vicković I, Lacmanović Lončar V, Iveković R, Vatavuk Z

### **Institution:**

Clinical department of ophthalmology, Sestre milosrdnice University Hospital Center, Zagreb

### **Aim:**

to evaluate corneal endothelial cell loss after phacoemulsification cataract surgery.

### **Patients and methods:**

In this prospective study 35 eyes of 35 patients were included. Phacoemulsification cataract surgery was done by three different eye surgeons using the same PHACO machine. All patients were measured

using specular microscope Tomey EM 4000 at three time points: preoperatively, 1 month after the surgery and three years after the surgery.

**Results:**

Average endothelial cell density was 2456.34 cells/mm<sup>2</sup> preoperatively, 1989,85 cells/mm<sup>2</sup> one month after the surgery and 1913,80 cells/mm<sup>2</sup> three years after the surgery.

Corneal endothelial cell loss was 18.99% one month after the surgery and 22.08% three years after the surgery.

**Conclusion:**

After significant short-term cell loss following phacoemulsification, further cell loss was only 1.03% per year.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Goran

**Ime i prezime / First and Last Name:-Last**

Marić

## **45. Marija Matić**

### **Naslov:**

Oblik i opseg oštećenja vidnog polja u bolesnika s multiplom sklerozom.

### **Autori:**

Matić M, Bešlić I, Vidović T, Vojvodić L, Vukojević N

### **Ustanova:**

KBC Zagreb, Klinika za očne bolesti Medicinskog fakulteta u Zagrebu

### **Cilj:**

Cilj studije je usporedba rezultata Octopus 900 perimetrije u bolesnika s multiplom sklerozom.

### **Bolesnici i metode:**

Ispitanici su bolesnici s multiplom sklerozom podjeljeni u dvije skupine. Prvu skupinu čine bolesnici koji su liječeni pulsnom kortikosteroidnom terapijom zbog akutnog optičkog neuritisa, te su na kontrolnom pregledu imali vidnu oštrinu 1.0. Drugu skupinu čine ispitanici s vidnom oštrinom 1.0 koji nisu imali akutni optički neuritis. Vidna oštrina je određena pomoću Snellenove tablice, dok su defekti u vidnom polju klasificirani prema Tubingen klasifikaciji.

### **Rezultati:**

U skupini ispitanika s akutnim optičkim neuritisom je na kontrolnom pregledu nađeno oštećenje vidnog polja iako je vidna oštrina dosegnula 1.0 prema Snellenu. U većine ispitanika su nađena oštećenja u perifernoj zoni, odnosno u zoni  $15^{\circ}$ -  $20^{\circ}$  ekscentriteta. I u skupini ispitanika koji nisu imali akutni optički neuritis nađena su oštećenja vidnog polja, ali u manjem opsegu.

### **Zaključak:**

Kod ispitanika s akutnim optičkim neuritisom, iako se vidna oštrina oporavila na 1.0 prema Snellenu, zaostaju oštećenja vidnog polja. S druge strane, oštećenja vidnog polja mogu biti nađena i u onih bolesnika koji nikada nisu imali akutni optički neuritis.

### **Title:**

Visual field defects in patients with multiple sclerosis.

### **Authors:**

Matić M, Bešlić I, Vidović T, Vojvodić L, Vukojević N

### **Institution:**

University Hospital Centre Zagreb, Department of ophthalmology

### **Aim:**

The aim of this study was to compare visual field defects assessed by Octopus 900 perimetry in patients with multiple sclerosis.

### **Patients and methods:**

The subjects were patients with multiple sclerosis, divided into two groups. The first group is comprised of patients with acute optic neuritis that were treated with pulse corticosteroid therapy, with a visual acuity of 1.0 measured on control testing. The second group is comprised of patients with a visual acuity of 1.0 without acute optic neuritis. Visual acuity was measured by Snellen chart and visual field defects were classified by Tübingen classification

**Results:**

All subjects with acute optic neuritis had visual field defects on control testing, even though recovered visual acuity was 1.0. In most subjects, visual field defects were peripheral, specifically in 15°- 20° eccentricity. Visual field defects were also found in patients without previous acute optic neuritis, though with a lesser extent of deficit.

**Conclusion:**

Persistent visual field defects can be found in patients after acute optic neuritis, although the recovered visual acuity was 1.0. Visual field defects can also be found in patients without previous acute optic neuritis.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Marija

**Ime i prezime / First and Last Name:-Last**

Matić

## **46. Martina Galiot Delić**

### **Naslov:**

Debljina makule i žilnice kod pacijenata s anamnezom retinopatije nedonoščadi

### **Autori:**

Martina Galiot Delić, Sanja Perić, Nenad Vukojević, Zlatko Juratovac, Marija Barišić-Kutija, Hrvoje Omazić

### **Ustanova:**

Klinika za očne bolesti, Medicinski fakultet Sveučilišta u Zagrebu, Klinički bolnički centar Zagreb

### **Cilj:**

Procjena debljine makule i žilnice kod pacijenata s anamnezom retinopatije nedonoščadi te usporedba rezultata s zdravom kontrolnom skupinom koristeći optičku koherentnu tomografiju pojačane dubine snimanja (EDI-OCT) Heidelberg Spectralis.

### **Bolesnici i metode:**

20 djece u dobi 6-12 godina s anamnezom retinopatije nedonoščadi (stadij II-III) pregledano je uz pomoć Heidelberg Spectralis OCT-a pojačane dubine snimanja (EDI-OCT) te su rezultati debljine makule i žilnice uspoređeni s zdravom kontrolnom skupinom, 20 djece r ođenih na termin. Debljina makule i žilnice je mjerena nezavisno od dva ispitivača subfoveolarno te 1500 i 3000 µm nazalno i temporalno koristeći EDI-OCT

### **Rezultati:**

U tijeku je statistička obrada dobivenih podataka

### **Zaključak:**

Ranije publicirane studije ukazuju na moguću ulogu žilnice u patogenezi retinopatije nedonoščadi te je primjećena promjena u debljini žilnice u području makule kod pacijenata s anamnezom retinopatije nedonoščadi.

### **Title:**

Macular and choroidal thickness in patients with history of retinopathy of prematurity

### **Authors:**

Martina Galiot Delić, Sanja Perić, Nenad Vukojević, Zlatko Juratovac, Marija Barišić-Kutija, Hrvoje Omazić

### **Institution:**

Clinical Hospital Zagreb, Department of ophthalmology

### **Aim:**

To evaluate macular and choroidal thickness in patients with regressed retinopathy of prematurity and to compare the results with healthy controls using Heidelberg Spectralis enhanced depth imaging optical coherence tomography (EDI-OCT)

### **Patients and methods:**

20 children age 6-12 with history of retinopathy of prematurity (stage II-III) were examined using Heidelberg Spectralis enhanced depth imaging OCT (EDI-OCT) and results of macular and choroidal thickness were compared with healthy controls of 20 full term patients. Macular and choroidal thickness was measured by two observers independently subfoveally and at 1500 and 3000 µm nasally and temporally using EDI-OCT.

**Results:**

Statistical data analysis in evaluation

**Conclusion:**

Recent studies implicated choroidal involvement in the pathogenesis of retinopathy of prematurity and showed changes in thickness of macular choroid in patients with history of prematurity.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Martina

**Ime i prezime / First and Last Name:-Last**

Galiot Delić

## **47. Marija Barišić Kutija**

### **Naslov:**

Ishodi uveitisa u sklopu juvenilnog idiopatskog artritisa u eri moderne imunomodulatorne terapije

### **Autori:**

Marija Barišić Kutija, Nenad Vukojević, Sanja Perić, Zlatko Juratovac, Martina Galiot Delić

### **Ustanova:**

Klinički bolnički centar Zagreb, Klinika za očne bolesti

### **Cilj:**

Juvenilni idiopatski artritis (JIA) je najčešća reumatološka bolest djeće dobi, a uveitis u sklopu JIA (JIA-U) je najčešća i najteža izvanzglobna manifestacija JIA. JIA-U je glavni uzrok oštećenja vida pa čak i sljepoće u dječjoj dobi. Cilj ovog istraživanja je ispitati da li moderna imunomodulatorna terapija (IMT) može voditi prema poboljšanju prognoze JIA-U.

### **Bolesnici i metode:**

Uključeno je ukupno 38 djece (32 djevojčice) s JIA, koji su imali JIA-U i primali IMT. Od 38 djece, bilo je 69 uveitisom zahvaćenih očiju (bolest je obostrana u 31 a jednos strana u 7 djece). Sva djeca u ovoj studiji praćena su tijekom najmanje 19 tjedana nakon prvog pregleda na Klinici (najkraće vrijeme opservacije), najdulje praćenje iznosilo je 381 tjedan (jedno dijete), a medijan 209 tjedana. Evaluirana je moguća združenost između sistemске i lokalne terapije s nalazom katarakte i ostalih komplikacija JIA-U te oštećenja vidne oštine.

### **Rezultati:**

U vrijeme prvog pregleda na Klinici, 50% djece već je imalo komplikacije uveitisa. Udio očiju s bilo kojom ili pojedinim specifičnim komplikacijama, posebice s kataraktom, povećavao se tijekom promatranih razdoblja. Činjenica korištenja bioloških lijekova nezavisno je združena s nižim izgledima za analaz katarakte. Na kraju praćenja, do poboljšanja vidne oštine došlo je kod 45% očiju. Unatoč tome, u 28,3% očiju vidna oštrina je bila 0.1-0.3 logMAR; 7,54% očiju  $\geq 0.4$  logMAR, od njih 3,77%  $\geq 1.0$  logMAR.

### **Zaključak:**

Unatoč evidentnim poboljšanjima u izboru opcija liječenja, u značajnog broja bolesnika s JIA-U prisutne su komplikacije u dugoročnom praćenju. Prema tome, JIA-U je i dalje povezana s visokim rizikom za kasne sekvele i oštećenje vidne oštine, funkcionalna i strukturna oštećenja oka.

### **Title:**

Prognosis of juvenile idiopathic arthritis associated uveitis in the era of modern immunomodulatory treatment

### **Authors:**

Marija Barišić Kutija, Nenad Vukojević, Sanja Perić, Zlatko Juratovac, Martina Galiot Delić

### **Institution:**

University Hospital Centre Zagreb, Department of Ophthalmology

**Aim:**

Juvenile idiopathic arthritis (JIA) is the most common rheumatic disease of childhood and juvenile idiopathic arthritis associated uveitis (JIA-U) is its most frequent and most devastating extraarticular manifestation. JIA-U is the main cause of vision loss and even blindness in childhood. It is hypothesised, that modern systemic immunomodulatory treatment (IMT) use can lead toward improvement of JIA-U prognosis.

**Patients and methods:**

We included 38 JIA patients, who had JIA-U and were receiving systemic immunomodulatory therapy. Among them, there were 69 eyes with JIA-U (bilateral JIA-U in 31 and unilateral in 7 children). Patients were followed due to the JIA-U from at least 19 weeks up to 381 weeks, median 209 weeks. Association among systemic and local therapy with presence of cataract, JIA-U complications in general and best corrected visual acuity (BCVA) was evaluated.

**Results:**

At the time of the first ophthalmologic examination, 50% of our patients already had complications of uveitis. The frequency of eyes with complications, particularly with cataracts, increased during the observed period. The fact of using biological therapy was independently associated with a lower incidence for cataract development. At the end of follow-up, improvement of BCVA was present in 45% eyes. Nevertheless, there were 28,3% eyes with BCVA 0.1-0.3 logMAR; 7,54% eyes with BCVA  $\geq 0.4$  logMAR, among them 3,77% with BCVA  $\geq 1.0$  logMAR.

**Conclusion:**

Despite evident improvements in treatment options, significant amount of JIA-U patients still have complications in long-term follow-up. Therefore, JIA-U is still associated with high risk of late sequelae and visual acuity loss, functionally and structurally eye damage.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

Titula / Title:

Dr.

Specijalist / Specialist

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Marija

**Ime i prezime / First and Last Name:-Last**

Barišić Kutija

## **48. Mario Bradvica**

### **Naslov:**

Novi lijekovi u tretmanu retinalnih bolesti

### **Autori:**

Mario Bradvica, Tvrta Benašić, Maja Vinković, Andrijana Kopić

### **Ustanova:**

Klinički bolnički centar Osijek, Klinika za očne bolesti

### **Cilj:**

Prezentirati trenutno stanje razvoja novih lijekova u području bolesti retine i vidnog živca

### **Bolesnici i metode:**

Pregled razvoja novih lijekova sa mrežnih stranica clinical trials.gov, tesa stranica koje uređuju pojedine farmaceutske kompanije koje razvijaju nove lijekove kao i informacije iz osobnog iskustva

### **Rezultati:**

Prikazan je pregled i stupanj razvoja medikamenata za pretežno vlažnu i suhu makularnu degeneraciju kao i medikamenata za liječenje dijabetičke makulopatije, kao i razvoj medikamenata za neke rijetke retinalne bolesti

### **Zaključak:**

Čitava lepeza novih preparata je na visokom stupnju razvoja i u skoroj budućnosti možemo očekivati poboljšanje u mogućnostima liječenja mnogih bolesnih stanja retine i vidnog živca.

### **Title:**

New medications in treatment of retinal diseases

### **Authors:**

Mario Bradvica, Tvrta Benašić, Maja Vinković, Andrijana Kopić

### **Institution:**

University Hospital Osijek, Ophthalmology Clinic

### **Aim:**

Present the current state of development of new medicines in the area of retinal and visual nerve diseases

### **Patients and methods:**

An overview of the development of new medicines from the online clinical trials.gov websites, the tense pages that regulate individual pharmaceutical companies that develop new medicines as well as information from personal experience

### **Results:**

An overview and degree of drug development for predominantly wet and dry macular degeneration as well as medicaments for the treatment of diabetic maculopathy, and for some rare retinal diseases

**Conclusion:**

The whole range of new preparations is at a high level of development and in the near future we can expect improvement in the possibilities of treating many diseased conditions of the retina and the optic nerve.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Mario

**Ime i prezime / First and Last Name:-Last**

Bradvica

## **49. Josip Knežević**

### **Naslov:**

Poremećaji ruba vjeđe, njihove reperkusije na periokularno područje i površinu oka te postupanje s njima od strane oftalmologa u Hrvatskoj

### **Autori:**

Knežević J.; Ivezović R.

### **Ustanova:**

Klinički bolnički centar Zagreb; Klinički bolnički centar Sestre milosrdnice

### **Cilj:**

Definirati karakteristike upalnih poremećaja ruba vjeđe, njihovu dinamiku pojavnosti tijekom općeg oftalmološkog pregleda. Prikazati povezanost između patologije vjeđe i patološkog zbivanja na površini oka.

### **Bolesnici i metode:**

U studiju je bilo uključeno 200 pacijenata, oba spola, starijih od 18 g. Razlozi njihovog dolaska na oftalmološki pregled su mogli biti razni: praćenje kroničnih bolesti, akutne tegobe, pregled za operativni zahvat, praćenje po operativnom zahvatu. Sve pretrage rađene u ovoj studiji su pratile preporuke „International TFOS Workshop on Meibomian Gland Dysfunction“. Prikupljali smo sljedeće podatke: godina rođenja, spol, očni simptomi, trenutačna lokalna oftalmološka terapija koju koriste. Izvršili smo pregled dermatološkog aspekta kože lica, vjeđe, ruba vjeđe te očne površine. Ispunjavan je upitnik o utjecaju poremećaja ruba vjeđe na svakodnevni život kao i evidencija preporuka o liječenju navedeni h poremećaja ruba vjeđe.

### **Rezultati:**

-

### **Zaključak:**

U poremećaje ruba vjeđe spadaju benigne, samogoraničavajuće, ali i ozbiljne patologije kao što su: infekcije, tumori ili strukturalni poremećaji. Iako većina poremećaja nisu ni životno ni vidno ugrožavajući, imaju značajan utjecaj na smanjenje kvalitete života. Prisustvo upale i infekcije značajno utječe na sigurnost operativnog zahvata.

Poremećaji ruba vjeđe su česti u populaciji, a zbog njihove suptilne manifestacije se mogu lako previdjeti prilikom oftalmološkog pregleda i proći ne dijagnosticirano.

### **Title:**

Management of eyelid disorders by ophthalmologists in Croatia

### **Authors:**

Knežević J.; Ivezović R.

### **Institution:**

University Hospital Centre Zagreb; University Hospital Centre Sestre Milosrdnice

### **Aim:**

To determine the incidence and characteristics of eyelid inflammatory disorders during general ophthalmological consultations and to demonstrate association between palpebral pathologies and ocular surface pathologies.

#### **Patients and methods:**

A total of 200 patients were enrolled in this survey. Inclusion criteria were outpatients of either sex who were attended to the ophthalmological consultation for any reasons: regular check-up of chronic disease, acute symptoms, or for surgery preparation or follow up. All patients were aged at least 18 years. All examinations conducted in the survey are related to Meibomian Gland followed the recommendations of the International TFOS Workshop on Meibomian Gland Dysfunction. The following procedures had been performed: questioning about year of birth, gender, systematic description of patient's symptoms and current topical ophthalmic therapy usage. We examined dermatological aspect of the face, eyelids and ocular surface. Quotation of the impact of eyelid disorder on daily life and recommended strategy for the treatment of the eyelid disorders.

#### **Results:**

-

#### **Conclusion:**

Eyelids disorders range from benign, self resolving troubles, to more severe processes like infections, tumors, or structural problems. Although, most eyelid disorders are not vision-threatening or life-threatening, many of them can induce irritative symptoms and inflammation altering the patient's quality of life. However a simple inflammation and or infection can also put at risk a surgery.

Known to be very common, signs of eyelids disorders can be so subtle that without a detailed examination of the lid margin, they may go underdiagnosed.

#### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA ORBITU / Orbit section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Josip

**Ime i prezime / First and Last Name:-Last**

Knežević

## **50. Darko Batistić**

### **Naslov:**

Kombinirani pristup u liječenju NVG primjenom anti-VEGF terapije i retinalne kriopeksije putem bioma

### **Autori:**

Batistic D., Bucan K., Plestina I., Znaor Lj., Sinicic A.

### **Ustanova:**

KBC SPLIT

### **Cilj:**

Prikazati metodu kombiniranog pristupa u liječenju neovaskularnog glaukoma primjenom anti VEGF terapije i kriopeksijom periferne retine putem bioma i krovnog osvijetljenja a kod pacijenata kod koji h laserska fotoagulacija mrežnice zbog uske zjenice ili loših optičkih medija nije moguća.

### **Bolesnici i metode:**

Dvoje pacijenata sa NVG koji se javio sekundarno zbog proliferativne dijabetičke retinopatije lijeceno je kombiniranom primjenom anti VEGF terapije i retinalne kriopesije putem bioma i krovnog svijetl a koji se koriste u vitreoretinalnoj kirurgiji. Biomski sustav daje odlican uvid u očno dno kod pacijenta sa uskim zjeničnim otvorom kao i kod lošijih optičkih medija. Nakon konjunktivalne peritonije 360 stupnjeva i insercije krovnog svjetla putem 25 G troakara kriosonda je putem bioma prislonjena transkleralno na zone ishemične retine u cirkumferenciji od 360 stupnjeva te je ishemična mrežnica treirana. Na kraju je intravitrealno apliciran anti VEGF lijek kao i 1 mjesec prije samog postupka te je spojnica zatvorena pojedinačnom konjunktivalnom savovima.

### **Rezultati:**

Nakon 8 tjedana doslo je do potpune regresije neovaskularizacija i normalizacije očnog tlaka.

### **Zaključak:**

Kriopeksija periferne mrežnice putem bioma i krovnog osvijetljenja kod bolesnika sa NVG i ishemičnom perifernom retinom je odlična alternativa laserskoj retinopeksiji kod bolesnika koji imaju indikaciju za istu ali kod kojih ista zbog loših optičkih medija ili uske zjenice nije moguća.

### **Title:**

Combined approach in the treatment of NVG with anti-VEGF therapy and retinal cryopexy via biom

### **Authors:**

Batistic D., Bucan K., Plestina I., Znaor Lj., Sinicic A.

### **Institution:**

Clinical Hospital Centre Split

### **Aim:**

To show a method of combined approach in the treatment of neovascular glaucoma using anti VEGF therapy and peripheral retinal cryopexy through biom and roof illumination in patients in whom retinal photocoagulation due to narrow pupil or poor optical media is not possible.

**Patients and methods:**

Two NVG patients who reported secondary to proliferative diabetic retinopathy were treated with a combination of anti-VEGF therapy and peripheral retinal cryopexy via the biom and the chandelier light used in vitreoretinal surgery. The biom system provides an excellent insight into the fundus of patients with narrow pupil as well as in poorer optical media. After the conjunctival peritomy of 360 degrees and the insertion of the roof light through 25 G trocar, the cryoefect was transclerally transmitted to the ischemic retina in the circumference of 360 degrees. Finally, the anti-VEGF drug is administered intravitreally as well as 1 month before the procedure itself, and the conjunctiva was closed by a 8,0 vycril suture.

**Results:**

After 8 weeks, complete regression of neovascularization and normalization of the ocular pressure has occurred.

**Conclusion:**

Peripheral retinal cryopexy through biom and roof illumination in patients with NVG and ischemic peripheral retina is a great alternative to laser retinopexy in patients who have an indication for the same but in the case of poor optical media or narrow pupil it is not possible.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Darko

**Ime i prezime / First and Last Name:-Last**

Batistić

## **51. Bojan Pužić**

### **Naslov:**

Rijetki uzroci otoka vjeđa

### **Autori:**

Puzic B , Ivezkovic R, Zrinscak O, Radman I , Vatavuk Z

### **Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska

### **Cilj:**

Prikazati dva slučaja intraorbitalnih cisti

### **Bolesnici i metode:**

Dvije bolesnice , 9 godišnja djevojčica i 39 godišnja žena imale su intraorbitalne ciste. Magnetska rezonanca kod mlađe bolesnice pokazala je orbitalnu cističnu masu , magnetska rezonanca kod starije bolesnice pokazala je patološki proces sa invazivnim ponašanjem koji je potiskivao očni bulbus kaudalno. Kirurška ekskizija kroz transkonjunktivalnu orbitotomiju prikazala je orbitalne ciste blizu insercija mišića, koje su uspješno uklonjene.

### **Rezultati:**

Ekrini hidrocistom i orbitalna cista potvrđene su histopatološkom analizom. Postoperativni rezultati bili su dobri.

### **Zaključak:**

Nalazi kod ovih bolesnica pokazuju nam još jednu opciju pri diferencijalnoj dijagnozi kada se susrećemo s pacijentima koji imaju otok vjeđa.

### **Title:**

Rare cause of eyelid swelling

### **Authors:**

Puzic B , Ivezkovic R, Zrinscak O, Radman I , Vatavuk Z

### **Institution:**

University Department of Ophtalmology, University Hospital Center Sestre milosrdnice, Zagreb, Croatia

### **Aim:**

To show two cases with intraorbital cysts

### **Patients and methods:**

Two patients, a 9 year old girl and a 39 year old woman, had an orbital cyst. Magnetic resonance imaging in younger patient showed orbital cystic mass, older patient magnetic resonance imaging showed pathological process with invasive behavior that pushed globe caudal. Surgical excision through trans

conjunctival orbitotomy showed orbital cysts close to muscles intsertion that were successfully removed.

**Results:**

Eccrine hidrocystoma, and orbital cyst were confirmed by histopathologic evaluation. Postoperative results were good

**Conclusion:**

The findings in patients demonstrate an addition to the differential diagnosis when facing patients with eyelid swelling.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Bojan

**Ime i prezime / First and Last Name:-Last**

Puzić

## **52. Amra Nadarević Vodečanrević**

### **Naslov:**

DIJAGNOSTICIRANJE I TRETMAN REFRAKCIJSKIH GREŠAKA KOD PREDŠKOLSKE I ŠKOLSKE DJECE

### **Autori:**

Nadarević Vodečanrević Amra, Jusufović Vahid, Halilbašić Meliha, Alimanović Emina

### **Ustanova:**

Dz Tuzla, UKC Tuzla, UKC Sarajevo

### **Cilj:**

Ciljevi ovog istraživanja su utvrđivanje učestalosti različitih vrsta refrakcijskih grešaka kod zdrave predškolske i školske djece na području općine Tuzla, potom utvrđivanje da li se smanjena vidna oština može korigovati odgovarajućim naočalama ili kontaktnim sočivima, kao i određivanje etiologije slabovidnosti ispitivane populacije.

### **Bolesnici i metode:**

Istraživanjem su obuhvaćena sva predškolska djeca iz 8 obdaništa i školska djeca u dobi od 7 do 15 godina iz 24 osnovne škola, kao i djeca iz Centra za rehabilitaciju i Doma Zdravlja Tuzla. Podaci dobiveni ispitivanjem analizirani su metodama neparametrijske statistike kao i pomoću hi-kvadrat testa.

### **Rezultati:**

Na ukupnom uzorku ( $n=145$ ), odnosno 290 očiju najzastupljenija refrakcijska greška je astigmatizam koji je evidentiran kod 52,4% očiju. Na uzorku od ( $n=18$ ) ispitanika predškolske dobi odnosno 36 očiju, najčešća refrakcijska greška je jedan od oblika astigmatizma, koji je evidentiran kod 52,8% očiju, potom sljedi dalekovidnost 25% očiju. Na uzorku od ( $n=127$ ) ispitanika školske dobi odnosno 254 oka, najčešća refrakcija greška je jedan od oblika astigmatizma 52,4% oka, potom slijedi kratkovidnost 31,7% oka. Ispitanici školske dobi češće nemaju slabovidnost, dok je kod ispitanika predškolske dobi češća pojava slabovidnosti ( $\chi^2=5,75$ ;  $p<0,05$ ).

### **Zaključak:**

S rastom djece opaža se postepeni pad hipermetropije, porast miopije, miopnog i mješovitog astigmatizma. Moderan način života zahtjeva precizan vid pa je stoga korekcija refrakcijske greške, potreba svakog djeteta. Masovni skrining programi su potrebni kako bi se na vrijeme otkrila refrakcijska greška.

### **Title:**

DIAGNOSTIC AND TREATMENT OF REFRACTIVE ERROR IN PRESCHOOL AND SCHOOL POPULATION

### **Authors:**

Nadarević Vodečanrević Amra, Jusufović Vahid, Halilbašić Meliha, Alimanović Emina

### **Institution:**

Dz Tuzla, UKC Tuzla, UKC Sarajevo

### **Aim:**

The purpose of this study is to determine the frequency of different types of refractive errors in healthy preschool children and school children in the municipality of Tuzla, in addition to this it also serves to determine whether the reduced visual acuity can be corrected by appropriate glasses or contact lenses, as well as the etiology of amblyopia.

#### **Patients and methods:**

This study covers all preschool children from 8 daycare centers and school children aged 7 to 15 from all 24 elementary schools in Tuzla, as well as children from the Rehabilitation Center and Health Care Center Tuzla. . The obtained data were analyzed using non-parametric statistics, and as well the chi-square test.

#### **Results:**

In the total sample of children (n=145), or 290 eyes, the most common refractive error was astigmatism, which was recorded in 52,4% of eyes. In the sample of preschool children (n=18) or in 36 eyes, the most common refractive error was astigmatism which was recorded in 52,8%, eyes, followed by hypermetropia 25% eyes. In the sample of school children (n=127) or 254 eyes, the most common refractive error was astigmatism which was recorded in 52,4% eyes., follow by myopia 31,7%. Preschool children more commonly suffer from amblyopia than school children do ( $\chi^2 = 5,75$ ;  $p<0,05$ ).

#### **Conclusion:**

With the growth of children there is observed a gradual decline in hyperopia and increase in myopia with myopic and mixed astigmatism. Modern life requires a precise vision, therefore the correction of refractive errors is a necessity of every single child. Mass screening is required for early diagnosis and treatment of children with refractive errors.

#### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

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### **53. Tena Križ**

#### **Naslov:**

Povezanost moždanog neurotropnog čimbenika s oštećenjima vidnoga živca u bolesnika s glaukomom

#### **Autori:**

Križ T, Zorić Geber M, Novak Lauš K, Vatavuk Z

#### **Ustanova:**

KBC Sestre milosrdnice

#### **Cilj:**

Utvrđiti povezanost koncentracije BDNF u očnoj vodici i krvi s funkcionalnim i strukturalnim oštećenjima vidnoga živca u bolesnika s glaukomom u odnosu na zdravu populaciju

#### **Bolesnici i metode:**

U studiju je uključeno 50 pacijenata iznad 50 godina Klinike za očne bolesti „Sestre milosrdnice“ koji su operirali kataraktu i glaukom. Svim sudionicima uključenim u istraživanje uz potpisani informiran i pristanak i učinjen standardni oftalmološki pregled, izmjerena je koncentracija BDNF iz seruma uzet a iz periferne venske krvi i koncentracija BDNF iz očne vodice. Također su svi pacijenti preoperativno napravili strukturalne i funkcionalne dijagnostičke pretrage kako bismo gradirali stadij glaukoma.

#### **Rezultati:**

Moždani neurotropni čimbenik (BDNF) je povezan s funkcionalnim i strukturalnim oštećenjem vidnoga živca u bolesnika s glaukomom. Koncentracije BDNF iz očne vodice i iz seruma su snižene u bolesnika s glaukomom u odnosu na kontrolnu skupinu.

#### **Zaključak:**

Rezultati ovog istraživanja govore o mogućem doprinosu BDNF u mehanizmu nastanka glaukomskog oštećenja, a što posledično otvara vrata mogućim novim modalitetima liječenja glaukoma odnosno protekcijskoj i prevenciji funkcionalnih i strukturalnih oštećenja vidnoga živca.

#### **Title:**

Linkage of brain neurotrophic factor with impaired vision nerve in a patient with glaucoma

#### **Authors:**

Križ T, Zorić Geber M, Novak Lauš K, Vatavuk Z

#### **Institution:**

KBC Sestre milosrdnice

#### **Aim:**

Determine the correlation of BDNF concentration in aqueous humor and blood with functional and structural impairment of the optic nerve in glaucoma patients in relation to healthy population

#### **Patients and methods:**

The study included 50 patients over 50 years of the Eye Disease Clinic "Sestre milosrdnice" who operated cataracts and glaucoma. All participants involved in the study with signed informed consent and performed a standard ophthalmic examination. The serum BDNF concentration taken from the peripheral blood vein and the BDNF concentration from the ocular water was measured. All patients also performed preoperatively structural and functional diagnostic tests to construct the stage of glaucoma.

### **Results:**

The brain neurotropic factor (BDNF) is associated with functional and structural impairment of the optic nerve in glaucoma patients. Serum BDNF concentration and aqueous humor concentrations were lowered in glaucoma patients compared to the control group.

### **Conclusion:**

The results of this study indicate the possible contribution of BDNF to the mechanism of glaucoma damage and consequently opens the door to possible new modes of glaucoma treatment, ie protection and prevention of functional and structural damage to the optic nerve.

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Križ

## **54. Siddig Basha**

### **Naslov:**

Usporedba standardne i ubrzane metode Cross-linkinga za keratoconus

### **Autori:**

S. Basha, D. Šarić, S. Ramić, B. Kuzmanović-Elabjer, M. Bušić

### **Ustanova:**

Očna klinika, KB"Sveti Duh", Zagreb

### **Cilj:**

Usporediti standardni rožnični cross-linking (SCXL, Dresden Protokol) sa ubrzanim rožničnim cross-linkingom (ACXL) za liječenje početnog do srednjeg uznapredovalog progresivnog keratokonusa.

### **Bolesnici i metode:**

Obrađene su dvije skupine bolesnika s progresivnim kretanokonusom koji su podvrgnuti Konvencion alnoj metodi (3 mW/cm ozračenje za 30 min) ili ubrzanoj Cross-Linking metodi. (9 mW/cm ozračenja za 10 min). U obje skupine bilo je po 25 očiju od 25 bolesnika. Usporedili smo nekorigiranu vidnu oštirnu (UCVA,) maksimalne keratometrijske vrijednosti(Kmax), s rednje keratometrijske vrijednosti (Kmean) te dubinu demarkacijske linije.

### **Rezultati:**

Obrađeno je ukupno 50 očiju s prosječnim praćenjem od  $12,9 \pm 5,3$  mjeseci. Kod 25 očiju učinjen je konvencionalni SCXL, a kod 25 očiju ubrzani ACXL. U konvencionalnoj skupini značajno se pobolj šala nekorigirana vidna oštirina. Također je došlo do značajnog smanjenja (Kmax) i (Kmean). U skupi ni sa ubrzanim ACXL- a nisu pronađene značajne promjenene korigiranoj vidnoj oštirini, Kmax i Kmean postoperativno. Zna čajno veće smanjenje u Kmax i Kmean utvrđeno je sa konvencionalnim SCXL- om u usporedbi s ubrzanim ACXL- om. Linija demarkacija bila je dublja u očima sa konvencionalnim SCXL-om.

### **Zaključak:**

Konvencionalni i ubrzani cross-linking su učinkoviti u stabilizaciji progresije keratokonusa nakon prosječno 12 mjeseci. Bolesnici ko ji su bili podvrgnuti konvencionalnom sCXL- om pokazali su poboljšanje s većim zaravnjenjem rožnice, koje je koreliralo s dubljom rožničnom str omalnom demarkacijskom linijom.

### **Title:**

Comparison of Standard Versus Accelerated Corneal Collagen Cross-Linking for Keratoconus

### **Authors:**

S. Basha, D. Šarić, S. Ramić, B. Kuzmanović-Elabjer, M. Bušić

### **Institution:**

Eye Clinic, KB"Sveti Duh", Zagreb

**Aim:**

To compare standard (SCXL, Dresden protocole) to accelerated corneal collagen cross-linking (ACXL) for the treatment of mild or moderate progressive keratoconus.

**Patients and methods:**

Participants were two groups of patients with progressive keratoconus receiving either conventional (3 mW/cm irradiance for 30 min) or accelerated CXL (9 mW/cm irradiance for 10 min). In both groups were 25 eyes of 25 patients. Uncorrected distant visual acuity (UCVA), maximum keratometry (Kmax), mean keratometry (Kmean), demarcation line depth were measured and compared.

**Results:**

There were a total of 50 eyes with an average follow up of  $12.9 \pm 5.3$  months. 25 eyes received conventional CXL, and 25 eyes had accelerated CXL. In the conventional CXL group CDVA improved significantly. There was also a significant reduction in Kmax and Kmean. In the accelerated CXL group no significant changes were found in UCVA, Kmax and Kmean postoperatively. A significantly greater reduction in Kmax and Kmean were seen in conventional CXL compared accelerated CXL. The demarcation line was deeper in eyes with conventional CXL.

**Conclusion:**

Conventional and accelerated CXL are effective in stabilizing keratoconus progression after a mean of 12 months. Patients undergoing conventional CXL showed clinical improvement with greater corneal flattening, which correlated with a deeper corneal stromal demarcation line.

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Siddig

**Ime i prezime / First and Last Name:-Last**

Basha

## **55. Karla Katić**

### **Naslov:**

Neuobičajeni slučajevi okluzija centralnih retinalnih vena u mладих ljudi - prikaz tri slučaja

### **Autori:**

Katić K, Barun I, Pleština- Borjan I, Bućan K

### **Ustanova:**

Klinika za očne bolesti KBC Split

### **Cilj:**

Prikazati tri bolesnika mlađa od četrdeset godina s preboljenim okluzijama centralne retinalne vene, kao mogući rezultat genetski uvjetovane trombofilije.

### **Bolesnici i metode:**

Tri bolesnika u dobi od dvadeset jedna, trideset sedam i trideset osam godina javili su se na hitni prijem u Klinike za očne bolesti KBC Split s kliničkom slikom zamućenog i slabijeg vida na jednom oku unutar par dana do dva tjedna. Tridesetosmogodišnjak je na zahvaćenom oku imao vidnu oštrinu 0.06. Pregled fundusa zahvaćenog oka pokazao je edematozni vidni živac izbrisanih granica, peripapilarna i plamičasta krvarenja difuzno, dilatirane i tortuočne vene, cotton wool eksudati i edem makule. Jednaku sliku fundusa imao je i dvadesetjednogodišnjak, uz nešto bolju vidnu oštrinu zahvaćenog oka od 0.3. Vidna oštrina tridesetsedmogodišnje bolesnice iznosila je 0.6 na zahvaćenom oku, a na fundusu se prikazao vidni živac dijelom nejasnih granica s difuznim hemoragijama retine te cotton wool eksudati ma i edemom makule. U svih bolesnika u ranoj fazi flouresceinska angiografija je pokazala blok fluoresceina u području retinalnih hemoragija te paravaskularno propuštanje fluoresceina u kasnoj fazi. Optička koherentna tomografija makule pokazala je prisutnost intraretinalne tekućine. Nijedan od tri prikazana bolesnika nije imao pridruženih očnih i sustavnih bolesti. Učinjene su opsežne kliničke pretrage uključujući kompletne laboratorijske pretrage, imunoelektroforezu proteina plazme, koagulacijske i immunološke pretrage, magnetnu rezonanciju orbita, ultrazvuk abdomena, pregled neurologa, kardiologa, reumatologa i hematologa te konačno i molekularno testiranje na trombofilične čimbenike. Bolesnici su testirani za pet vrsta gena: gen za faktor V Leiden (FVQ506), faktor II (G20210A), gen za metilen-tetrahidrofolat reduktazu (MTHFR, C677T), gen za plazminogen aktivator inhibitor (PAI-1; 4G/4G, 5G/5G, 4G/5G) te angiotenzin konvertirajući gen (ACE; delecijski/insercijski). Normalni genotip za faktor II, V, MTHFR, PAI-

1 i ACE utvrđen je u tridesetosmogodišnjeg bolesnika. Normalni genotip za faktor II, V, MTHFR i ACE je također nađen u tridesetsedmogodišnje bolesnice te insercijsko- delecijski 4G/5G PAI-1 genotip. Najmlađi bolesnik je imao normalne genotipove za faktor II, V i MTHFR te insercijsko- delecijski 4G/5G PAI-

1 genotip i delecijski genotip za ACE, koji ukazuju na povećanu sklonost venskim okluzijama u odnosu na normalnu populaciju. Zbog značajnog pada vidne oštine kao posljedice makularnog edema svi m bolesnicima je ordinirana anti vascular endothelial growth factor (anti VEGF) terapija: 0,5mg/0,05 ml ranibizumaba intravitrealno uz praćenje stanja svaka četiri tjedna.

### **Rezultati:**

Apliciranje triju uzastopnih injekcija ranibizumaba intravitrealno rezultiralo je u svih troje bolesnika maksimalnim poboljšanjem vidne oštine (1.0) uz potpunu resorpciju makularnog edema.

### **Zaključak:**

Navedeni slučajevi predstavljaju unilateralne kompletne okluzije centralnih retinalnih vena u bolesnik a mlađih od 40 godina, što je neuobičajena dob za navedenu dijagnozu, uz naglasak isključenja bilo k akvih sustavnih bolesti i uredne standardne laboratorijske nalaze za trombofiliju. Molekularna analiza gena povezanih s trombofilijom ukazuje da bi polimorfizam gena za PAI-1 i ACE mogao biti odgovoran za tromboembolijski incident u dvoje mlađih bolesnika.

**Title:**

Unusual cases of central retinal vein occlusion in young adults - genetic background?

**Authors:**

Katić K, Barun I, Pleština- Borjan I, Bućan K

**Institution:**

Department of Ophthalmology, University Hospital Center Split

**Aim:**

The aim of this report is to present three patients younger than forty years with a history of central retinal vein occlusions with possible genetic background.

**Patients and methods:**

Three patients aged twenty-one, thirty-seven and thirty-eight years presented to Department of Ophthalmology, University Hospital Center Split with blurred and impaired vision that lasted few days to two weeks. Visual acuity (VA) of affected eye in thirty eight year old patient was only 0.06. The fundoscopy revealed papilledema, retinal flame-shaped hemorrhages, cotton wool spots, dilated tortuous veins and macular edema. The same fundus findings were in twenty one year old patient, with a slightly better VA of the affected eye by 0.3. Visual acuity in thirty seven year old patient was 0.6 on the affected eye, while the fundoscopy showed the same findings as in last two patients but with normal optic nerve head limits. The early phase of fluorescein angiography showed multiple areas of hypofluorescence due to intraretinal hemorrhages and leakage of dye involving the fovea in the late phase in all patients. Optical coherence tomography (OCT) showed an accumulation of intraretinal fluid. It is interesting to point out that the patients were otherwise healthy and had no other ocular or systemic diseases. Due to their age, extensive clinical examinations were performed including complete laboratory tests, immunoelectrophoresis of the plasma proteins, blood coagulation (including prothrombin time, activated partial thromboplastin time, protein C, protein S, factor V Leiden, antithrombin III, homocysteine, antinuclear antibody, lupus anticoagulant, and anticardiolipin antibody) and immunological tests, magnetic resonance imaging of the orbits, abdominal ultrasound, the examination of neurologist, cardiologist, rheumatologist and hematologist. All the tests showed normal results. Finally the molecular analysis of thrombophilic factors was also performed. Patients were tested for five gene variants: factor V Leiden (FVQ506), factor II (G20210A), methylene- tetrahydrofolate reductase (MTHFR, C677T), plasminogen activator inhibitor-1 (PAI-1; 4G/4G, 5G/5G, 4G/5G), and angiotensin converting enzyme (ACE; deletion/insertion). Normal genotypes of factor II, V, MTHFR, PAI-

1 and ACE were determined in thirty eight year old patient. The same findings were in thirty seven year old patient, but with insertion - deletion 4G/5G genotype of PAI-1.

The youngest patient had normal genotypes of factor II, V and MTHFR but insertion - deletion 4G/5G genotype of PAI-

1 and deletion genotype of ACE, which indicates an increased tendency to venous occlusion compared to the normal population. Due to cystoid macular edema, they all were treated with three consecutive intravitreal applications of anti-vascular endothelial factor (anti-VEGF; ranibizumab) with regular ophthalmologic follow up every four weeks.

**Results:**

Applying three consecutive intravitreal injections of ranibizumab resulted with improvement of the best corrected VA to 1.0 and complete resorption of macular edema on OCT in all three patients.

**Conclusion:**

These cases illustrate unilateral central retinal vein occlusions in patients with no systemic and ocular diseases and a normal laboratory workup for thrombophilia. The molecular analysis of the genes associated with thrombophilia showed that the PAI-1 and ACE genotype polymorphisms could be responsible for the retinal venous occlusive disease in young and healthy patients, which should always be kept in mind.

**Kongres / Congresse:**

19. Kongres HOOD-a

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Katić

## **56. Tomislav Ljubičić**

### **Naslov:**

Vrste, rizici i uzroci ranih i kasnih dislokacija intraokularne leće

### **Autori:**

Ljubičić T, Vučinović A, Gverović Antunica A, Bućan K

### **Ustanova:**

Klinički bolnički centar Split, Klinika za očne bolesti

### **Cilj:**

Utvrđiti učestalost i vrste luksacija i subluksacija intraokularne leće (IOL) u bolesnika hospitaliziranih pri Klinici za očne bolesti KBC Split u razdoblju od 2015. do 2018. te moguće čimbenike rizika.

### **Bolesnici i metode:**

Retrospektivna analiza kod 38 bolesnika (ukupno 43 oka) s dislokacijom IOL u kojih je obavljena operacija repozicije intraokularne leće.

### **Rezultati:**

Od 2015.-

2018.g. na Klinici za očne bolesti KBC Split operirano je 27 očiju zbog luksacije intraokularne leće u staklovinu, 13 zbog subluksacije intraokularne leće u staklovinu te 3 zbog subluksacije intraokularne leće u prednju sobicu. Od toga, 64 % su klasificirane kao rane poslijeoperacijske komplikacije unutar 3 mjeseca od operacije ili drugog uzroka dislokacije, a 36 % kao kasne komplikacije. U operiranih pacijenata s dislokacijom IOL operacija je bila u prosjeku prije 3.89 godina, a (sub)luksacija IOL-a se dogodila prije 7.22 mjeseca. Trauma je bila uzrok u 18% bolesnika, operacija katarakte u bolesnika s pseudoeksfolijacijskim sindromom u 28% te prethodna vitreoretinalna operacija u 23% bolesnika s dislokacijom IOL. Prosječna vrijednost najbolje korigirane vidne oštirine prilikom prijema na Kliniku bila je 0.27, a prilikom otpusta 0.48.

### **Zaključak:**

Obzirom na ukupni broj operacija na prednjem i stražnjem segmentu oka u istraživanom razdoblju (c ca 12700) te ukupni broj hospitaliziranih pacijenata zbog traume oka, ukupni broj dislokacija intraokularne leće je na donjoj granici učestalosti u usporedbi s podacima u literaturi.

### **Title:**

Types, risks and causes of early and late intraocular lens dislocation

### **Authors:**

Ljubičić T, Vučinović A, Gverović Antunica A, Bućan K

### **Institution:**

Department of Ophthalmology Clinical Hospital Centre Split

### **Aim:**

To determine incidence and types of luxation and subluxation of intraocular lens (IOL) in patients at Department of Ophthalmology Clinical Hospital Centre Split in period of 2015-2018 and possible risk factors.

**Patients and methods:**

Retrospective analysis in 38 patients (43 eyes in total) with IOL dislocation in which operative repositioning of IOL had been done.

**Results:**

In period of 2015-

2018 at Department of Ophthalmology Clinical Hospital Centre Split, 27 eyes had been operated due to IOL luxation in vitreous, 13 due to IOL subluxation in vitreous and 3 due to IOL subluxation in anterior chamber. 64% of those were classified as early postoperative complications within 3 months of operation or other cause of dislocation and 36% as late complications. In patients with dislocated IOL primary operation was before 3.89 years in average and (sub)luxation occurred 7.22 months ago. Trauma was the cause in 18%, cataract surgery in patients with pseudoexfoliative syndrome in 28% and prior vitreoretinal surgery in 23% of patients with IOL dislocation. Average value of best corrected visual corrected acuity was 0.27 at admission at Clinic and 0.48 at release.

**Conclusion:**

Regarding the overall number of operations on anterior and posterior ocular segment in observed period (cca 12700) and overall number of hospitalized patients due to eye trauma, total number of dislocated IOLs is on lower margin of incidence compared to incidence in recent worldwide literature.

**Kongres / Congresse:**

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Tomislav

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Ljubičić

## **57. Žana Ljubić**

### **Naslov:**

Arnold- Chiari malformacija – prikaz slučaja

### **Autori:**

Ljubić Ž, Vučinović A, Karlica Utrobičić D, Bućan K.

### **Ustanova:**

Klinika za očne bolesti KBC Split

### **Cilj:**

Prikazati slučaj pacijenta s Arnold – Chiarijevom malformacijom sa simptomima glavobolje, povremenih dvoslika i patološkog nalaza vidnih evociranih potencijala.

### **Bolesnici i metode:**

Pacijentica u dobi od 14 godina javlja se na oftalmološku ambulantu po preporuci neuropedijatra zbog učestalih intenzivnih glavobolja, pogotovo nakon fizičkog npora. Uradi se kompletni oftalmološki pregled te vidni evocirani potencijali. Na neuropedijatrijskoj ambulanti je postavljena dijagnoza migrene. Nakon 4 mjeseca, zbog gubitka svijesti, nakon treninga, pacijentica se hospitalizira na Klinici za perijatriju. U kliničkoj slici prisutna intenzivna glavobolja, povraćanje te dvoslike. Učini se Hess – Lancaster test, ponovljeni vidni evocirani potencijali i magnetna rezonanca.

### **Rezultati:**

Vidna oštrina oba oka, na prvom pregledu, bila je 1,0. Vidni evocirani potencijali pokazali su produljene latencije (desno oko: 112.1 ms, lijevo oko: 113.3) te uredne amplitude oba oka. Prilikom hospitalizacije, ponovljeni nalaz vidnih evociranih potencijala ukazao je na dodatno produljenje latencije (desno oko: 117.7 ms, lijevo oko 118.2 ms). Hess – Lancaster test pokazao je hiperfunkciju oba medijalnih i ravna mišića. Na nalazu magnetske rezonance prisutna je hernijacija cerebelarnih tonsila kroz foramen magnum za 7 mm. Postavljena je dijagnoza Arnold Chiarijeve malformacije I stupnja.

### **Zaključak:**

Testiranje vidnih evociranih potencijala kod djece i adolescenata s učestalim glavoboljama moglo bi biti korisno prilikom obrade i postavljanja konačne dijagnoze. Patološki nalaz vidnih evociranih potencijala zahtjeva širu obradu, te može upućivati na kompleksnije dijagnoze, kao što je bilo u prikazanom slučaju.

### **Title:**

Arnold-Chiari malformation – A case Report

### **Authors:**

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### **Institution:**

Clinic for eye disease, University hospital centre Split

### **Aim:**

To present a case of a patient with Arnold - Chiari 's malformation with symptoms of headache, intermittent double vision and pathological findings of visual evoked potentials.

**Patients and methods:**

A female patient, aged 14, was referred to ophthalmologist by a neuropediatrician due to frequent intensive headaches, especially after hard physical exertion. Complete ophthalmic examination and visual evoked potentials were done. Patient was diagnosed with a migraine by neuropediatrician. Four months after the diagnosis, patient lost consciousness after training, and was hospitalized at the Pediatric Clinic. Symptoms included intense headaches, vomiting and double vision. Hess - Lancaster test, visual evoked potentials and magnetic resonance were done.

**Results:**

The visual acuity of both eyes, at first examination, was 1.0. Visual evoked potentials showed prolonged latencies (right eye: 112.1 ms, left eye: 113.3 ms) and normal amplitudes of both eyes. During hospitalization, visual evoked potentials indicated even more prolonged latencies (right eye: 117.7 ms, left eye 118.2 ms). The Hess - Lancaster test showed a hyperfunction of both medial recti muscles. Magnetic resonance imaging described a 7 mm herniation of cerebellar tonsils through foramen magnum. Arnold Chiari's malformation stage I was diagnosed

**Conclusion:**

Visual evoked potentials could be useful tool in diagnosis of headache in children and adolescents. Pathological findings of visual evoked potentials require further examination, and may indicate more severe problem, as was the case in our patient.

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Ljubić

## **58. Ivana Barun**

### **Naslov:**

„Aqueous misdirection“ nakon atake akutnog glaukoma (prikaz slučaja)

### **Autori:**

Barun I, Katić K, Sušac T, Bućan K

### **Ustanova:**

Klinika za očne bolesti KBC Split

### **Cilj:**

Prikazati slučaj bolesnice s atakom akutnog glaukoma koja se nakon funkcionalne iridotomije kompli cira i razvija u sekundarni, maligni glaukom.

### **Bolesnici i metode:**

Pacijentica u dobi 69 godina prezentira se na Kliniku za očne bolesti s bolovima i padom vida na desno oko koje primjećuje u posljednja 24 sata. Prilikom oftalmološkog pregleda biomikroskopski je utvrđena cilijarna injekcija uz edem rožnice, plitka prednja sobica, zjenica u semimidrijazi, slabih reakcija na svjetlost i kortikonuklerano zamućenje leće. Uz dolaznu vidnu oštinu desnog oka od 0,2 pronađe se i visok intraokularni tlak (IOT) vrijednosti 42 mmHg. Pacijentica je zaprimljena pod glavnom dijagnozom akutnog glaukoma desnog oka te se odmah uključuje lokalna i sistemska medikamentozna terapija po smjernicama za akutni glaukom. Na temelju slabog uspjeha navedene terapije, posebno piloka rpinom, isključuje se pupilarni blok kao mehanizam porasta IOT i pretpostavlja se da se radi o fakognom glaukomu te se planira operacija katarakte prije koje se nastoji sniziti IOT Nd YAG laser iridotomijom. Nakon iridotomije dolazi do kratkotrajnog pada IOT, no tijekom istog dana ponovno raste do vrijednosti od 40mmHg. S obzirom na aksijalno plitku prednju sobicu i pomak leće prema naprijed te povišeni IOT uz prohodnu iridotomiju dolazi se do dijagnoze malignog glaukoma. Pristupa se kirurškim zahvatu proširenja iridotomije uz prednju parcijalnu hijaloidektomiju nakon čega se IOT normalizira i stabilizira na vrijednostima 10-

14mmHg. Pacijentica se otpušta uz lokalnu antiglaukomsku terapiju te se na redovitim kontrolama pratiti IOT u rasponu 12-14mmHg, uz krajnju vidnu oštinu od 0,6.

### **Rezultati:**

Zahvaljujući ispravnom prepoznavanju malignog glaukoma metodom isključivanja drugih uzroka plitke prednje sobice s visokim IOT moglo se ispravno tretirati navedeno stanje što je rezultiralo normalizacijom IOT, uz kroničnu lokalnu terapiju.

### **Zaključak:**

Maligni glaukom se javlja kao rezultat povećanog volumena staklovine koji je vjerojatno rezultat preusmjerenja očne vodice u vitrealnu šupljinu. Obično je komplikacija koja slijedi zahvat na očima sa zatvorenim kutom, a dijagnoza se postavlja isključivanjem drugih uzroka plitke prednje sobice i povišenog IOT, kao što se vidi na primjeru ove pacijentice. Gubitak vida je uobičajen poslije atake, a drugo o ko bi se trebalo tretirati s oprezom pošto se stanje može pojaviti bilateralno. Danas se pravilnom terapijom maligni glaukom može sanirati, ali su pacijenti, koji su uspješno izliječeni doživotno u riziku od recidiva koji se mogu dogoditi mjesecima ili čak i godinama nakon prvotne epizode.

### **Title:**

„Aqueous misdirection“ following acute angle closure (case report)

**Authors:**

Barun I, Katić K, Sušac T, Bućan K

**Institution:**

Department of Ophthalmology, KBC Split

**Aim:**

To present a patient with an acute glaucoma attack which develops into secondary, malignant glaucoma after functional iridotomy.

**Patients and methods:**

Female patient aged 69, presents with pain and loss of vision on her right eye in the last 24 hours. Biomicroscopic examination shows ciliary injection with corneal oedema, shallow anterior chamber, partial mydriasis of the pupil with poor photopupillary reflex and corticonuclear cataract. Visual acuity upon arrival is 0,2 and intraocular pressure (IOP) is 42mmHg. Patient is admitted with acute glaucoma attack as main diagnosis and treatment is started immediately, following acute glaucoma guidelines. Considering poor therapeutic effect, especially that of pilocarpine, pupillary block is ruled out and lens induced glaucoma is the new working diagnosis. Cataract surgery is planned with precedent Nd YAG laser iridotomy. After iridotomy IOP drops but rises again the same day to 40mmHg. Seeing the axial shallowing of anterior chamber, forward displacement of lens and high IOP with patent iridotomy, malignant glaucoma diagnosis is made. Surgical revision of iridotomy with anterior partial hyaloideectomy is performed and IOP finally stabilizes in 10-

14mmHg range. Patient is discharged with topical antiglaucomatous therapy and presents at regular follow-ups with IOP in 12-14mmHg range and final visual acuity of 0,6.

**Results:**

Thanks to the correct recognition of malignant glaucoma by exclusion of other causes of shallow anterior chamber with high IOP, this condition could be properly treated, resulting in normalization of IOP, with chronic topical therapy.

**Conclusion:**

Malignant glaucoma occurs as a result of an increased volume of vitreous which is probably due to the redirection of the aqueous humor to the vitreous cavity. It is usually a complication following a closed-angle eye surgery, and the diagnosis is made by exclusion of other causes of shallow anterior chamber and elevated IOP, as seen in the patient's example. Vision loss is common after the onset, and the other eye should be treated with caution as the condition may appear bilaterally. Today, proper malignant glaucoma therapy can be remedied, but the patients who were successfully treated are at a lifelong risk for recurrences that may occur months or even years after the initial episode.

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Barun

## **59. Ante Bašić**

### **Naslov:**

Pneumatska vitreoliza uz pomoć "drinking bird" tehnike u liječenju vitreomakularnih trakcija

### **Autori:**

Bašić A, Jakšić B, Kowalski M, Znaor Lj.

### **Ustanova:**

Klinika za očne bolesti KBC Split

### **Cilj:**

Cilj ovog istraživanja je utvrditi učinkovitost pneumatske vitreolize (uz pomoć "drinking bird" tehnik e) kao alternativne tehnike u liječenju vitreomakularnih trakcija.

### **Bolesnici i metode:**

U istraživanje je uključeno jedanaest bolesnika, koji su bili hospitalizirani u Klinici za očne bolesti, K BC Split s potvrđenom dijagnozom vitreomakularne trakcije pomoću optičke koherentne tomografije (OCT). Bolesnici su bili podvrgnuti operaciji pneumatske vitreolize s plinom sumpor heksafluoridom te su nakon zahvata iduća dva tjedna oponašali pokrete "ptice koja ispija vodu". Bolesnici su bili praćeni kroz minimalno 3 mjeseca.

### **Rezultati:**

Dvadeset sedam posto bolesnika su imali široku vitreomakularnu trakciju, a sedamdeset i tri posto su i mali usku vitreomakularnu trakciju. Na prvoj kontroli, tjedan dana nakon zahvata, rezolucija vitreomakularne trakcije registrirana je u osamnaest posto bolesnika. Nakon dva tjedna dvadeset sedam posto bolesnika imali su rezoluciju vitreomakularnih trakcija. Do poboljšanja najbolje korigirane vidne oštrine došlo je u šezdeset šest posto bolesnika u kojih je nastupila rezolucija trakcije. Kod njednog bolesnika nije došlo do povišenja intraokularnog tlaka. Nisu bile zabilježene nikakve komplikacije nakon zahvata.

### **Zaključak:**

Pneumatska vitreoliza uz pomoć "drinking bird" tehnike je sigurna i učinkovita tehnika prvog reda za liječenje vitreomakularnih trakcija.

### **Title:**

Pneumatic vitreolysis using the "drinking bird" technique for management of vitreomacular traction

### **Authors:**

Bašić A, Jakšić B, Kowalski M, Znaor Lj.

### **Institution:**

Department of Ophthalmology, University Hospital Centre Split

### **Aim:**

The aim of this study was to determine the efficacy of pneumatic vitreolysis (with the help of "drinking bird" technique) as an alternative technique for the treatment of vitreomacular tractions.

### **Patients and methods:**

The study included eleven patients who came to the Eye Clinic, KBC Split, with optical coherence tomography (OCT) confirmed diagnosis of vitreomacular traction. Patients were treated with pneumatic vitreolysis using sulfur hexafluoride gas, after that they would do the “drinking bird” technique for the next two weeks. Patients were followed-up for at least 3 months.

### **Results:**

Twenty-seven percent of the patients had a wide vitreomacular traction and seventy-three percent of the patients had a narrow vitreomacular traction. One week after the procedure, resolution of vitreomacular traction had occurred in eighteen percent of the patients. Two weeks after the treatment resolution had occurred in twenty-seven percent of the patients. The improvement of the best corrected visual acuity occurred in sixty-six percent of patients with traction resolution. No treated patient had a rise of intraocular pressure beyond normal limits. No other postoperative complications were recorded.

### **Conclusion:**

Pneumatic vitreolysis using the “drinking bird” technique is a safe and effective alternative first line treatment technique for the treatment of vitreomacular tractions.

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Ante

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Bašić

## **60. Boža Mihaljević**

### **Naslov:**

PVD, vidiš li?

### **Autori:**

Mihaljević B, Pužić B, Vatavuk Z

### **Ustanova:**

KBC Sestre milosrdnice

### **Cilj:**

Pouzdanost OCT-a u dijagnostici odljepljenja stražnje hijaloidne membrane

### **Bolesnici i metode:**

Bolesnicima sa simptomima odljepljenja stražnje hijaloidne membrane rađen je pregled očne pozadine indirektnom oftalmoskopijom u midrijazi, ultrazvučna dijagnostika (B-scan) i pregled na Optičkoj kohrentnoj tomografiji "Angiovue OCT" (program "Enhanced HD")

### **Rezultati:**

U studiju je bilo uključeno 25 bolesnika kojima su gledana oba oka, ukupno 50 očiju. Pregled očne pozadine je rađen indirektnom oftalmoskopijom u midrijazi, nakon čega je urađena i ultrazvučna dijagnostika te optička koherentna tomografija. Od ukupno 50 očiju, pregledom očne pozadine indirektnom oftalmoskopijom u midrijazi dijagnosticirano je 30 odljepljenja stražnje hijaloidne membrane (PVD - "posterior vitreous detachment") od ukupno 40 očiju s "PVD-om", dok je ultrazvučnom dijagnostikom utvrđeno 40/40 očiju s "PVD-om". Angiovue OCT s "Enhanced HD" programom je utvrđeno 35/40 očiju s "PVD-om".

### **Zaključak:**

Ultrazvučna dijagnostika u dijagnostici odljepljenja stražnje hijaloidne membrane je superiorna u odnosu na nalaz indirektnе oftalmoskopije, kao i na nalaz OCT-a.

### **Title:**

PVD, do you see?

### **Authors:**

Mihaljević B, Pužić B, Vatavuk Z

### **Institution:**

University Hospital Center Sestre milosrdnice

### **Aim:**

Advantages of OCT investigations in diagnostics of PVD (posterior vitreous detachment)

### **Patients and methods:**

Patients with symptoms of posterior vitreous detachment underwent fundoscopic examination in mydriasis, ultrasonic diagnostic (B-scan) and OCT Angiovue examination ("Enhanced HD" program).

**Results:**

The study included 25 patients with both eyes, a total of 50 eyes. The fundoscopic examination was made by indirect ophthalmoscopy in the mydriasis, followed by ultrasonic diagnostic and optical coherent tomography. Out of a total of 50 eyes, indirect ophthalmoscopy were diagnosed with 30 posterior vitreous detachment (PVD), with ultrasonic diagnostic for 40/40 eyes with PVD. Angiovue OCT with "Enhanced HD" program has detected 35/40 eyes with PVD.

**Conclusion:**

Ultrasonic diagnostics in the diagnosis of posterior vitreous detachment proved to be superior to indirect ophthalmoscopy, as well as the Angiovue OCT investigations.

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Bože

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Mihaljević

## **61. Nenad Vukojević**

### **Naslov:**

Pseudovitelliformna makulopatija u sklopu hereditarne hemokromatoze

### **Autori:**

Vukojević Nenad, Jukić Tomislav, Petriček Igor, Štanfel Marija i Mandić Krešimir

### **Ustanova:**

Klinika za očne bolesti, KBC Zagreb

### **Cilj:**

Cilja rada je opisati promjene u makuli kod dva oboljela od hereditarne hemokromatoze vezane za C 282Y mutaciju HFE gena

### **Bolesnici i metode:**

U radu su predstavljeni oftalmološki status, slikovna retinalna dijagnostika i elektrodijagnostika koji opisuju promjene u makuli.

### **Rezultati:**

Fundus fotografija, fundus autofluorescencija i fluoresceinska angiografija pokazale su promjene RPE u središnjem dijelu makule. SD optička koherentna tomografija pokazala je subfoveolarnu leziju s hiperefleksivnom komponentom. Mf-ERG pokazuje smanjen centralni odgovor čunjića, a EOG je bio uredan.

### **Zaključak:**

S obzirom na nalaz u makuli i rezultate dijagnostičke obrade smatramo da su makularne lezije vezene uz hemokromatozu jer povećana koncentracije željeza dovodi do poremećaja homeostaze RPE te disfunkcije retine.

### **Title:**

Pseudovitelliform maculopathy associated with hereditary hemochromatosis

### **Authors:**

Vukojević Nenad, Jukić Tomislav, Petriček Igor, Štanfel Marija i Mandić Krešimir

### **Institution:**

Department of ophthalmology, UHC Zagreb

### **Aim:**

The aim is to describe macular changes of a two patients affected by hereditary hemochromatosis caused by C282Y mutation of HFE gen.

### **Patients and methods:**

Ophthalmological findings, retinal imaging and electrodiagnostics demonstrate macular changes

### **Results:**

Fundus photography, fluorescein angiography and fundus autofluorescence showed RPE changes in the central macula. SD-

OCT discovered RPE alterations and submacular lesion with ,hypo and hyperreflexive component. Mf-ERG showed a decrease of cones responses and EOG was normal.

**Conclusion:**

Considering macular findings and diagnostic results, we believe that macular lesions were caused by hemochromatosis because increased iron concentrations lead to RPE homeostasis disorder and retinal dysfunction.

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Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

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Vukojević

## **62. Željana Matutinović Odak**

### **Naslov:**

Akutna Posteriorna Multifokalna Plakoidna Pigmentna Epiteliopatija (APMPPE) – prikaz slučaja

### **Autori:**

Matutinović Odak Ž, Pleština-Borjan I, Vučinović A, Bućan K.

### **Ustanova:**

Klinika za očne bolesti KBC Split

### **Cilj:**

Prikazati iznimno rijetki slučaj akutne posteriorne multifokalne plakoidne pigmentne epiteliopatije, na glasiti važnost ovog rijetkog stanja, prikazati simptome, dijagnostičke i terapijske mogućnosti.

### **Bolesnici i metode:**

31- no godišnji bolesnik, inače zdrav, javio se na Kliniku za očne bolesti zbog pada vida i mrlja pred očima. Pojavi ovih simptoma je prethodila viroza. Bolest se klinički manifestirala multiplim žućkastim lezijama u dubljim slojevima mrežnice koje su nalikovale promjenama u akutnoj posteriornoj multifokalnoj plakoidnoj pigmentnoj epiteliopatiji. Dijagnoza je potvrđena nakon kliničkih, laboratorijskih, imunoloških, radioloških i zaključno angiografskih pretraga.

### **Rezultati:**

Korigirana vidna oštrina pri dolasku je bila 6/9 na desnom i 6/6 na lijevom oku. Pregledom prednjeg segmenta oka nisu uočene nikakve promjene.

Pregled očne pozadine je pokazao žuto-bijele upalne subretinalne lezije na oba oka. Fluoresceinska angiografija pokazala je tipičan nalaz kod ovdne hipoperfuzije, ranu hipofluorescenciju (blokadu) koja odgovara plakoidnim lezijama praćenim ka snim, nepravilnim hiperfluorescentnim bojanjem. OCT makularne regije nije pokazao naznake sub-retinalne tekućine. Analiza krvi pokazala je višu razinu C-reaktivnog proteina (40,2 mg / L). Pacijent nije primio nikakvu terapiju i otpušten je s preporukom za kontrolu za dva tjedna.

### **Zaključak:**

Akutna posteriorna multifokalna plakoidna pigmentna epiteliopatija (APMPPE) je rijetka upalna bolest oka koja pogađa retinalni pigmentni epitel i vanjsku mrežnicu. Obično se javlja u zdravim mladih od raslih osoba. Karakterističan je nagli pad vida sa središnjim i paracentralnim skotomima. Bolest je obično obostrana. Simptomi slični gripi često prethode nastanku bolesti. Pregled očne pozadine tipično pokazuje multifokalne, žućkasto-

bijele, plakoidne lezije, različite veličine, smještene od stražnjeg pola do sredine periferije. Na fluoresceinskoj angiografiji lezije pokazuju ranu hipofluorescenciju i kasnu hiperfluorescenciju. Oporavak vid-a se događa u većini slučajeva u roku od nekoliko mjeseci, ali postoje izvješća i o određenom broju recidiva unutar 6 mjeseci. Postoje neslaganja glede liječenja bolesnika s APMPPE. Jedni autori primjenjuju sustavnu terapiju kortikosteroidima, dok drugi ograničavaju indikacije samo na slučajeve kada je zahvaćena makula. Procjena korisnosti liječenja zahtjevala bi međunarodno ispitivanje koje bi uključilo dovoljan broj bolesnika. Fluoresceinska angiografija je najvažnija metoda u postavljanju ispravne dijagnoze jer nam i drugi sindromi mogu dati sličnu kliničku sliku (White dot sindrom).

**Title:**

Acute Posterior Multifocal Placoid Pigment Epitheliopathy (APMPPE)- case report

**Authors:**

Matutinovic Odak Z, Plestina-Borjan I, Vucinovic A, Bucan K.

**Institution:**

Department of Ophthalmology, University Hospital Centre Split

**Aim:**

To report a very rare case of acute posterior multifocal placoid pigment epitheliopathy, to stress the importance of this rare condition, and demonstrate symptoms, diagnostic work-up and treatment options.

**Patients and methods:**

A 31- year old male patient, with no previous ophthalmologic disease, was referred to the Department of Ophthalmology due to visual impairment and scotoma in both eyes. Symptoms were preceded by a flu-like infection. The clinical course of retinal lesions in both eyes resembled the changes observed in acute posterior multifocal placoid pigment epitheliopathy, multiple inflammatory yellow-white lesions deeper than sensory retina. The diagnosis was confirmed after clinical, laboratory, immunological, viral and fluorescein angiography examinations.

**Results:**

Best corrected visual acuity measured using Snellen chart was 6/9-6/6 in the right and left eye. No remarkable findings or inflammation were observed in the anterior segment of either eye. Fundoscopy revealed yellow-white inflammatory subretinal lesions in the posterior pole of both eyes. Fluorescein angiography showed unique patterns of choroidal hypoperfusion, early hypofluorescence (blockage) corresponding to the placoid lesions followed by late, irregular hyperfluorescent staining. OCT of macular region showed no sub-retinal-fluid. Blood workup demonstrated higher level of C-reactive protein dosage (40.2 mg/L). Patient received no therapy and was discharged with recommendation for two weeks check up.

**Conclusion:**

Acute Posterior Multifocal Placoid Pigment Epitheliopathy (APMPPE) is rare inflammatory eye disease that affects the Retinal Pigment Epithelium and outer retina. Typically it affects healthy young adults. Patients present with a rapid onset of visual disturbance associated with central and paracentral scotomas. The disease is usually bilateral with both eyes involved within a week. Flu-like symptoms often precede the onset of disease. Fundoscopy typically shows multifocal, yellowish- white, placoid lesions, varying in size, located from the posterior pole to the mid-periphery. On fluorescein angiography, the lesions show early hypofluorescence and late hyperfluorescence. Visual recovery happens in most cases within few months but there is also certain number of recurrence within 6 months. To treat patients with APMPPE, or not remains debated. Some authors use systematic corticosteroid therapy, some limit indications to cases with macular involvement. The assessment of the benefits of treatment would probably require an international trial to include enough patients. Fluorescein angiography is the most important method in setting up the correct diagnosis because other entities can give us a similar clinical picture (White dot syndromes).

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Željana

**Ime i prezime / First and Last Name:-Last**

Matutinović Odak

### **63. Ana Vučinović**

#### **Naslov:**

Osobitosti operacije katarakte u vrlo visokoj životnoj dobi

#### **Autori:**

Ana Vučinović; Siniša Skelin; Žana Ljubić; Ivna Pleština Borjan; Kajo Bućan

#### **Ustanova:**

Klinika za očne bolesti- KBC Split

#### **Cilj:**

Utvrđiti poslijeoperacijske ishode operacije katarakte u osoba vrlo visoke životne dobi

#### **Bolesnici i metode:**

: Istraživanje je osmišljeno kao retrospektivna opservacijska studija. Analizirani su podatci svih bolesnika dobi iznad 85 godina operiranih od istog liječnika u Klinici za očne bolesti KBC Split u 2018.g. Ti podatci uspoređeni su s podatcima jednakog broja bolesnika u dobi između 70 i 75 godina operiranih od istog liječnika, s kojima su upareni po komorbiditetima. Svim bolesnicima određena je vidna oštrina prvi poslijeoperacijski dan te su ispunili upitnik o zadovoljstvu obavljenom operacijom. U istraživanje su uključene isključivo operacije bez intraoperacijskih i poslijeoperacijskih komplikacija.

#### **Rezultati:**

Analizirani su podatci za 35 očiju u 35 bolesnika dobi iznad 85 godina, te jednak broj očiju u bolesnika dobi između 70 i 75 godina. U skupini bolesnika iznad 85 godina medijan preoperativne vidne oštchine je 0,1 (SD 0,11) a postoperativne 0,5 (SD 0,27). U skupini bolesnika dobi između 70 i 75 godina medijan prijeoperacijske vidne oštchine je 0,2 (SD 0,12) a poslijeoperacijske 0,6 (SD 0,24). Nema statistički značajne razlike ni u prijeoperacijskoj ni u poslijeoperacijskoj vidnoj oštini između ispitivanih skupina ( $p>0,05$ ). Porast vidne oštchine jednak je u obje skupine ispitanih i iznosi 0,4. U skupini ispitanih iznad 85 godina u 30 bolesnika napravljena je fakoemulzifikacija dok je ekstakapsularna ekstrakcija katarakte napravljena u pet bolesnika, dok je u mlađoj skupini svim bolesnicima napravljena fakoemulzifikacija. U skupini ispitanih iznad 85 godina svi bolesnici izrazili su zadovoljstvo operacijom dok je u skupini bolesnika od 70-75 godina to bio slučaj u 90% pacijenata.

#### **Zaključak:**

Ovim istraživanjem utvrđeno je da iako ne postoji statistički značajna razlika u ispitivanim osobinama, u bolesnika iznad 85 godina postoji jednak visok porast vidne oštchine unatoč nižoj početnoj vidnoj oštini te posljedično i veće zadovoljstvo operacijom.

#### **Title:**

Outcomes of cataract surgery in the very elderly

#### **Authors:**

Ana Vučinović; Siniša Skelin; Žana Ljubić; Ivna Pleština Borjan; Kajo Bućan

#### **Institution:**

Department of Ophthalmology; Clinical Hospital Centre Split; University of Split School of Medicine ; Split; Croatia

**Aim:**

**To evaluate the outcomes of cataract surgery in the very elderly**

Patients and methods:

This is a retrospective study, we analysed the data of all the patients older than 85 years operated during 2018. in our Clinic by the same surgeon. We compared their data to the data of patients aged 70-75 years operated in our Clinic during 2018. by the same surgeon. The two groups of patients were equal based on comorbidities, which were ARMD, PEX, glaucoma and diabetic retinopathy. We measured visual acuity on the first postoperative day and all the patients filled out a patient satisfaction questionnaire. Only uneventful surgeries were included in the study.

**Results:**

There were 35 eyes of 35 patients in either group. In the over 85 years group preoperative visual acuity median was 0,1 (SD 0,11) and postoperative 0,5 (SD 0,27). In the 70-75 years group preoperative visual acuity median was 0,2 (SD 0,12) and postoperative 0,6 (SD 0,24). There was no statistically significant difference neither in preoperative nor in post operative visual acuity between two groups ( $p>0,05$ ). Visual acuity gain was equal in both groups and it amounts to 0,4. In the older group of patients 30 patients underwent phacoemulsification and 5 patients underwent ECC E. In the younger group of patients all the patients underwent phacoemulsification. In the older group of patients all the patients expressed they were satisfied with treatment while in the younger group the patient satisfaction amounted to 90%.

**Conclusion:**

Although there was no statistically significant difference in visual acuity we noticed that the visual acuity gain in both groups was equal which resulted in great patient satisfaction, especially in the group aged over 85 years. We conclude that cataract surgery is both safe and efficient in the very elderly.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ana

**Ime i prezime / First and Last Name:-Last**

Vučinović

64. Kajo Bućan

Naslov:

## Procjena rizika nastanka senilne makularne degeneracije u Republici Hrvatskoj pomoću STARS upitnika

### Autori:

Kajo Bućan, Nenad Vukojević<sup>1</sup>, Tomislav Jukić<sup>1</sup>, Andrijana Kopić<sup>2</sup>, Ivna Pleština Borjan, Irena Marković, Darko Batistić, Karla Katić, Ivana Barun, Ivona Bućan<sup>3</sup>

Ustanova:

Klinika za očne bolesti KBC Split, Klinika za očne bolesti KBC Zagreb1, Klinika za očne bolesti KB C Osijek2, KBC Split3

## Cili:

rana identifikacija visokorizičnih ispitanika na pojavu senilne makularne degeneracije (SMD).

Bolesnici i metode:

prospektivna, multicentrična, studija na 628 ispitanika, životne dobi iznad 50 godina s negativnom amnezom o bolesti makule i/ili liječenju iste. Ispitivanje je izvršeno pomoću STARS upitnika (ukupno 13 pitanja) za procjenu osobnog rizika za SMD, a u svrhu otkrivanja bolesnika u ranoj fazi SMD. Sustav bodovanja na upitniku izведен je iz prvog uzorka od 12.000 ispitanika u Italiji i validiran u drugom uzorku na više od 6.000 ispitanika u Francuskoj. Kako bi se utvrdilo razlikuju li se skupine ispitanika po riziku za SMD, provedeni su t-

testovi za nezavisne uzorke u slučaju kada je varijabla imala dva odgovora (spol, obiteljska povijest SMD, povijest aterijalne hipertenzije, povijest infarkta miokarda, povijest hiperokolesterolemije, povijest ateroskleroze, operacija katarakte te boja šarenice), te jednosmjerne analize varijance za nezavisne uzorke kada je varijabla imala više od dva odgovora (životna dob, pušački status, ITM, refrakcijske gleske). S obzirom na to da mnoge varijable nisu zadovoljile uvjet homoscedasciteta, korišten je Welchov t-

test, otporan na otklone od jednakosti varijance, a u jednom slučaju na analizu varijance Welchov F-omjer. Za statistički značajne F-omjere izračunati su Tukeyevi post hoc testovi.

### **Rezultati:**

Kao najrelevantniji indikator rizika za SMD pokazala se povijest ateroskleroze, sa srednje do visoko i zraženom veličinom efekta ( $p < 0,001$ ). Provedene analize varijance pokazale su da postoje statistički značajne razlike po izraženosti rizika za SMD za skupine različite dobi ( $F(3,266) = 30,067$ ;  $p < ,001$ ), indeksa tjelesne mase ( $F(2,618) = 12,028$ ;  $p < ,001$ ) te statusa pušenja ( $F(3,264) = 3,510$ ;  $p = ,015$ ). Za refrakcijske greške nisu nađene statistički značajne razlike za razvoj SMD ( $F(3,624) = 0,475$ ;  $p = ,699$ ). Za varijablu starosti je utvrđeno da ispitanici mlađi od 65 godina imaju statistički značajno manji rizik za pojavu SMD prema ispitanicima iznad 65 godina.

### Zaključak:

STARS je jednostavan i dostupan upitnik za samostalnu primjenu, koji pokazuje dobru sposobnost otkrivanja rizika za pojavu SMD. STARS je napravljen na uzorku dvije velike Europske skupine ispitanika, a rezultatima ovog istraživanja dodatno je potvrđene njegova vrijednost, što obvezuje na nastavak ovog multicentričnog ispitivanja u RH.

**Title:**

Risk assessment of age related macular degeneration in the Republic of Croatia using the STARS questionnaire

**Authors:**

Kajo Bućan, Nenad Vukojević1, Tomislav Jukić1, Andrijana Kopić2, Ivna Pleština Borjan, Irena Marković, Darko Batistić, Karla Katić, Ivana Barun, Ivona Bućan3

**Institution:**

Department of Ophthalmology Clinical Hospital Centre Split, Department of Ophthalmology Clinical Hospital Centre Zagreb1, Department of Ophthalmology Clinical Hospital Centre Osijek2, KBC Split 3

**Aim:**

identification of high risk subjects on the occurrence of age related macular degeneration (AMD).

**Patients and methods:**

prospective, multicenter study on 628 subjects with a life span of more than 50 years which have a negative history of macular disease and / or treatment. The study was conducted using a STARS questionnaire (a total of 13 questions) for the personal risk assessment for AMD and for the purpose of the early-

stage detection of AMD in patients. The scoring system used in the questionnaire was derived from the first sample of 12,000 examinees in Italy and validated in the second sample on more than 6,000 examinees in France. In order to determine whether AMD risk groups differ, t-

tests for independent samples were performed when the variable had two responses (sex, family history of AMD, history of atherosclerosis, history of myocardial infarction, history of hypercholesterolemia, history of atherosclerosis, cataract surgery and iris color), and one-way variance analysis for independent samples when the variable had more than two responses (life expectancy, smoking status, ITM, refractive error). Given that many variables did not meet the homoscedasticity condition, Welch's t-

test was used, which was resistant to the deflection of equalizing variables, and in one case, for the variable analysis Welch's F-ratio was used(ako sam dobro shvatil). For statistically significant F-ratios, Tukeyev's post hoc assays were calculated.

**Results:**

- the most relevant risk indicator for AMD has been the history of atherosclerosis, ranging from a mean to highly expressed effect size( $p < 0.001$ ). Variance analyzes have shown that there are statistically significant differences by the risk expression of AMD for groups of different ages ( $F (3,266) = 30,067$ ,  $p < .001$ ), body mass index ( $F (2,618) = 12,028$ ,  $p < .001$ ) and smoking status ( $F (3,264) = 3,510$ ;  $p = .015$ ). Refractive errors were not statistically significant differences in the development of AMD ( $F (3,624) = 0,475$ ;  $p = .699$ ). For the age variable, it was discovered that subjects under the age of 65 had statistically significantly lower risk of AMD than the examinees over 65 years of age.

**Conclusion:**

STARS is a simple and accessible self-administration questionnaire that demonstrates a good ability to detect the AMD risk. STARS was made on a sample of two large European group of respondents, and the results of this study further confirm its value, which obliges the continuation of this multicentric study in the Republic of Croatia.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Kajo

**Ime i prezime / First and Last Name:-Last**

Bućan

## **65. Hrvoje Sliepčević**

### **Naslov:**

Prikovan

### **Autori:**

Sliepčević Hrvoje, Zrinščak Ognjen, Zorić-  
Geber Mia, Vatavuk Zoran, Ivezović Renata, Grgić Marko, Ajduk Jakov

### **Ustanova:**

KBC Sestre milosrdnice

### **Cilj:**

Prikaz slučaja 63 godišnjeg pacijenta sa intraorbitalnim stranim tijelom

### **Bolesnici i metode:**

Pacijent dovežen u našu hitnu ambulantu vozilom hitne medicinske pomoći nakon samoranjanjanja pištoljem za šarafe za beton.

### **Rezultati:**

Nakon dijagnostičke obrade (CT mozga i orbita, UZV bulbusa i orbite) kojom se definira veličina stranoga tijela, opseg ozljede i konzilija oftalmologa i otorinolaringologa pristupi se operativnom zahvat u uklanjanja stranoga tijela.

Strano tijelo se uspješno ukloni.

### **Zaključak:**

Pacijentu se uspješno ukloni strano tijelo. Nije došlo do oštećenja struktura sinusa i neurokranija (CT - om dokazano). Pacijent unatoč hematovitreumu desnoga oka samovoljno prekida liječenje, ne pojavljuje se na predviđenim kontrolama očito zadovoljan što nije zadobio po život opasne ozljede te nije za brinut zbog male vidne oštirine na desnome oku.

### **Title:**

Nailed it !

### **Authors:**

Sliepčević Hrvoje, Zrinščak Ognjen, Zorić-  
Geber Mia, Vatavuk Zoran, Ivezović Renata, Grgić Marko, Ajduk Jakov

### **Institution:**

Clinical hospital centre "Sestre milosrdnice"

### **Aim:**

Case report of 63 old patient with the intraorbital foreign body.

### **Patients and methods:**

Patient brought to our clinic by emergency vehicle after he wounded himself with the nailgun.

**Results:**

Operation was performed after diagnostic assessment ( brain and orbital CT, bulbar ultrasonography) which defines size of intraorbital foreign body ,extent of injury and consilium made of ophthalmologist and otorhinolaryngologist. Foreign body is successfully removed.

**Conclusion:**

Extraction of foreign body was successfull. There wasn't any damage to the neurocranium neither the sinuses ( proved by CT) .Patient, despite having vitreous hemorrhage, decided to stop the treatment . He didn't show up on control examinations probably because he was satisfied with the fact that he didn't suffer life threatening injuries. Patient is obviously not concerned with low vision on right eye.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Hrvoje

**Ime i prezime / First and Last Name:-Last**

Slipčević

## **66. Maja Novak-Stroligo**

### **Naslov:**

Orbitalne dermoidne ciste u dojenčadi i djece

### **Autori:**

Maja Novak-Stroligo, Tamara Mišljenović-Vučerić, Zvjezdana Alpeza-Dunato

### **Ustanova:**

Klinika za oftalmologiju, KBC Rijeka

### **Cilj:**

Cilj rada je odrediti potrebnu preoperativnu dijagnostiku, te optimalno vrijeme operativnog zahvata

### **Bolesnici i metode:**

Bolesnici su djeca s orbitalnom cistom, liječena na našoj klinici, prikazana u trogodišnjoj retrospektivnoj studiji.

### **Rezultati:**

U rezultatima ćemo prikazati učestalost dermoidne ciste u dojenčadi i djece, najčešće lokalizacije, potrebnu preoperativnu dijagnostiku, operacijski postupak, recidive i moguće komplikacije.

### **Zaključak:**

U zaključku navodimo koja je preoperativna dijagnostika potrebna kod postavljanja dijagnoze dermoidne ciste, obzirom na mogućnosti komunikacije cista s okolnim šupljinama, te radi diferencijalne dijagnoze prema meningoencefalokeli, mukokeli... Također, pokušali smo odrediti optimalno vrijeme operativnog zahvata obzirom na mogućnost spontane perforacije i drugih komplikacija.

### **Title:**

Orbital dermoid cysts in infants and children

### **Authors:**

Maja Novak-Stroligo; Tamara Mišljenović-Vučerić; Zvjezdana Alpeza-Dunato

### **Institution:**

Ophthalmology Department; Clinical Hospital Centre Rijeka

### **Aim:**

The aim is to determine the necessary preoperative procedure and the optimal time for the operation

### **Patients and methods:**

Patients are children with orbital cyst, treated at our clinic, in three years retrospective study

### **Results:**

The results will show the frequency of dermoid cyst in infants and children, the most common localization, preoperative diagnosis, surgical procedure, recurrence and possible complications.

**Conclusion:**

We conclude the necessary preoperative assessment of dermoid cyst diagnosis, due to the possibility of cyst communicating with surrounding cavities, and to differentiate it from meningoencephalocele, mucocele...Also, in conclusion we tried to determine the optimum time for surgery, because of possible spontaneous perforation and other complications.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Maja

**Ime i prezime / First and Last Name:-Last**

Novak-Strolić

## **67. Kata Čulina**

### **Naslov:**

Uloga totalne keratometrije u postizanju emetropije

### **Autori:**

K. Čulina, A. Medić, T. Jukić

### **Ustanova:**

Očna poliklinika "Medić, Jukić"

### **Cilj:**

usporedba rezultata refrakcije kod biometrije s totalnom keratometrijom i bez totalne keratometrije na uređaju IOL Master 700

### **Bolesnici i metode:**

u istraživanju su sudjelovali pacijenti predviđeni za operaciju katarakte, te su podijeljeni u 2 grupe: 1. pacijenti bez totalne keratometrije, 2.pacijenti s totalnom keratometrijom. Za grupu 1 podaci su dobiveni retrogradnim analizom, a za grupu 2 podaci su prikupljeni u okviru prospektive studije. Svim pacijentima učinjeni su oftalmološki pregled i biometrija na uređaju IOL Master 700. Svima je učinjena operacija katarakte metodom fakoemulzifikacije i ugradnje IOL u kapsularnu vreću. 1 mjesec nakon operacije učinjena je kontrola refrakcije, te je napravljena statistička analiza i usporedba rezultata između grupe 1 i 2.

### **Rezultati:**

Udio pacijenata čija je postoperativna refrakcija bila unutar sfernog ekvivalenta 0.75 dsph i 0.50 dsph bio je veći kod pacijenata kojima je učinjena biometrija s totalnom keratometrijom.

### **Zaključak:**

za postizanje što preciznijih rezultata refrakcije bitno je uzeti u obzir precizne vrijednosti stražnjeg kornealnog astigmatizma

### **Title:**

The role of total keratometry in achieving emetropy

### **Authors:**

K. Čulina, A. Medić, T. Jukić

### **Institution:**

Eye clinic "Medic, Jukic"

### **Aim:**

comparison of refraction results in biometry with total keratometry and without total keratometry on IOL Master 700

### **Patients and methods:**

The study includes patients enrolled for cataract surgery who were divided into 2 groups: 1. patients without total keratometry, 2. patients with total keratometry. For group 1 data were obtained by retrograde analysis, and for group 2 the data were collected within the prospective study. All patients were subjected to ophthalmic examination and biometry on the IOL Master 700. All cataract surgeries were performed with phacoemulsification and IOL insertion into a capsule bag. One month after the operation refractive control was done, as well as statistical analysis and comparison of the results between group 1 and 2.

**Results:**

The proportion of patients whose postoperative refraction was within the spherical equivalent of 0.75 dsph and 0.50 dsph was greater in patients with biometry with total keratometry.

**Conclusion:**

to achieve the most precise refractive results, it is important to take into account the precise values of the posterior corneal astigmatism

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Kata

**Ime i prezime / First and Last Name:-Last**

Čulina

## **68. Stela Kraštek**

### **Naslov:**

Multidisciplinarni pristup kod bolesnika sa očnim metastazama karcinoma pluća – izazov u dijagnostici i liječenju

### **Autori:**

Kraštek S, Šokac R, Barać J, Vinković M, Jelušić V

### **Ustanova:**

KBC Osijek, Klinika za očne bolesti

### **Cilj:**

Prikaz slučaj 2 pacijenta liječena u našoj ustanovi sa očnim simptomima, i u konačnici otkrivanjem metastatskog tumora oka, kao posljedica karcinoma pluća, te naglašavanje važnosti multidisciplinarnog pristupa u dijagnostici i liječenju.

### **Bolesnici i metode:**

Prikaz slučaja 2 pacijenta liječena u našoj ustanovi u periodu od 2014. do 2015., te 2018. godine, koji su se javili na prvi pregled oftalmologa zbog razvoja očnih simptoma. Pacijent M.Š. u dobi 66 godina, javlja se na pregled u hitnu očnu ambulantu sa simptomima suzenja oka te slabijeg vida na desnom oku. Mjesec dana prije našeg pregleda liječio se po vanjskim oftalmoložima zbog istih simptoma, te po višenog očnog tlaka. Iz anamnestičkih podataka doznaje se da je pacijent početkom 2018. liječen zbog karcinoma pluća, te da je učinjena torakotomija. Kompletним oftalmološkim pregledom se kod pacijenta utvrdi povišeni očni tlak, a pregledom fundusa u midrijazi žučkasta infiltracija žilnice. Pacijent se hospitalizira na našu Kliniku. Dalnjom ultrazvučnom obradom i fluoresceinskom angiografijom postavi se dijagnoza suspektne metastatske tvorbe žilnice, te se pacijent konzilijarno uputi na pregled onkologa, MR mozga i orbita, te se preporuči i PET CT. Onkološki pregled i rezultati preporučene obrade potvrđili su sumnju na metastatski tumor oka, te sekundarizme u kostima. Daljnje liječenje ordinirano je po onkologu, uz redovne oftalmološke kontrole. Pacijent J.Z. u dobi 54 godine javlja se u hitnu očnu ambulantu zbog bljeskova ispred lijevog oka. Iz anamnestičkih podataka doznaje se da je pacijent liječen kemoterapijom zbog karcinoma pluća, te da je od djetinjstva slabovidan na lijevo oko. Kompletnim oftalmološkim pregledom utvrdi se veće točkasto područje sa seroznom ablacijom retine na lijevoj oku, koja se potvrdila i ultrazvučnim pregledom oka. Pacijent je upućen konzilijarno na pregled onkologa, koji predlaže sistemsku kemoterapiju i radioterapiju, no pacijent zbog neodlučnosti odustaje od preporučene terapije. Redovnim oftalmološkim kontrolama, kod pacijenta se utvrdi sekundarni glaukom, kao posljedica pogoršanja osnovne bolesti, te se liječi konzervativnim putem. Zbog progresije bolesti, i tada lošije učinkovitosti kemoterapije pacijent umire nakon 2 godine. Obdukcijom se potvrdi metastatski tumor oka, kao posljedica progresije karcinoma pluća.

### **Rezultati:**

"Prikaz slučaja"

### **Zaključak:**

Metastatski tumori oka su značajan i često neprepoznati klinički problem. Ovim prikazom slučaja, na glašava se važnost detaljnog pristupa u pregledu pacijenta, nužnost detaljne i široke anamneze, široko poznavanje diferencijalnih dijagnoza, te u konačnici na temelju gore navedenog i postavljanje sumnje na vrlo ozbiljnu i potencijalno smrtonosnu bolest. Važno je naglasiti i nužnost multidisciplinarnog pri-

stupa ovakvim pacijentima, tj. suradnju specijalista oftalmologa sa specijalistima radiologije i onkologije, jer se pravovremenim prepoznavanjem omogućuje i rana adekvatna terapija koja nudi nadu za očuvanje vida i poboljšanje kvalitete života.

**Title:**

Multidisciplinary approach for patients with ocular metastasis of lung cancer - challenge in diagnostics and treatment

**Authors:**

Kraštek S, Šokac R, Barać J, Vinković M, Jelušić V

**Institution:**

University Hospital Centre Osijek, Ophthalmology Clinic

**Aim:**

Case report of two patient admitted to our hospital ,with eye symptoms, and detection of ocular metastasis of lung cancer, as well as emphasising the importance of multidisciplinary approach in diagnostics and treatment.

**Patients and methods:**

Case report of two patients admitted to our hospital in the period 2014-2015 and 2018 for further diagnostics and treatment after developing eye symptoms. M.Š. a 66 year old male patient complained of weakend vision, and watery left eye. A month prior to our ophthalmological examination, the patient was examined and treated by other ophthalmological specialists for same symptoms and also elevated intraocular pressure. By taking general patient history it was revealed that at the begining of 2018, patient underwent thoracotomy and treatment for lung cancer. Ophthalmological examination revealed increased intraocular pressure, and fundoscopy revealed yellowish choroid infiltration. The patient was admitted to our Clinic, and underwent eye ultrasound examination and fluorescein angiography, and was reffered to oncology specialist. Magnetic resonance of brain and orbit as well as PET CT scan were also recommended. Oncological examination and recommended diagnostics confirmed the diagnosis of ocular metastasis as well as bone secondaries from lung cancer. Further treatment was administered by oncology specialist, with regular ophthalmological follow-ups. J.Z. 54 year old male patient complained of flashes in front of his left eye. Patient history revealed that the patient underwent chemotherapy for lung cancer, as well as amblyopic left eye. Further ophthalmological examination revealed spotted area with serous detachment of the retina in the left eye, which was also confirmed by eye ultrasound examination. The patient was reffered to oncology specialist, who suggested chemotherapy and radiotherapy. However, patient rejected suggested therapy. Regular ophthalmologic follow-ups revealed secondary glaucoma, as a result of primary disease progression, and was treated with conservative approach. Two years after the disease disclosure, patient died as a result of disease progression and poor chemotherapy tolerance. Autopsy confirmed lung cancer with ocular metastasis

**Results:**

"Case report"

**Conclusion:**

Metastatic ocular tumors remain significant and often unrecognized clinical problem. It is of great importance to emphasize that detailed clinical approach in these patients, i.e. taking detailed patient history, broad knowledge in differential diagnosis, alliance and good communication with other specialists,

such as oncology and radiology specialist, provides early, adequate therapy, which gives hope for preserving vision and improving life quality.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

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Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Stela

**Ime i prezime / First and Last Name:-Last**

Kraštek

## **69. Anita Rančić**

### **Naslov:**

Neuronska diferencijacija u ranom razvoju i retinogenezi ljudskog oka

### **Autori:**

Anita Rančić, Natalija Filipović, Ljubo Znaor, Snježana Mardešić, Mirna Saraga-Babić, Katarina Vukojević, Kajo Bućan

### **Ustanova:**

Klinički bolnički centar Split, Klinika za očne bolesti

### **Cilj:**

Razvoj oka je složen i dinamičan proces koji proizlazi iz staničnih međudjelovanja između više različitih struktura, uključujući bočne strane prednjeg mozga, površinski ektoderm i migrirajuće stanice neur alnog grebena koje stvaraju visoko organizirane i specijalizirane strukture oka. Budući da su istraživa nja o ranom razvoju ljudskog oka rijetka, još uvijek je nepoznato kako različite vrste stanica tvore strukture oka, kako se različite stanične linije razlikuju od svojih prekursorskih stanica i koji faktori koordiniraju taj složeni proces.

### **Bolesnici i metode:**

Naša studija istražuje proliferaciju i diferencijaciju matičnih stanica mrežnice prema različitim neuron skim podtipovima tijekom ranog razdoblja razvoja ljudskog oka. Ovdje analiziramo prostorno-vremenski izražaj neuronskih markera nestina, bjelančevine 9,5 (PGP9.5), i kalcij-vezujućeg proteina (S100), čimbenika proliferacije (Ki-67), biljega za primarnu cilijsku (alfa-tubulinsku), i biljega stanične matičnosti oktamer-vezujućeg transkripcijskog čimbenika 4 (Oct-4) u histološkom rezovima ljudskog oka zametaka starosti 5-12 tjedana pomoću imunohistokemije i imunofluorescencije.

### **Rezultati:**

Nestin pokazuje jaku ekspresiju u svim mezenhimskim derivatima, odražavajući nezrelost tih stanica, također je snažno izražen u vanjskom i unutarnjem neuroblastičnom sloju što ukazuje na postojanje ne uralne ishodišne stanice. PGP9.5 kolokalizira s nestinom i S100 u diferencirajućim stanicama unutarnjeg neuroblastičnog sloja. Aktivnost proliferacije Ki-67 čimbenika, a posebno kolokalizacija s nestinom i Oct-4 ukazala je na bazen neuralnih matičnih stanica u cijelom neuroblastičnom sloju. Jaka imunoreaktivnost Oct-4 i alfa-tubulina, koji kolokaliziraju u vanjskom neuroblastičnim sloju, izražena je u budućim fotoreceptorima i sloju ganglijskih stanica. U početku snažna proliferacija se u svim dijelovima oka u razvoju postupno smanjuje, osobito u vanjskom neuroblastičnom sloju.

### **Zaključak:**

Naša studija ukazuje na visoki potencijal proliferacije i diferencijacije ranih stanica mrežnice, koji se smanjuje s napretkom razvoja. Opisana ekspresija istraživanih čimbenika i njihov prostorno-vremenski izražaj podudaraju se s diferencijacijom početno nezrelih stanica u specifične mrežnične stanične linije čiji poremećaj može dovesti do oštećenja vidne funkcije. Pravilna diferencijacija fotoreceptora je od posebnog interesa zbog njihovog sudjelovanja u degenerativnim bolestima mrežnice.

**Title:**

Neuronal differentiation in the early human eye development and retinogenesis

**Authors:**

Anita Rancic, Natalija Filipovic, Ljubo Znaor, Snjezana Mardesic, Mirna Saraga-Babic, Katarina Vukojevic, Kajo Bucan

**Institution:**

University Hospital Centre Split, Department of Ophthalmology

**Aim:**

Eye development is a complex and dynamic process that results from the cellular interactions among a number of different sources, including the wall of the diencephalon, the overlying surface ectoderm, and the migrating neural crest cells which generate highly organized and specialized structures. Since investigations on the early human eye development are sparse, it still remains unknown how different cell types form the eye structures, how different cell lines differentiate from their precursor cells and which factors coordinate that complex process.

**Patients and methods:**

Our study investigates differentiation of the retinal stem cells towards different neuronal subtypes during the critical period of human eye development. Here we analyze the spatiotemporal expression of neuronal markers nestin, protein gene product 9.5 (PGP9.5), and calcium binding protein (S100), proliferation marker (Ki-67), and markers for cilia (alpha-tubulin) and cell stemness marker octamer-binding transcription factor 4 (Oct-4) in histological sections of 5-12 - week human eyes using immunohistochemical and immunofluorescence methods.

**Results:**

Nestin shows strong expression in all mesenchymal derivatives, reflecting the immaturity of these cells, also strongly expressed in the outer and inner neuroblastic layer pointed out the existence of neural stem cells. PGP9.5 co-localized with nestin and S100 in the differentiating cells of inner neuroblastic layer. Ki-67 proliferation activity and particularly co-localization with nestin and Oct-4 showed neural stem cell pool in the entire neuroblastic layer. Strong Oct-4 and alpha-tubulin immunoreactivity, which co-localize in outer neuroblastic and nerve fiber layers, expressed in future photoreceptors and ganglion cell layer. Initially strong proliferation in all parts of the developing eye gradually ceases, especially in the outer neuroblastic layer.

**Conclusion:**

Our study indicates the high proliferation and differentiation potential of early retinal cells, which decreased with advancement of development. The described expression of investigated markers and their spatially and temporally restricted pattern coincides with differentiation of initially immature cells into specific retinal cell lineages which alterations might lead to disturbances of visual function. Proper differentiation of photoreceptors is of special interest because of their involvement in appearance of degenerative retinal diseases.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

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**Ime i prezime / First and Last Name:-First**

Anita

**Ime i prezime / First and Last Name:-Last**

Rančić

## **70. Tomislav Vidović**

### **Naslov:**

Akutni optički neuritis u osoba srednje životne dobi.

### **Autori:**

Tomislav Vidović, Tamara Mišljenović Vučerić, Igor Petriček, Branimir Cerovski

### **Ustanova:**

Klinika za očne bolesti Medicinskog fakulteta Sveučilišta u Zagrebu, KBC Zagreb

### **Cilj:**

Prikazati kliničke osobitosti, te rezultate funkcijskih, strukturnih i elektrodijagnostičkih pretraga ispitanika srednje životne dobi s akutnim optičkim neuritisom.

### **Bolesnici i metode:**

Istraživanje uključuje 16 pacijenata s akutnim optičkim neuritisom srednje životne dobi. Srednja vrijeđnost dobi je iznosila 50,1 (48-55).

Istraživanje je uključilo standardni oftalmološki pregled, Octopus 900 perimetriju, test kontrastne osjetljivosti, ispitivanje raspoznavanja boja, vidne evocirane potencijale, MR mozga i orbita, laboratorijsku opservaciju. Svi ispitanici su liječeni pulsnom steroidnom terapijom.

### **Rezultati:**

Akutni optički neuritis se manifestira zamućenjem vida i periokularnom boli u 4 ispitanika, dok se u 12 ispitanika akutni optički neuritis javio bezbolnim zamućenjem vida. Svi ispitanici su imali poremećaj raspoznavanja boja i oštećenje kontrastne osjetljivosti. Edem glave optičkog diska nađen je u 13 ispitnika. Najčešći oblici oštećenja vidnog polja su bili altitudinalni defekt, difuzna depresija mrežnične osjetljivosti i cekocentralni skotom. U većine ispitanika primjetio se oporavak vida nakon pulsne steroidne terapije.

### **Zaključak:**

Iako se akutni optički neuritis uglavnom javlja u osoba mlađe životne dobi, može se manifestirati i u osoba srednje životne dobi. U toj dobi ponekad je teško razlikovati akutni optički neuritis i neareritičku prednju ishemičku optičku neuropatiju zbog preklapanja kliničke slike.

### **Title:**

Acute optic neuritis in middle-aged population.

### **Authors:**

Tomislav Vidović, Tamara Mišljenović Vučerić, Igor Petriček, Branimir Cerovski

### **Institution:**

Clinical Hospital Center Zagreb, Department of ophthalmology, School of medicine, University of Zagreb

### **Aim:**

To show the clinical characteristics and results of functional, structural and electrodiagnostic tests in middle-aged patients with acute optic neuritis.

**Patients and methods:**

The study included 16 patients with acute optic neuritis. The mean age of onset was 50,1 (range 48-55). Every patients underwent a standard ophthalmological examination, Octopus 900 perimetry, contrast sensitivity test, color vision test, visual evoked potentials, MR brain and orbit, laboratory observation. All subjects were treated with pulse steroid therapy.

**Results:**

In 5 patients acute optic neuritis was presented with visual loss and periocular pain. 11 subjects had painless blurred vision. All subjects had color vision impairment and reduced contrast sensitivity. Optic disc oedema was found in 13 patients. The most common forms of visual field defects were altitudinal defect, diffuse depression of retinal sensitivity, and coeco - central scotomas. Most patients had recovery of visual function after pulse steroid therapy.

**Conclusion:**

Although acute optic neuritis usually occurs in younger people, it could affect middle-aged population. At that age, it may be difficult to differentiate between acute optic neuritis and non arteritic anterior ischemic optic neuropathy due to overlapping signs.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

Titula / Title:

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Tomislav

**Ime i prezime / First and Last Name:-Last**

Vidović

## **71. Boško Jakšić**

### **Naslov:**

Postoperativni makularni skotomi uzrokovani ljuštenjem epiretinalnih membrana i ILM-a.

### **Autori:**

Jakšić B, Bašić A, Boras A, Znaor Lj.

### **Ustanova:**

Klinika za očne bolesti, KBC Split

### **Cilj:**

Cilj ovog istraživanja je utvrditi nastaju li postoperativni skotomi ljuštenjem epiretinalnih membrana i ILM-a.

### **Bolesnici i metode:**

U istraživanje je uključeno 23 bolesnika koji su 2018. godine bili liječeni u Klinici za očne bolesti, KBC Split, od čega je 11 bolesnika operirano zbog makularne rupture, a 12 bolesnika zbog epiretinalne membrane. Bolesnici su bili podvrgnuti vitrektomiji uz ljuštenje membrana i insuflaciju plina SF6 u vitrealni prostor, a bili su praćeni kroz minimalno 3 mjeseca nakon operacije. Usporedili smo ispadce centralnog vidnog polja (Octopus 101 – Program 32) s defektima strukture slojeva mrežnice na OCT-u (s posebnom pažnjom na novonastale defekte IS/OS linije). Također smo pratili intraokularni tlak te najbolje korigiranu vidnu oštrinu.

### **Rezultati:**

U 11 (47,82 %) bolesnika je poslije operacije otkriven novonastali poremećaj strukture mrežnice. U 6 (54,54 %) bolesnika s novonastalim defektom retinalne strukture, defekt je bio povezan sa skotomom u vidnom polju. Najbolje korigirana vidna oštrina poboljšala se prosječno za 2,3 reda. Ni kod jednog pacijenta nije zabilježen porast intraokularnog tlaka.

### **Zaključak:**

Utvrđena je statistički značajna povezanost postoperativnih skotoma centralnog vidnog polja i defekata retinalne strukture uzrokovanih ljuštenjem epiretinalnih membrana i ILM-a. Primjećen je vrlo dobar sigurnosni profil operacije uz rijetke postoperativne komplikacije.

### **Title:**

Postoperative macular scotomas caused by the epiretinal membrane and ILM peeling.

### **Authors:**

Jaksic B, Basic A, Boras A, Znaor Lj.

### **Institution:**

Department of Ophthalmology, University Hospital Centre Split

### **Aim:**

The aim of this study was to determine whether postoperative scotomas are caused by the epiretinal membrane and ILM peeling.

## **Patients and methods:**

23 patients, who were treated during 2018. at the Department of Ophthalmology, University Hospital Centre Split, were included in the study. 11 patients had been diagnosed with a macular hole and 12 patients with an epiretinal membrane. Patients were treated with vitrectomy + membrane peel + injection of gas SF6 into the vitreous cavity, with a follow up for a minimum of 3 months. Central visual field defects (assessed by Octopus 101 – Program 32) and defects of intra-retinal layers assessed by OCT (with a special attention to the IS/OS layer) were compared. Intraocular pressure and best corrected visual acuity were also measured.

## **Results:**

In 11 patients (47.82%), a new retinal structure disruption was detected after the surgery. In 6 patients (54.54%), the newly created retinal structure disruption was associated with a macular scotoma. The best corrected visual acuity improved on average by 2.3 lines. There were no patients with elevated intraocular pressure.

## **Conclusion:**

A statistically significant association of postoperative macular scotomas and defects of the retinal structure caused by the epiretinal membrane and ILM peeling was detected. A very good safety profile of performed surgery was observed, with rare postoperative complications.

## **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Boško

**Ime i prezime / First and Last Name:-Last**

Jakšić

## **72. Ana Cvetko**

### **Naslov:**

Pediatric medulloblastoma

### **Autori:**

Ana Cvetko MD , Brigita Cvetko MD

### **Ustanova:**

General Hospital Ptuj

### **Cilj:**

Case report of a 9-year old boy with medulloblastoma and the importance of an ophthalmologist in diagnosing this condition.

### **Bolesnici i metode:**

Case report

### **Rezultati:**

A 9-year old white male visited an ophthalmologist due to covering his right eye with his hand and edema of the right eyelid. There was no history of any ocular problems. In addition to that, he had been experiencing morning nausea and vomiting for the prior 4 months and was also treated in pediatric department due to those symptoms. Under the care of his pediatrician, the symptoms were thought to be caused by lactose intolerance and GERD. Results of an ophthalmological clinical examination revealed 20/20 vision on both eyes, edema of right eyelid, conjunctival hyperemia, horizontal and rotatory nystagmus along with bilateral concentric narrowing in visual field. An ophthalmologist immediately referred the boy for MRI of the brain, which confirmed the diagnosis of brain tumor. After an immediate suboccipital craniotomy and complete resection of the tumor, diagnosis of medulloblastoma was confirmed. Radiation therapy and chemotherapy followed the procedure. All subsequent MRI examinations showed no evidence of the tumor. Postoperatively, we observed paresis of the n. abducens and n. facialis. Preoperative nystagmus persisted, visual acuity remained 20/20.

### **Zaključek:**

Childhood brain tumors such as medulloblastoma, which present through ocular manifestations that the child cannot precisely define, may stay undiagnosed without suitable ophthalmological examination. The purpose is to highlight the role and importance of an ophthalmologist in the diagnostics of such dangerous condition.

### **Title:**

Pediatric medulloblastoma

### **Authors:**

Ana Cvetko MD , Brigita Cvetko MD

### **Institution:**

General Hospital Ptuj

**Aim:**

Case report of a 9-year old boy with medulloblastoma and the importance of an ophthalmologist in diagnosing this condition.

**Patients and methods:**

Case report

**Results:**

A 9-year old white male visited an ophthalmologist due to covering his right eye with his hand and edema of the right eyelid. There was no history of any ocular problems. In addition to that, he had been experiencing morning nausea and vomiting for the prior 4 months and was also treated in pediatric department due to those symptoms. Under the care of his pediatrician, the symptoms were thought to be caused by lactose intolerance and GERD. Results of an ophthalmological clinical examination revealed 20/20 vision on both eyes, edema of right eyelid, conjunctival hyperemia, horizontal and rotatory nystagmus along with bilateral concentric narrowing in visual field. An ophthalmologist immediately referred the boy for MRI of the brain, which confirmed the diagnosis of brain tumor. After an immediate suboccipital craniotomy and complete resection of the tumor, diagnosis of medulloblastoma was confirmed. Radiation therapy and chemotherapy followed the procedure. All subsequent MRI examinations showed no evidence of the tumor. Postoperatively, we observed paresis of the n. abducens and n. facialis. Preoperative nystagmus persisted, visual acuity remained 20/20.

**Conclusion:**

Childhood brain tumors such as medulloblastoma, which present through ocular manifestations that the child cannot precisely define, may stay undiagnosed without suitable ophthalmological examination. The purpose is to highlight the role and importance of an ophthalmologist in the diagnostics of such dangerous condition.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

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Titula / Title:

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Specijalizant / Resident

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Ana

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Cvetko

### **73. Petra Grubešić**

#### **Naslov:**

Herpes simplex keratitis: klasifikacija i liječenje

#### **Autori:**

Petra Grubešić, Maja Merlak

#### **Ustanova:**

Klinički bolnički centar Rijeka

#### **Cilj:**

Prikazati kako je za ispravno liječenje pacijenata sa HSV keratitisom kritična točna klasifikacija samog keratitisa.

#### **Bolesnici i metode:**

Klasifikacija i liječenje HSV keratitisa rađeno je prema smjernicama Američke akademije za oftalmologiju. Istražiti ćemo ishode liječenja na našim pacijentima u KBC Rijeka

#### **Rezultati:**

Utvrđivanje nomenklature HSV keratitisa i ordiniranje ispravne kombinacije antiviralne i topičke kortikosteoride terapije moguće je izbjegći potencijalne posljedice HSV keratitisa koje mogu ozbiljno narušiti vidnu oštrinu.

#### **Zaključak:**

Herplex simplex virus je čest uzročnik kornealnih oboljenja i vodeći infektivni uzročnik korenalne sljepote. Ispravna klasifikacija je od iznimnog značaja kod odabira ispravne terapije pacijenata sa HSV keratitisom

#### **Title:**

Herpes simplex keratitis:classification and treatment

#### **Authors:**

Petra Grubešić, Maja Merlak

#### **Institution:**

Clinical hospital center Rijeka

#### **Aim:**

To show that proper classification of keratitis is of critical importance in rational and appropriate treatment choice for HSV keratitis patients

#### **Patients and methods:**

Classification and treatment of HSV keratitis is developed from American Academy of Ophthalmology guidelines. We will examine treatment outcomes of our patients in Clinical hospital center Rijeka

#### **Results:**

In establishing proper nomenclature of HSV keratitis and choosing the correct combination of antiviral and topical corticosteroid therapy potential sight-threatening sequelae of HSV keratitis can be avoided.

**Conclusion:**

: Herpes simplex virus is a common cause of corneal disease and the leading infectious cause of corneal blindness among developed nations. Proper classification is of paramount importance when choosing appropriate treatment options for HSV keratitis patients.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

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Petra

**Ime i prezime / First and Last Name:-Last**

Grubešić

## **74. Ivan Merdžo**

### **Naslov:**

Korioretinitis - dijagnostički i terapijski izazovi u bolesnika koinficiranih toksoplazmom i bartonelom

### **Autori:**

Ivan Merdžo, Antonio Sesar, Ivan Ćavar, Anita Pušić Sesar, Filip Gunarić, Irena Sesar

### **Ustanova:**

Sveučilišna Klinička bolnica Mostar; Medicinski fakultet Sveučilišta u Mostaru; Mostar, Bosna i Hercegovina

### **Cilj:**

Prikazati slučaj korioretinitisa desnog oka nejasne etiologije u pacijenta s anamnezom prijašnjeg koriorretinisa u drugom oku.

### **Bolesnici i metode:**

Dječak u dobi od šesnaest (16) godina javlja se zbog zamagljenog vida na desnom oku s prethodno dokumentiranom značajno smanjenom vidnom oštrinom na lijevom oku od ranog djetinjstva. Metode: Opšte kliničke pregledi od strane oftalmologa, pedijatra, infektologa, kao i sveobuhvatni radiološki i laboratorijski testovi.

### **Rezultati:**

Oftalmološkim pregledom utvrđi se najbolje korigirana vidna oštrina od 0,8 na desnom oku i 0,1 na lijevom oku. Nalaz prednjeg segmenta uredan. Pregledom fundusa desnog oka nalazi se kondenzat vitreusa, parapapilarno žuto-

bijelo upalno retinalno žarište i periferno pigmentirano „satelitsko“ žarište uz perifernu obloženost krvnih žila. U makularnom području lijevog oka se evidentira pigmentirana korioretinalna lezija. Prema dostupnoj medicinskoj dokumentaciji, lezija je najvjerojatnije posljedica okularne toksoplazmoze.

Laboratorijski nalazi bili su negativni na moguće autoimune uzročnike korioretinitisa. Serološki testovi pokazali su porast u titru protutijela na sljedeće mikroorganizme: Bartonella henselae, Bartonella Quintana i Toxoplasma gondii. Porast razine imunoglobulina upućivao je na akutnu infekciju bartonelom i kroničnu infekciju toksoplazmom.

### **Zaključak:**

Koinfekcija različitim mikroorganizmima predstavlja značajan dijagnostički i terapijski problem koji zahtijeva sveobuhvatni pristup kako bi se postigao najbolji klinički ishod.

### **Title:**

Chorioretinitis – diagnostic and therapeutic challenges in patient with Toxoplasma and Bartonella co-infection

### **Authors:**

Ivan Merdžo, Antonio Sesar, Ivan Ćavar, Anita Pušić Sesar, Filip Gunarić, Irena Sesar

### **Institution:**

University Hospital Mostar; University of Mostar School of Medicine; Mostar, Bosnia and Herzegovina

**Aim:**

To present a case of chorioretinitis of uncertain etiology in a patient's right eye with history of chorioretinitis in the fellow eye.

**Patients and methods:**

Sixteen (16) year old male patient presents with blurry vision in his right eye, and previously documented history of severely reduced VA in his left eye since the early childhood. Methods: Extensive clinical examinations were performed by ophthalmologist, pediatrician, and infectious disease specialist as well as comprehensive radiological and laboratory tests.

**Results:**

Ocular examination showed BCVA of 0.8 in the right eye and 0.1 in the left eye. Anterior segment findings were normal. Fundus examination of the right eye revealed vitreous condensation, parapapillary yellow-

white inflammatory focus, and peripheral pigmented "satellite" lesion along with peripheral perivascular sheathing. In the macular area of the left eye, a pigmented chorioretinal lesion was observed. According to available medical history, this lesion was most likely a consequence of ocular toxoplasmosis. Laboratory test were negative regarding possible autoimmune causes of chorioretinitis. Serology tests showed an increase in Bartonella hensalae, Bartonella quintana, and Toxoplasma gondii antibody titers. Elevation of immunoglobulin levels indicated an acute Bartonella infection and a chronic Toxoplasma infection.

**Conclusion:**

Coinfection with different microorganisms presents a significant diagnostic and therapeutic problem which requires comprehensive approach to achieve the best clinical outcome.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

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Specijalizant / Resident

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Ivan

**Ime i prezime / First and Last Name:-Last**

Merdžo

## **75. Andelko Parać**

### **Naslov:**

Evaluacija utjecaja deepitelizacijske tehnike (20% etanol vs. rotirajuća četkica) na vidnu oštinu, kont rastnu osjetljivost i pojavu „haze”-a nakon fotorefraktivne keratektomije (PRK)

### **Autori:**

Andelko Parać, Igor Knezović, Hrvoje Raguž, Lukrecija Levak, Matilda Gegović, Danijel Marinić

### **Ustanova:**

Poliklinika "Knezović", Zagreb

### **Cilj:**

Vrednovanje utjecaja tehnike debridmana epitela rožnice na vidnu oštinu, kontrastnu osjetljivost i poj avu „haze”-a nakon fotorefraktivne keratektomije (PRK)

### **Bolesnici i metode:**

Studija je rađena na 34 pacijenta (68 očiju; prosječna dob 30 +/- 10) kod kojih je na jednom oku epitel odstranjen rotirajućom četkicom, a na drugom 20% otopinom et anola, nakon čega je učinjena fotorefraktivna keratektomija (PRK) istom operativnom tehnikom od str ane istog kirurga.

### **Rezultati:**

Nisu uočene statistički značajne dugoročne razlike u rezultatima vidne oštine i kontrastne osjetljivost i, dok je oporavak bio brži kod očiju operiranih sa rotacijskom četkicom. Pojava „haze”-a bila je učestalija kod očiju u „etanolskoj” grupi.

### **Zaključak:**

Obje metode pokazale su se dobrima u postizanju željene vidne oštine, a kod očiju kod kojih je debri dman epitela rožnice rađen rotirajućom četkicom zabilježena je manja učestalost pojave „haze”-a i brži oporavak.

### **Title:**

Evaluation of the influence of deepithelialization technique (20% ethanol vs. rotating brush) on visual acuity, contrast sensitivity and haze appearance after photorefractive keratectomy (PRK)

### **Authors:**

**Andelko Parać, Igor Knezović, Hrvoje Raguž, Lukrecija Levak, Matilda Gegović, Danijel Mari nić**

### **Institution:**

Poliklinika "Knezović", Zagreb

### **Aim:**

To determine eventual influence of deepithelialization technique on visual acuity, contrast sensitivity, an d haze appearance after photorefractive keratectomy (PRK)

### **Patients and methods:**

Study comprised 34 patients (68 eyes, mean age 30+/- 10) who had epithelial removal performed with rotational surgical brush on one eye and with 20% ethanol solution on the other eye after which PRK surgery was performed with the same surgical procedure and the same surgeon performing the surgery.

### **Results:**

In terms of visual acuity and contrast sensitivity, there was no statistically significant difference in long-term results between two groups. Slightly faster visual recovery was achieved in a group debried with rotational brush. Incidence of haze appearance was higher in “ethanol-assisted” group.

### **Conclusion:**

Both methods have shown good results in terms of achieving targeted visual acuity. Eyes in „rotating brush” group have shown less incidence of haze appearance and faster visual recovery.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Andelko

**Ime i prezime / First and Last Name:-Last**

Parać

## **76. Igor Knezović**

### **Naslov:**

Intraokularne leće s produženim fokusom vida i dubina prednje očne sobice

### **Autori:**

Igor Knezović, Andelko Parać, Hrvoje Raguz, Lukrecija Levak, Matilda Gegović, Danijel Marinić

### **Ustanova:**

Poliklinika Knezović

### **Cilj:**

Istražiti utjecaj vrijednosti dubine prednje očne sobice prije operacije na refraktivni rezultat nakon ob strane fakoemulzifikacije i implantacije intraokularnih leća s produženim fokusom vida.

### **Bolesnici i metode:**

U ovoj retrospektivnoj studiji, promatrani parametri bili su nekorigirana i korigirana vidna oštrina na daljnju, blizinu i srednju udaljenost, nakon obostrane fakoemulzifikacije i ugradnje intraokularnih leća s produženim fokusom vida. U istraživanje je uključeno 30 ljudi (60 očiju) s različitim vrijednostima dubine prednje očne sobice.

### **Rezultati:**

Sve oči bile su unutar 0,75 dpt (sferni ekvivalent) od ciljne refraktivne vrijednosti, dok je 93% očiju bilo unutar 0,50 dpt. U odnosu na vrijednosti dubine prednje očne sobice, određene razlike nakon zahata primjećene su u nekorigiranim vidnim oštrinama na daljinu i blizinu. Nije bilo refrakcijskih poma ka niti decentracije intraokularnih leća tijekom poslijeoperativnog praćenja. Rezultati su prikazani mjesec dana i tri mjeseca nakon učinjenog zahvata.

### **Zaključak:**

Refraktivni rezultati nakon ovakvih operativnih zahvata kao i zadovoljstvo pacijenta, može ovisiti o preoperativnim vrijednostima dubine prednje očne sobice.

### **Title:**

Extended Depth of Focus Intraocular Lenses and anterior chamber depth

### **Authors:**

Igor Knezović, Andelko Parać, Hrvoje Raguz, Lukrecija Levak, Matilda Gegović, Danijel Marinić

### **Institution:**

Poliklinika Knezović

### **Aim:**

To determine the importance of preoperative anterior chamber depth (ACD) to refractive results after phacoemulsification and bilateral Extended Depth of Focus (EDOF) Intraocular Lenses (IOL) implantation.

### **Patients and methods:**

In this retrospective study, the main outcome measures were uncorrected and corrected distance (UDVA and CDVA), intermediate (UIVA and CIVA) and near (UNVA and CNVA) visual acuities, in patients after bilateral phacoemulsification and EDOF IOL implantation. Sixty eyes of 30 patients with different ACD values who underwent surgery were included in this study.

**Results:**

All eyes were within 0,75 dpt (spherical equivalent) from the target refraction, and 93% of eyes were within 0,50 dpt. Differences were noticed in UDVA and UNVA with the regard of ACD values. No significant refractive shift, IOL decentration or tilt occurred during the postoperative course. Outcomes were evaluated at 1 and 3 months after eye surgery.

**Conclusion:**

Refractive outcomes and patient satisfaction rate after a bilateral implantation of EDOF IOL can be depended on preoperative ACD depth.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Igor

**Ime i prezime / First and Last Name:-Last**

Knezović

## **77. Suzana Konjevoda**

### **Naslov:**

Umjetna inteligencija u oftalmologiji

### **Autori:**

Suzana Konjevoda, Samir Čanović, Ana Didović Pavičić, Marija Škara Kolega

### **Ustanova:**

Opća Bolnica Zadar

### **Cilj:**

Prikazati dosadašnja znanja o umjetnoj inteligenciji i njenoj primjeni u oftalmologiji te potencijalnom učinku na dobrobit oftalmoloških – glaukomskih pacijenata.

### **Bolesnici i metode:**

Pretražili smo i analizirali recentnu literaturu u odnosu na oftalmologiju .

### **Rezultati:**

Primjena umjetne inteligencije se uglavnom koncentrira na bolesti s visokom učestalošću, kao što su dijabetička retinopatija (DR), makularna degeneracija povezana s dobi (AMD), glaukom.

### **Zaključak:**

Prema analizi podataka iz dostupnih studija koje su temeljene na strojnom učenju postignuti su zadovoljavajući preliminarni ishodi. Najviše pažnje privlači identifikacija slike ne-proliferativne dijabetičke retinopatije (NPDR), proliferativne dijabetičke retinopatije (PDR) i AMD-a privlači najviše pažnje.

### **Title:**

Artificial intelligence in ophthalmology

### **Authors:**

Suzana Konjevoda, Samir Čanović, Ana Didović Pavičić, Marija Škara Kolega

### **Institution:**

General Hospital Zadar

### **Aim:**

To present an overview of current artificial intelligence methods and their application in ophthalmology and their potential impact on glaucoma patient care.

### **Patients and methods:**

Recent literature search and analysis

### **Results:**

Application of artificial intelligence is concentrated on diseases with high incidence in population (diabetic retinopathy, age related macular degeneration, glaucoma)

**Conclusion:**

Data analysis shows satisfactory results in applicability of artificial intelligence in ophthalmology, especially in early detection of diabetic retinopathy, age related macular degeneration and glaucoma.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA GLAUKOM / Glaucoma section

Titula / Title:

Prof.dr.sc.

**Specijalist / Specialist**

Ime i prezime / First and Last Name:-First

Suzana

**Ime i prezime / First and Last Name:-Last**

Konjevoda

## **78. Maja Vinković**

### **Naslov:**

Promjene na SD OCT-u i OCT angiografiji kod retinitisa uzrokovanih virusom Zapadnog Nila

### **Autori:**

Vinković Maja, Benašić Tvrkta, Kopić Andrijana, Bradvica Mario, Barać Josip

### **Ustanova:**

Klinički bolnički centar Osijek, Klinika za očne bolesti

### **Cilj:**

Prikaz kliničkog tijeka retinitisa uzrokovanih virusom Zapadnog Nila uz pomoć multimodalnih tehničkih prikaza, SD OCT-a i OCT angiografije

### **Bolesnici i metode:**

Prikaz slučaja pacijenta s retinitisom uzrokovanim virusom Zapadnog Nila praćenog multimodalnim slikovnim tehnikama prikaza (kolor foto fundusa, fluoresceinska angiografija, SD OCT, OCT angiografija, MR mozga).

### **Rezultati:**

69 dijabetičar javio se na pregled na našu kliniku zbog nejasnog vida ispred ova oka koji je primijetio 2 tjedna nakon što je otpušten iz druge ustanove gdje je liječen zbog virusnog meningoencefalitisa uzrokovanih virusom Zapadnog Nila. Nakon liječenja suportivnom terapijom, došlo je do poboljšanja pacijentovog općeg stanja. Oftalmološkim pregledom ustanovljen je obostrani retinitis sa zahvaćanjem makule. Vidna oštrina iznosila je 8/200 na desnome (OD) i 4/200 na lijevome oku (OS). Na SD optičkoj koherentnoj tomografiji prikazuju se 2 vrste lezija - "klasična" u vanjskim retinalnim slojevima i intraretinalna lezija. Obje vrste lezija imale su pridruženu disruptiju normalnih vanjskih hiperreflektivnih slojeva na SD OCT-u. Snimke SD OCT-a tijekom 6 mjeseci praćenja pokazale su postupnu rekonstituciju navedenih slojeva, uz postupni oporavak vidne oštine na desnome oku (OD) do 20/60 nakon intravitrealne terapije bevacizumabom.

### **Zaključak:**

Multiple slikovne tehnike prikaza fundusa korištene tijekom obrade pacijenta s retinitisom uzrokovanim virusom Zapadnog Nila konzistentne su s promjenama vanjskih retinalnih slojeva i retinalnog pigmentnog epitela, što upućuje kako su upravo oni primarna mjesta koja su zahvaćena patofiziološkim procesom.

### **Title:**

OCT changes after resolved west Nile retinopathy – case report

### **Authors:**

Vinković Maja, Benašić Tvrkta, Kopić Andrijana, Bradvica Mario, Barać Josip

### **Institution:**

University Hospital Centre Osijek, Department of Ophthalmology

### **Aim:**

To describe the clinical course of foveal West Nile virus (WNV) chorioretinitis with multimodal imaging and longitudinal spectral domain optical coherence tomography (SD-OCT) and OCTA imaging

**Patients and methods:**

Case report. A patient with West Nile virus chorioretinitis was evaluated by color fundus photography, fluorescein angiography, SD OCT, OCTA and brain MRI.

**Results:**

A 69-year-old man with diabetes mellitus presented with decreased vision of both eyes (OU) 2 weeks after being discharged from a local hospital. He had been treated for WNV meningoencephalitis, and he recovered systemically with supportive therapy. Ophthalmic examination revealed WNV chorioretinitis bilaterally, with predominantly foveal involvement. His best corrected visual acuity (BCVA) was 8/200 OD and 4/200 of the left eye (OS). Spectral domain optical coherence tomography revealed 2 distinct lesion types—the “classic” outer retinal lesion and an intraretinal lesion. Both lesions had associated disruption of the normal outer hyperreflective retinal layers on SD-OCT. Longitudinal SD-OCT over the ensuing 6 months revealed a gradual reconstitution of these layers, with BCVA concurrently improving to 20/60 OD after intravitreal bevacizumab therapy.

**Conclusion:**

Multiple fundus imaging modalities used during the diagnosis of West Nile chorioretinitis are consistent with outer retinal and pigment epithelial changes, suggesting outer retina and retinal pigment epithelium as the primary sites of ocular involvement.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA UVEA-u / Uvea section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Maja

**Ime i prezime / First and Last Name:-Last**

Vinković

## **79. Ana Didović Pavičić**

### **Naslov:**

Glijivični chorioretinitis i endoftalmitis

### **Autori:**

Ana Didović Pavičić, Tomislav Jukić, Nenad Vukojević, Samir Čanović, Suzana Konjevoda

### **Ustanova:**

Opća bolnica Zadar, Klinički Bolnički Centar Zagreb

### **Cilj:**

Prikazati mogućnosti liječenja kod gljivičnog chorioretinitis i endoftalmitisa

### **Bolesnici i metode:**

prikaz slučaja

### **Rezultati:**

Prikaz slučaja pacijenta kod kojeg se 10-ak dana prije pregleda javljaju leteće mutnine. Nastupa progresivan pad vidne ostrine sa znakovima pr ednjeg uveitisa, vitritisa I chorioretinitisa. Ne nalazi se znakova sistemske bolesti niti imunodeficijenc ije a radi se o bivsem intravenskom ovisniku. Kod pacijenta je učinjena pars plana vitrektomija sa inst ilacijom amfotericina B sa insuflacijom C3F8 10% ,te je uzet uzorak staklovine za analizu koji je pozitivan na C albicans. Nastavljena je I sistemsko- peroralna terapija vorikonazolom. 6 mjeseci nakon dij agnoze I terapije oko je bez znakova upale a vidna oštrina stabilna.

### **Zaključak:**

Glivični chorioretinitis I endoftalmitis javlja se najčešće kod imunokompromitiranih pacijenata. Rizični su I intravenski ovisnici te bolesnici sa sindromom imunodeficijencije. Najčešći uzročnici su Candida albicans, Aspergillus flavus, Coccidioides immitis and Aspergillus fumigatus.

Endogeni kandida endoftalmitis obično se prezentira sa pojavom boli, smanjenem vidne oštine I mutninama. Tipično se javljaju chorioretinalne lezije sa zamućenjem I upalnom reakcijom priležeće staklovevine. Infekcija se može proširiti I na staklovinu uzrokojući jaču upalnu reakciju te ponekad uzrokova ti I prednji uveitis, skleritis I panuveitis.

### **Title:**

Fungal chorioretinitis and endophthalmitis

### **Authors:**

Ana Didović Pavičić, Tomislav Jukić, Nenad Vukojević, Samir Čanović, Suzana Konjevoda

### **Institution:**

General Hospital Zadar, University Hospital Center Zagreb

### **Aim:**

To present the treatment possibilities in fungal chorioretinitis and endophthalmitis

Patients and methods:

case report

**Results:**

Patient presenting with floaters 10 days before examination. Progressive visual acuity decrease of the right eye with signs of anterior uveitis, vitritis and retinitis.

History of intravenous drug abuse. Patient presented with ocular symptoms alone, no systemic disorders or immunodeficiency.

Patient was referred to a vitreoretinal surgeon, par plana vitrectomy with biopsy C3F8 10% and instillation of amphotericin B was performed. Peroral voriconasol 2x200 mg was prescribed for 2 weeks with topical therapy. Candida albicans was found in the vitreal specimen.

6 months after the diagnosis and treatment visual acuity remained stable with no signs of ocular or extraocular inflammation.

**Conclusion:**

Fungal chorioretinitis and endophthalmitis usually appears in immunocompromised patients. Intravenous drug abusers and those with immunodeficiency syndrome are also at risk. The most common causes are Candida albicans, Aspergillus flavus, Coccidioides immitis and Aspergillus fumigatus.

Presentation of endogenous candida endophthalmitis is usually with ocular pain, decreased vision and floaters. Typical lesions are chorioretinal lesions with overlying vitreous inflammation and haze. Infection can extend to the vitreous and occasionally anterior uveitis, scleritis and panuveitis can occur.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA UVEA-u / Uvea section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ana

**Ime i prezime / First and Last Name:-Last**

Didović Pavičić

## **80. Ivanka Petric Vicković**

### **Naslov:**

Incidencija pseudofaknog cistoidnog makularnog edema u pacijenata s pseudoeksfolijativnim sindromom

### **Autori:**

Petric Vicković I, Vinceković P, Lacmanović Lončar V, Ivezković R, Radmilović M, Vukelić S, Kasumović A, Sušić E, Vatavuk Z

### **Ustanova:**

KBC Sestre milosrdnice

### **Cilj:**

Ispitati incidenciju cistoidnog makularnog edema (CME) nakon operacije katarakte u pacijenata sa pseudoeksfolijativnim sindromom (PEX).

### **Bolesnici i metode:**

Ova prospektivna studija uključivala je 50 očiju sa PEX sindromom i 40 zdravih očiju koji su predstavljali kontrolnu skupinu. U obje grupe pacijenata isključni kriteriji su bili ranja patologija koja bi povećavala rizik za nastanak CME (intraoperativna ruptura kapsule, epiretinalna membrana, uveitis, retinalna venska okluzija, ablacija mrežnice i dijabetes melitus). Svim ispitanicima je odraćen kompletan oftalmološki pregled (nekorigirana vidna oštirina, najbolja korigirana vidna oštirina, mjerjenje intraokularnog tlaka, pregled prednjeg segmenta na biomikroskopu i fundoskopiji) na dan operacije, te postoperativno 7. i 42. dan. Svi ispitanici su kapali topikalnu steroidnu terapiju 4 tjedna postoperativno. Primarna metoda praćenja pacijenata je bila pojavnost CME (povećanje debljine centralnog foveolarnog područja  $>10\%$  i cistične promjene na OCT-u).

### **Rezultati:**

Ukupno 90 očiju (50 sa pseudoeksfolijativnim sindromom i 40 očiju kao kontrolna grupa) je bilo analizirano. Nije dokazana statistički signifikantna razlika između debljine centralnog foveolarnog područja preoperativno u grupi sa PEX sindromom i kontrolnoj grupi pacijenata, te je debljina u obje ispitivane grupe bila normalnih vrijednosti. Incidencija pseudofaknog cistoidnog makularnog edema nakon 6 tjedana bila je veća u pacijenata sa pseudoeksfolijativnim sindromom.

### **Zaključak:**

Pseudofakni cistoidni makularni edem (PCME) se javlja kod pacijenata nakon operacije mrene fakoe multizifikacijom. Pseudoeksfolijativni sindrom povećava rizik nastanka PCME.

### **Title:**

Incidence of pseudophakic cystoid macular edema in patients with pseudoexfoliation syndrome

### **Authors:**

Petric Vicković I, Vinceković P, Lacmanović Lončar V, Ivezković R, Radmilović M, Vukelić S, Kasumović A, Sušić E, Vatavuk Z

### **Institution:**

University hospital Sestre milosrdnice

**Aim:**

To investigate the incidence of cystoide macular edema (CME) after cataract surgery in patients with pseudoexfoliation syndrome (PEX).

**Patients and methods:**

This prospective study included 50 eyes with PEX and 40 eyes of healthy patients as control group. In both groups exclusion criteria were preexisting pathology known to predispose CME (intraoperative capsule rupture, epiretinal membrane, uveitis, retinal vein occlusion, retinal detachment and diabetes melitus). All subjects underwent complete ophthalmic evaluation (UCVA/BCVA, IOP, BMS slit lamp examination and fundoscopy,) on the day of the surgery, and postoperatively at 7 and 42 days. All patients received topical steroid drops for 4 weeks postoperatively. Primary outcome measure was CME (increase in foveal central subfield thickness of >10% and cystic changes on OCT).

**Results:**

– Overall, 90 eyes (50 with pseudoexfoliation syndrome and 40 as control group) were compared. There was no significant difference between preoperative mean foveal central subfield thickness in PEX group and control group, and both were within normal distribution. The incidence of pseudophakic cystoid macular edema after 6 weeks postoperatively was higher in patients with pseudoexfoliation syndrome.

**Conclusion:**

Pseudophakic cystoid macular edema (PCME) occurs after phacoemulsification cataract surgery. The pseudoexfoliative syndrome increases the risk of developing PCME.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ivanka

**Ime i prezime / First and Last Name:-Last**

Petric Vicković

## **81. Sándor Gábor**

### **Naslov:**

Assesment of mechanical resistance of the anterior lens capsule following staining with trypan blue

### **Autori:**

1Gábor L. Sándor MD, PhD; 2,3Zoltán Kiss PhD; 4Zoltán I. Bocskai PhD; 1Gábor Tóth MD, FEBO;  
1,5 Tamás Temesi2; Zoltán Z. Nagy MD, PhD, DSc

### **Ustanova:**

Faculty of Medicine, Semmelweis University, Budapest

### **Cilj:**

To evaluate and compare the mechanical resistance to tear of the anterior capsule opening following trypan blue staining with different concentrations.

### **Bolesnici i metode:**

Fresh porcine eyes were enrolled and divided into 3 groups (n=25 eyes per group). In the Control group the anterior lens capsule was unstained. In the Dye 1 group 0.06% trypan blue, in the Dye 2 group 0.1% trypane blue dye was used to stain the capsule. Following the capsulorhexis, the capsule openings were stretched with a custom-made and 3D-printed, biaxial equipment. The rupture force, the circumference stretching ratio, the force-displacement characteristics and the secant modulus at 10mN and 50mN were evaluated.

### **Rezultati:**

There was no difference for the rupture force (Control group: 108±20 mN, Dye 1 group: 105±32 mN, Dye 2 group: 104±23 mN), and for the circumference stretching ratio (Control group: 148±7 %, Dye 1 group: 148±6 %, Dye 2 group: 150±5 %) between groups ( $p=.8924$  and  $p=.3876$ , one-way ANOVA). The elasticity curves were similar in all groups; they ended suddenly prior to a steep rise in force. There was no difference in the secant modulus at 10 mN (Control group: 13±2 mN/mm, Dye 1 group: 13±2 mN/mm, Dye 2 group: 14±2 mN/mm), and at 50 mN (Control group: 38±6 mN/mm, Dye 1 group: 38±5 mN/mm, Dye 2 group: 39±3 mN/mm) between groups ( $p=.8215$  and  $p=.4184$ , one-way ANOVA).

### **Zaključak:**

According to our results, of these trypan blue concentrations that are routinely used in cataract surgery, neither had an effect on capsulorhexis resistance.

### **Title:**

Assesment of mechanical resistance of the anterior lens capsule following staining with trypan blue

### **Authors:**

1Gábor L. Sándor MD, PhD; 2,3Zoltán Kiss PhD; 4Zoltán I. Bocskai PhD; 1Gábor Tóth MD, FEBO;  
1,5 Tamás Temesi2; Zoltán Z. Nagy MD, PhD, DSc

### **Institution:**

Faculty of Medicine, Semmelweis University, Budapest

**Aim:**

To evaluate and compare the mechanical resistance to tear of the anterior capsule opening following trypan blue staining with different concentrations.

**Patients and methods:**

Fresh porcine eyes were enrolled and divided into 3 groups (n=25 eyes per group). In the Control group the anterior lens capsule was unstained. In the Dye 1 group 0.06% trypan blue, in the Dye 2 group 0.1% trypane blue dye was used to stain the capsule. Following the capsulorhexis, the capsule openings were stretched with a custom-made and 3D-printed, biaxial equipment. The rupture force, the circumference stretching ratio, the force-displacement characteristics and the secant modulus at 10mN and 50mN were evaluated.

**Results:**

There was no difference for the rupture force (Control group: 108±20 mN, Dye 1 group: 105±32 mN, Dye 2 group: 104±23 mN), and for the circumference stretching ratio (Control group: 148±7 %, Dye 1 group: 148±6 %, Dye 2 group: 150±5 %) between groups ( $p=.8924$  and  $p=.3876$ , one-way ANOVA). The elasticity curves were similar in all groups; they ended suddenly prior to a steep rise in force. There was no difference in the secant modulus at 10 mN (Control group: 13±2 mN/mm, Dye 1 group: 13±2 mN/mm, Dye 2 group: 14±2 mN/mm), and at 50 mN (Control group: 38±6 mN/mm, Dye 1 group: 38±5 mN/mm, Dye 2 group: 39±3 mN/mm) between groups ( $p=.8215$  and  $p=.4184$ , one-way ANOVA).

**Conclusion:**

According to our results, of these trypan blue concentrations that are routinely used in cataract surgery, neither had an effect on capsulorhexis resistance.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Sándor

**Ime i prezime / First and Last Name:-Last**

Gábor

## **82. Ivan Jerković**

### **Naslov:**

Spektakularna samopodesiva budućnost

### **Autori:**

Jerković I, Kasumović A, Randelović K, Mihaljević B, Vatavuk Z

### **Ustanova:**

Klinika za očne bolesti, Sveučilišni bolnički centar „Sestre milosrdnice“, Zagreb, Hrvatska

### **Cilj:**

Primarni cilj ove studije je provjeriti subjektivnu kvalitetu vidne oštine i praktičnost uporabe samopodesivih naočala

### **Bolesnici i metode:**

Na 30 pacijenata smo mjerili i uspoređivali vidnu oštirinu monokularno na daljinu i blizinu koristeći E TDRS i Jaeger optotip sa našom ordiniranom dioptrijom te sa Vizzmax samopodesivim naočalama. Također, kroz kratki originalni upitnik smo ocjenjivali i cijelokupni dojam i praktičnost samopodesivih naočala te njihov subjektivni dojam kvalitete vida.

### **Rezultati:**

Svih 30 pacijenata, neovisno o dioptriji, potvrđilo je čišću i bolju vidnu oštirinu sa našom ordinirano m dioprijom u usporedbi sa samopodesivim Vizzmax naočalama. Preciznost u pacijentovom samopodesavanju dioptrije je zadovoljavajuća uz odstupanja +/- 0.50dsph. Kvaliteta naočala, udobnost nošenja kao i dizajn pokazao se kao neadekvatan te tu ostaje doista prostora za napredak.

### **Zaključak:**

Iako su pacijenti bili pozitivno polarizirani zbog ovakvih samopodesivih naočala, sama kvaliteta i krajnji ishod vidne oštine su u ovom trenutku neadekvatni u svakodnevnoj uporabi te ostavljaju puno prostora za napredak

### **Title:**

Spectacular self-adjustable future

### **Authors:**

Jerković I, Kasumović A, Randelović K, Mihaljević B, Vatavuk Z

### **Institution:**

University Department of Ophthalmology, University Hospital Center „Sestre milosrdnice“, Zagreb, Croatia

### **Aim:**

Primary aim of this study is to verify subjective quality of visual acuity and practical use of self-adjustable spectacles

Patients and methods:

With sample of 30 patients we have been measuring and comparing monocular visual acuity for distance and near vision with our prescription and with self-adjustable spectacles „Vizzmax“. The charts used were ETDRS and Jaeger. Additionally, a short original questionnaire was used to assess practical use and general impression of „Vizzmax“ spectacles with patients subjective impression on quality of visual acuity.

### **Results:**

All 30 patients, regardless of dioptery, confirmed sharper and better visual acuity with our prescription compared to self-adjustable spectacles. The precision of patients self adjustment was very good with margin of error of +/- 0.50 sphere. The quality of spectacles, comfort while wearing them and their design showed to be inadequate which leaves much space for improvement.

### **Conclusion:**

Even though the patients were positively polarised because of these self-adjustable spectacles, the sole quality and end visual acuity proved to be, in this moment, inadequate in every day use thus leaving much space for further development.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

### **Ime i prezime / First and Last Name:-First**

Ivan

### **Ime i prezime / First and Last Name:-Last**

Jerkovic

### **83. Vladimira Vučenik**

#### **Naslov:**

Poboljšano pronalaženje i dijagnosticiranje foveomakularne viteliformne distrofije u odraslih upotrebom OCT i OCT- angiografije

#### **Autori:**

Vladimira Vučenik, Izabela Vrtar, Matija Blažeka

#### **Ustanova:**

Županijska bolnica Čakovec

#### **Cilj:**

Usporedba subfovealne koroidalne debljine i gustoće krvnih žila u tri pleksusa (površinski kapilarni pleksus, duboki kapilarni pleksus i koriokapilaris) u očiju s foveomakularnom viteliformnom distrofijom u odraslih (AOFVD), očiju sa senilnom makularnom degeneracijom (SMD) i normalnim očima kod dvije obitelji.

#### **Bolesnici i metode:**

Pet očiju bolesnika s foveomakularnom viteliformnom distrofijom u odraslih (AOFVD) u viteliformnom stadiju, četiri očiju sa suhom formom senilne makularne degeneracije i šest normalnih očiju članova obitelji bolesnika s AOFVD. Učinjen je kompletan oftalmološki pregled kod ispitanika. Mjerili smo makularnu koroidalnu debljinu pomoću SD-OCTa i promatrali smo gustoću krvnih žila u tri pleksusa pomoću 3x3 mm OCT angiografije makule.

#### **Rezultati:**

Subfovealna koroidalna debljina u očiju s foveomakularnom viteliformnom distrofijom u odraslih (AOFVD) je bila deblja u usporedbi s očima sa suhom formom SMD. Nije bilo značajne razlike između očiju s AOFVD i normalnih članova obitelji oboljelih od AOFVD. Na OCT A kod očiju s AOFVD je prisutnost subretinalnog materijala dovela do pomicanja krvnih žila površinskog i dubokog kapilarnog pleksusa te stanjenja koriokapilarisa.

#### **Zaključak:**

Kod očiju s foveomakularnom viteliformnom distrofijom u odraslih (AOFVD) je karakteristično koroidalno zadebljanje u usporedbi s očima bolesnika sa senilnom makularnom degeneracijom. Merenje koroidalne debljine može pomoći u diferencijalnoj dijagnozi između AOFVD i SMD. Kod očiju s AOFVD prikaz OCT angiografije pokazuje manje krvnih žila u površinskom i dubokom kapilarnom pleksusu te koriokapilarisu što može imati značajnu ulogu u patogenezi ili predstavlja posljedicu akumulacije materijala i reapsorpcije u bolesnika s AOFVD.

#### **Title:**

Improved detection and diagnosis of adult-onset foveomacular vitelliform dystrophy (AOFVD) using a combination of OCT and OCT angiography

#### **Authors:**

Vladimira Vučenik, Izabela Vrtar, Matija Blažeka

Institution:

General /county hospital Čakovec

**Aim:**

To compare subfoveal choroidal thickness and vessel density in three plexuses (SCP, DCP and choriocapillaries) in eyes with adult-onset foveomacular vitelliform dystrophy (AOFVD), eyes with AMD and normal eyes in two families.

**Patients and methods:**

Five eyes of patients with AOFVD in vitelliform stage and four eyes with dry AMD and six healthy normal eyes of family members of the patients with AOFVD. All study eyes underwent a comprehensive ophthalmic examination. Macular choroidal thickness was measured using SD-OCT and vessel density was observed in three plexuses (SCP, DCP and choriocapillaries) using 3x3 mm OCT angiography centered on the macula.

**Results:**

Subfoveal choroidal thickness in AOFVD / vitelliform stage/ was thicker compared with that in dry AMD. There was no significant difference between AOFVD and healthy normal eyes of family members of the patients with AOFVD. On OCT-

A few eyes with AOFVD the presence of subretinal material leads to displacement of blood vessels at both the superficial and deep capillary plexuses and rarefaction of the choriocapillaris was also observed.

**Conclusion:**

AOFVD eyes are characterised by subfoveal choroidal thickening compared with eyes of patients with dry AMD. Choroidal thickness measurement could help differentiate the diagnosis between AMD and AOFVD. In eyes with AOFVD OCT-

A showed less blood vessels at the superficial and deep capillary plexuses and the choriocapillaris layer which may play a role in patogenesis or simply represent a consequence of material accumulation and reabsorption in AOFVD.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

VLADIMIRA

**Ime i prezime / First and Last Name:-Last**

VUČENIK

## **84. Krešimir Mandić**

### **Naslov:**

Uklanjanje ostataka staklovine nakon odvajanja stražnje hijaloidne membrane

### **Autori:**

Krešimir Mandić, Marija Štanfel, Nenad Vukojević, Tomislav Jukić

### **Ustanova:**

KBC Zagreb

### **Cilj:**

Cilj ovog postupka je ukloniti zaostalu staklovine i smanjiti neženjenu proliferaciju koja može rezulti rati epiretinalnom membranom ili reablacijom retine.

### **Bolesnici i metode:**

Kod 4 pacijenta sa regmatogenom ablacija mrežnice sa ostacima hijalodne membrane na mrežnici (vitreoshiza) učinjeno je uklanjanje ostataka staklovie sa „krpicom“. Nakon što je sa triamcinolonom potvrđena ablacija stražnje staklovine te je ustanovljen preretinalni ostatak staklovine, kroz 23 G troak ar uvede se na vitrelnoj pinceti „krpica“ te se horizontalnim povlačenjem „krpice“ po mrežnici uklone ostaci staklovine. Kod 3 pacijenta kao postoperativna tamponada korišten je C3F8 plin, a kod 1 pacij enta instilarano je silikonsko ulje.

### **Rezultati:**

3 pacijenta sa regmatogenom ablacija uspješno su operirana metodom PPV uz uklanjanje ostataka staklovine sa „krpicom“ i insuflacijom plina. 3 mjeseca nakon operativnog zahvata imali su priležeću mrežnicu, bez naznaka postojanja epiretinalne membrane. Kod pacijenta kojem je instilirano silikonsko ulje, učinjen je zahvat evakuacije ulja i insuflacije C3F8 plina 5 tjedana nakon primarnog zahvata. Na postoperativnom kontrolnom pregledu 4 mjeseca nakon evakuacije ulja pacijent je imao priležeću retinu, također bez naznaka prisutne epiretinalne membrane.

### **Zaključak:**

Postupak uklanjanja ostataka staklovine uz pomoć "krpice" siguran je i jednostavan manevr kojim bi se mogla smanjiti vjerojatnost reablacije ili formiranje epiretinalne membrane

### **Title:**

Removal of vitreus remnants after posterior vitreal detachment

### **Authors:**

Krešimir Mandić, Marija Štanfel, Nenad Vukojević, Tomislav Jukić

### **Institution:**

KBC Zagreb

### **Aim:**

Aim of this procedure is to remove all vitreous leftovers and minimize unwanted proliferations which may result in epiretinal membrane or redetachment.

### **Patients and methods:**

Process of „vitreous wipe“ was done in patinets with rhegmatogenous retinal detachment with vitreous schisis. After posterior vitreous detachment was confirmed with triamcinolone staining „vitreous wipe“ was preformed on vitreal remainings. Through 23 G troacar „cloath“ was introduced on vitreal for ceps and vitreos leftovers were wiped with horizontal movements. In three patients C3F8 gas was used and in one patient silicone oil was used as postoperative tamponade.

### **Results:**

Three patinets with RRD and vitreoshisis were successfully operated with PPV, „vitreos wipe“ and gas as tamponade. After 3 months of follow up they had attached retina and no signs of epiretinal membrane formation. One patinet had silicone oil tamponade that was removed 5 weeks after initial surgery and replaced with gas tamponade. 4 months after second procedure patinet had attached retina and no signs of epiretinal membrane formation.

### **Conclusion:**

"Vitreous wipe" is simple and easy procedure which could lower incidence of redetachment or epiretinal membrane formation.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Krešimir

**Ime i prezime / First and Last Name:-Last**

Mandić

## **85. András Bálint**

### **Naslov:**

Motion capturing of capsulorhexis forceps

### **Autori:**

András Bálint, Balázs Varsányi, Zsolt Biró

### **Ustanova:**

University of Pécs, Hungary

### **Cilj:**

Elaborating a process to analyze the motion of capsulorhexis forceps during creating capsulorhexis as part of cataract surgery

### **Bolesnici i metode:**

We used motion capturing methods based on techniques known from blockbuster movies

### **Rezultati:**

Five operations performed by experienced surgeon were recorded and implemented successfully according to this process

### **Zaključak:**

Motion capturing the capsulorhexis forceps can efficiently help to understand the use of forceps for beginner surgeons and also to monitor the learning curve of this step of cataract operation. The technique also seems suitable to subsequent examination of actions made during complications and so prevent further difficulties in latter similar situations

### **Title:**

Motion capturing of capsulorhexis forceps

### **Authors:**

András Bálint, Balázs Varsányi, Zsolt Biró

### **Institution:**

University of Pécs, Hungary

### **Aim:**

Elaborating a process to analyze the motion of capsulorhexis forceps during creating capsulorhexis as part of cataract surgery

### **Patients and methods:**

We used motion capturing methods based on techniques known from blockbuster movies

### **Results:**

Five operations performed by experienced surgeon were recorded and implemented successfully according to this process

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**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

András

**Ime i prezime / First and Last Name:-Last**

Bálint

## **86. Suzana Smoljo**

### **Naslov:**

Rezidualni astigmatizam nakon implantacije toričnih intraokularnih leća

### **Autori:**

Smoljo Suzana, Kalauz Miro

### **Ustanova:**

KBC Zagreb

### **Cilj:**

Prikazati utjecaj implantacije toričnih intraokularnih leća na preoperativnu dioptriju i astigmatizam kod pacijenata s kataraktom

### **Bolesnici i metode:**

U ovu retrospektivnu studiju je uključeno 38 pacijenata (50 očiju), operiranih od strane istog operatera. U studiju su uključeni pacijenti koji su imali preoperativni astigmatizam od 1.00 do 3.50 cilindra te su podijeljeni u 5 grupa. Kliničkim pregledom i dijagnostikom su isključeni pacijenti sa kornealnom patologijom, ožiljcima, pterigijem, prethodnim očnim operacijama te retinalnom patologijom. Preoperativno mjesto incizije i pozicija leće je određena upotrebom online IOL kalkulatora. Postoperativni rezultati su zabilježeni 1., 5. i 30. ti dan te je određen konačni ostatni cilindar nakon mjesec dana.

### **Rezultati:**

U periodu od 6 mjeseci 38 pacijenata (50 očiju) je operirano uz ugradnju torične intraokularne leće. Bilateralna implantacija je napravljena kod 14 pacijenata. U prve dvije grupe (25 pacijenata) koji su imali preoperativni astigmatizam od 1.00 do 2.00 nakon mjesec dana nije zabilježen ostatni astigmatizam te je vidna oštrina bila 1.0. U preostale 3 grupe (cilindri od 2.00 do 3.50) ostatni cilindar je bio 0.50, 0.75 te 1.00, gdje veće vrijednosti odgovaraju pacijentima s većim preoperativnim astigmatizmom.

### **Zaključak:**

Kod pacijenata s cilindrom do 2.50 zabilježeni su odlični rezultati nakon implantacije toričnih leća te kod njih imamo indikaciju za ovu vrstu zahvata. Međutim, kod pacijenata s većim preoperativnim cilindrom najčešće su potrebni dodatni zahvati i prilagodba operativne tehnike kako bi se postigla optimálna refrakcija te zadovoljstvo pacijenta.

### **Title:**

Residual astigmatism after toric IOL implantation

### **Authors:**

Smoljo Suzana, Kalauz Miro

### **Institution:**

CHC Zagreb

### **Aim:**

To evaluate the residual astigmatism after toric IOL implantation in patients with cataracts.

**Patients and methods:**

This retrospective study included 38 patients (50 eyes), operated by the same surgeon. Preoperative astigmatism range was from 1.00 to 3.50 cylinders and patients were divided in 5 groups. Through clinical examination and diagnostic methods patients with corneal and retinal pathology or previous ocular surgery were excluded. Preoperative incision location and lens position was defined using online toric IOL calculator. Patients were examined on the 1., 5. and 30. days postoperatively and the final spectacle acceptance was defined.

**Results:**

During period of 6 months 38 patients (50 eyes) were operated with toric intraocular lens implantation. 14 patients had bilateral implantation. First 2 groups (25 patients) which had preoperative cylinder from 1.00 to 2.00 had no residual astigmatism after one month. In other 3 groups (cylinder from 2.00 to 3.50) residual astigmatism was 0.50, 0.75 and 1.00.

**Conclusion:**

Patients with preoperative astigmatism of 2.50 and less had excellent results after toric IOL implantation. Meanwhile, patients with higher preoperative astigmatism values usually needed additional operative procedure.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

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**Ime i prezime / First and Last Name:-First**

Suzana

**Ime i prezime / First and Last Name:-Last**

Smoljo

## **87. Ena Sušić**

### **Naslov:**

Usporedba centralne debljine rožnice mjerene s tri nekontaktna uređaja

### **Autori:**

Susic E, Lacmanovic Loncar V, Petric Vickovic I, Krolo I, Radman I, Vatavuk Z

### **Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska

### **Cilj:**

Cilj ove studije je usporedba mjera centralne debljine rožnice izmjerene s tri nekontaktna uređaja na zdravim očima.

### **Bolesnici i metode:**

Četrdeset tri zdrava oka kod dvadeset tri pacijenta izmjerena su uzastopno tri puta na svakom uređaju od strane istog ispitivača. CCT je mjerjen koristeći visokorezolucijsku rotirajuću Scheimpflug kameru (Pentacam, Oculus, Njemačka), spectral-domain optičku koherentnu tomografiju s modulom za prednji segment (AS-OCT) (AngioVue, Optovue) i spekularni mikroskop (Tomey EM-4000).

### **Rezultati:**

Srednja vrijednost CCT-a za rotirajuću Scheimpflug kameru je 547,4454 µm, za optičku koherentnu tomografiju s modulom za prednji segment je 537,6752 µm te 534,3363 µm za spekularni mikroskop.

### **Zaključak:**

Rotirajuća Scheimpflug kamera pokazuje veće vrijednosti CCT-a uspoređujući ih s vrijednostima dobivene na AS-OCT-u i spekularnom mukroskopu. Uzimajući u obzir razlike u srednjim vrijednostima i rasponu varijacija u vrijednostima.

### **Title:**

Comparison of central corneal thickness with three noncontact devices

### **Authors:**

Susic E, Lacmanovic Loncar V, Petric Vickovic I, Krolo I, Radman I, Vatavuk Z

### **Institution:**

University Department of Ophthalmology, University Hospital Center Sestre milosrdnice, Zagreb, Croatia

### **Aim:**

The aim of this study is to compare central corneal thickness (CCT) measurements of three noncontact devices in healthy eyes.

### **Patients and methods:**

Forty three healthy eyes of twenty three patients underwent three consecutive scans on each device by a single examiner. CCT was measured using high resolution rotating Scheimpflug camera system (Pentacam, Oculus, Germany), spectral-domain optical coherence tomography with an anterior segment modul (AS-OCT) (AngioVue, Optovue) and specular microscope (Tomey EM-4000).

**Results:**

Mean CCT measurements were 547,4454 µm for rotating Scheimpflug camera system, 537,6752 µm for optical coherence tomography with an anterior segment modul and 534,3363 µm for specular microscope.

**Conclusion:**

Rotating Scheimpflug camera system overestimates CCT measurements compared to AS-OCT and specular microscope. Given mean differences and range variations in CCT measurements between devices, AS-OCT and specular microscope are interchangeable.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ena

**Ime i prezime / First and Last Name:-Last**

Sušić

## **88. Tomislav Jukić**

### **Naslov:**

Liječenje regmatogene retinalne ablacija s i bez perfluorona

### **Autori:**

Jukić T, Vukojević N, Štanfel M, Mandić K

### **Ustanova:**

Klinika za očne bolesti MF Sveučilišta u Zagrebu, KBC Zagreb

### **Cilj:**

analizirati rezultate liječenja regmatogene retinalne ablacija s i bez intraoperativne upotrebe perfluorona.

### **Bolesnici i metode:**

Dvadeset ( 20) bolesnika s regmatogenom retinalnom ablacijom je operirano standardnom PPV-tehnikom od strane jednog operatera. Podijeljeni su u dvije skupine po 10 bolesnika ovisno o intraoperativnoj upotretbi perfluorona / sa i bez/. Analiziran je OCT /CMT) nalaz mjesec dana nakon operacije.

### **Rezultati:**

Rezultati će u cijelosti biti prikazani na kongresu, no preliminarni ukazuju da liječenje regmatogene retinalne ablacijs s perfluronom ima statistički značajno manje vrijednosti CMT/OCT u odnosu na liječenje bez perfluorona kod "macula off" ablacija dok kod "macula on" nema statistički značajne razlike.

### **Zaključak:**

Obzirom na analizirane vrijednosti CMT/ OCT nakon liječenja regmatogene retinalne ablacijs rezultati ove male klničke studije ukazuju da je potrebno intraoperativno koristiti perfluoron kod "macula off" ablacija.

### **Title:**

Treatment of retinal detachment with or without perfluon liquid

### **Authors:**

Jukić T, Vukojević N, Štanfel M, Mandić K

### **Institution:**

Dpt. of Ophthalmology, University Hospital Center Zagreb,

### **Aim:**

-

### **Patients and methods:**

-

### **Results:**

**Conclusion:**

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tomislav

**Ime i prezime / First and Last Name:-Last**

Jukić

## **89. Snježana Vukelić**

### **Naslov:**

Odnos između peripapilarne vaskularne gustoće i srednje osjetljivosti vidnog polja kod glaukoma u različitim stadijima bolesti

### **Autori:**

Vukelić S, Novak Lauš K, Kasumović A, Križ T, Zorić Geber M, Vatavuk Z

### **Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska

### **Cilj:**

Ispitati postoji li povezanost između gustoće peripapilarne vaskularne mreže procjenjene optičkom koherentnom tomografskom angiografijom i srednjom osjetljivošću vidnog polja u različitim stadijima glaukoma.

### **Bolesnici i metode:**

Mikrovaskularne slike i debljine sloja peripapilarnih živčanih vlakana mrežnice dobivene su upotrebo m Angiovue / RTVue-

XR u 60 ispitanika s glaukom. Peripapilarna vaskularna gustoća mjerena je na različitim prostornim lokacijama prema AngloVue Analytics programu. Vidno polje je izvođeno na Octopus 900 uređaju.

Regionalne gustoće vaskulature nasuprot srednjoj osjetljivosti vidnog polja procijenjene su u odvojenim skupinama bolesnika u blagoj i umjerenoj do naprednoj fazi glaukoma.

### **Rezultati:**

Gustoća peripapilarnih krvnih žila bila je značajno povezana s odgovarajućom osjetljivošću vidnog polja u svim fazama glaukoma ( $p<0.5$ ).

### **Zaključak:**

Regionalna gustoća peripapilarne vaskularne mreže mjerena optičkom koherentnom tomografskom angiografijom značajno je povezana s odgovarajućom srednjom osjetljivošću vidnog polja kod umjerenog do naprednog glaukoma.

### **Title:**

Relationship between peripapillary vascular density and visual field sensitivity in glaucoma according to disease severity

### **Authors:**

Vukelić S, Novak Lauš K, Kasumović A, Križ T, Zorić Geber M, Vatavuk Z

### **Institution:**

University Department of Ophtalmology, University Hospital Center Sestre milosrdnice, Zagreb, Croatia

### **Aim:**

To study whether there is relationship between peripapillary vascular density assessed by optical coherence tomography angiography and visual field mean sensitivity ad different glaucoma stages

**Patients and methods:**

Microvascular images and peripapillary retinal nerve fibre layer thicknesses were obtained using AngioVue/RTVue-

XR in 60 glaucoma subjects. The peripapillary density was measured at various spatial locations according to the AngioVue Analytics. Visual field was performed on Octopus 900. Regional vasculature function relationships was assessed in separate patient groups at mild and moderate to advanced stages of glaucoma.

**Results:**

The peripapillary vascular density were significantly associated with corresponding visual field mean sensitivity in every stages of glaucoma ( $p<0.5$ ).

**Conclusion:**

Regional peripapillary vascular density measured by optical coherence tomography angiography was significantly associated with corresponding visual field mean sensitivity in moderate to advanced glaucoma.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Snježana

**Ime i prezime / First and Last Name:-Last**

Vukelić

## **90. Sonja Jandroković**

### **Naslov:**

Značaj analize sloja živčanih vlakana mrežnice i parametara glave vidnog živca u bolesnika s eksfolijativnim glaukomom snimljenih OCT-om

### **Autori:**

Sonja Jandroković, Smiljka Popović Suić, Ivan Škegro, Josip Knežević

### **Ustanova:**

KBC Zagreb

### **Cilj:**

Analizirati i usporediti parametre strukture vidnog živca zabilježene optičkom koherentnom tomografijom u bolesnika s eksfoliativnim glaukomom (XFG) i kontrolnom skupinom.

### **Bolesnici i metode:**

Istraživanje je bilo prospektivno I provedeno je u Klinici za očne bolesti KBC Zagreb. Obuhvatilo je 61 ispitanika podijeljenih u dvije skupine. U prvoj skupini bilo je 30 ispitanika kontrolnih parametara. U drugoj skupini bio je 31 ispitanik s eksfoliativnim glaukomom. Svi ispitanici su bili stariji od 50 godina. Kod svakog ispitanika bilo je nasumično odabранo jedno oko. U jednostranim slučajevima odrabljano je zahvaćeno oko. Postavljeni su faktori uključivanja i isključivanja za ispitanike obje skupine. Ispitanicima je učinjena optička koherentna tomografija spektralne domene (SOCT Copernicus Opto pol Technology) i vidno polje (Haag Streit Octopus 900 / G program). Dobiveni podaci statistički su analizirani

### **Rezultati:**

Obradili smo podatke dobivene optičkom koherentnom tomografijom na uređaju Copernicus. Rezultati istraživanja pokazali su da XFG uzrokuje strukture promjene na mrežnici i glavi vidnog živca koje se dobro evidentiraju OCT-om. Najveću statističku razliku između skupina pronašli smo u debljini prosječnog RNFL-a (mRNFL) potom RNFL-a gornjeg kvadranta (s RNFL), ali na teamlju ROC krivulja, svi mjereni parametri debljine RNFL-a loših su prediktivnih sposobnosti. Podaci dobiveni analizom ONH također su pokazali statistički značajnu razliku između skupina, ali su podaci boljih prediktivnih sposobnosti. Najbolje metrijske karakteristike pokazuju varijabla udubljenja glave vidnog živca na temalju koje je moguće ispravno klasificirati 75% ispitanika u skupinu XFG.

### **Zaključak:**

Eksfoliativni glaukom je glaukom visokih vrijednosti očnog tlaka, velikih dnevnih fluktuacija i progredirajućeg oštećenja vidnog živca, važno je ustanoviti i kvantificirati promjene u strukturi mrežnice i glave vidnog živca. Temeljem tih podataka moguće je pratiti promjene u strukturi uzrokovane XFG-om. Potrebno je redovito kontrolirati pacijente s rizikom razvoja XFG i snimati OCT vidnog živca. U analizi podataka osobito je važno pratiti stanje i promjene u debljini prosječnog RNFL-a i RNFL-a gornjeg kvadranta, te udubljenja glave vidnog živca.

### **Title:**

## Significance of the Nerve Fibre Layer Analysis and the Optic Nerve Head Parameters in Exfoliative Glaucoma recorded with optical coherence tomography OCT

### **Authors:**

Sonja Jandroković, Smiljka Popović Suić, Ivan Škegro, Josip Knežević

### **Institution:**

KBC Zagreb

### **Aim:**

To analyze and compare the parameters of the visual nerve structure recorded by optical coherent tomography in the patient with exfoliation glaucoma (XFG) and the control group.

### **Patients and methods:**

The research was prospective and was conducted at the Eye Clinic in Clinical Hospital Centre Zagreb. It included 61 subjects divided into two groups. In the first group there were 30 normal subjects of control parameters. In the second group, there were 31 patients with exfoliative glaucoma. All subjects were older than 50 years. Each subject randomly selected one eye. In one-sided cases, the affected eye is selected. Inclusion and exclusion criteria for both groups were set. All subjects underwent Optical coherent tomography (SOCT Copernicus Optopol Technology) and Octopus perimetry for visual field (Haag Streit Octopus 900 / G program). The data obtained were statistically analyzed

### **Results:**

We processed the data obtained with optical coherent tomography on the Copernicus device. The results of the study showed that XFG causes changes in the retina and the nerve head that are well documented by the OCT. The largest statistical difference between the groups was found in the thickness of the mean RNFL (mRNFL) followed by the superior quadrant RNFL (s RNFL), but on the ROC curve, all measured parameters of the RNFL thickness have low diagnostic ability. The data obtained by ONH analysis also showed a statistically significant difference between the groups, but data of better diagnostic abilities. The best diagnostic ability, according to the areas under ROC curve, has cutting of the ONH (ONH cup) and can correctly classify 75% of subjects in the XFG group.

### **Conclusion:**

Exfoliative glaucoma is glaucoma of high intraocular pressure, large daily fluctuations and progressive damage to the optic nerve head. It is important to detect and quantify changes in the retina and the optic nerve head. According to this data, it is possible to monitor structural changes caused by XFG. It is necessary to regularly monitor the patients with the risk of developing XFG and record the OCT of the optic nerve. In the data analysis it is especially important to monitor the condition and changes in the thickness of the mean RNFL and superior RNFL, and the changes of the cup of the ONH.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA GLAUKOM / Glaucoma section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Sonja

**Ime i prezime / First and Last Name:-Last**

Jandroković

## **91. Tvrta Benašić**

### **Naslov:**

Akutna posteriorna multifokalna plakoidna pigmentna epiteliopatija (APMPPE) – moguća klinička slika okularne borelioze

### **Autori:**

Tvrta Benašić<sup>1</sup>, Maja Vinković<sup>1</sup>, Andrijana Kopić<sup>1</sup>, Nenad Vukojević<sup>2</sup>, Krešimir Mandić<sup>2</sup>, Dubravka Biuk<sup>1</sup>

### **Ustanova:**

<sup>1</sup>Klinika za očne bolesti, Medicinski fakultet Osijek, Sveučilište Josipa Jurja Strossmayera u Osijeku

### **Cilj:**

Prikazati slučaj pacijenta s akutnom posteriornom multifokalnom plakoidnom pigmentnom epiteliopatijom (APMPPE) u sklopu infekcije s borelijom Lyme.

### **Bolesnici i metode:**

Šesnaestogodišnji pacijent je bio upućen od pedijatra, zbog naglog pada vidne oštine na desnom oku.

Vidna oština kod dolaska je bila 0,01 po Snellenu. Žalio se i na zatljivu glavobolju unazad nekoliko dana, te navodio ubod nepoznatog kukca s okolnim osipom na koži. Na oba oka na fundusu su se utvrdili znakovi korioretinitisa. Učinjena je bila optička koherentna tomografija (OCT, engl. optical coherence tomography), OCT-angiografija (OCT-A), vidno polje (VP), fluoresceinska angiografija (FA), angiografija indocijanin zelenilom (ICGA, engl. indocyanine green angiography), kompletan laboratorijski, serološki i imunološki obrada, rendgen srca i pluća, magnetska rezonancija (MR) mozga, pregled i konzultacija infektologa i neuropedijatra.

### **Rezultati:**

Postavljena je bila dijagnoza APMPPE i uvedena peroralna terapija metilprednizolonom 0,5 mg/kg tjelesne težine i doksiciklinom 2x100 mg dnevno. Serodijagnostika je pokazala povišene vrijednosti IgM i IgG na Borreliu spp metodom imunoenzimske analize (ELISA, engl. Enzyme Linked Immuno Sorbent Assay), što je bilo potvrđeno western blot analizom. Terapija je dovela do brzog poboljšanja kliničke slike i vidne oštine na 0,75.

### **Zaključak:**

Želimo naglasiti da je u slučaju APMPPE potrebno napraviti kompletan obradu, kako bi se isključile konkomitantne infekcije, a potrebno je posumnjati i na okularnu boreliozu, osobito u slučaju ugriza krpelja ili nepoznatog kukca, čak i kad se pacijenti ne sjećaju ugriza. Ovakav pristup omogućava promptno liječenje APMPPE-a i borelioze kako bi se smanjile okularne ili/i sistemske komplikacije.

### **Title:**

Acute Posterior Multifocal Placoid Pigment Epitheliopathy (APMPPE) - a possible clinical picture of Ocular Borrellosis

### **Authors:**

Tvrta Benašić<sup>1</sup>, Maja Vinković<sup>1</sup>, Andrijana Kopić<sup>1</sup>, Nenad Vukojević<sup>2</sup>, Krešimir Mandić<sup>2</sup>, Dubravka Biuk<sup>1</sup>

**Institution:**

1Eye Clinic, Medical School Osijek, University Josip Juraj Strossmayer Osijek 2Eye Clinic, Medicinski School Zagreb, Zagreb University

**Aim:**

To present a case report of a patient with acute posterior multifocal placoid pigment epitheliopathy (APMPPE) with borreliosis.

**Patients and methods:**

A 16-year-

old male patient was presented with a heavy visual acuity loss on the right eye (BCVA 0.01 on Snelle n chart) and occipital headache in the last few days. He recalled of a bite of an unknown bug and a skin rash around it. Acute chorioretinitis was present bilaterally. Optical coherence tomography (OCT), OCT-angiography (OCTA), visual field (VF), fluorescein angiography (FA), indocyanine green angiography (ICGA), complete laboratory, chest x ray, brain magnetic resonance imaging (MRI), and infectologist and neuropediatric examination and consultation were made.

**Results:**

Diagnose of APMPPE was established and oral therapy induced (methylprednisolone 0.5 mg/kg/day and doxycycline 2x100 mg/day). Elevated titres of IgM and IgG antibodies to Borrelia spp. were found on Enzyme Linked Immuno Sorbent Assay (ELISA) and confirmed by western-blot. A quick restoration of clinical picture and visual acuity up to 0.75 were noticed after induction of therapy.

**Conclusion:**

It is important to emphasize that in the case of APMPPE it is necessary to exclude concomitant infections, especially ocular borreliosis, particularly in the case of a tick or any bug bite, even in cases when patients do not remember the bug bite. In those circumstances the prompt therapy of APMPPE and borreliosis assures proper treatment, which diminishes ocular or systemic complications.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA UVEA-u / Uvea section

Titula / Title:

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tvrta

**Ime i prezime / First and Last Name:-Last**

Benašić

## **92. Sanja Sefić Kasumović**

### **Naslov:**

Procjena retinalnih mikrovaskularnih promjena kod pacijenata sa hroničnom bubrežnom insuficijencijom

### **Autori:**

Sanja Sefić Kasumović, Aida Kasumović, Ines Matoc, Armin Kasumović, Tarik Halimić, Nesina Avdagić, Damir Rebić

### **Ustanova:**

Očna poliklinika "Dr. Sefić"

### **Cilj:**

Zabilježiti promjene građe makule i retinalne kapilarne mreže u makularnoj regiji i peripapilarno kod pacijenata sa hroničnom bubrežnom insuficijencijom (HBI).

### **Bolesnici i metode:**

Ova presječna studija uključivala je 80 očiju pacijenata sa stadijem 2, 3 ili 4 HBI, koji su bili praćeni na Klinici za nefrologiju Kliničkog Centra Univerziteta u Sarajevu. Svi pacijenti su bili podijeljeni na osnovu stadija HBI. Svi pacijenti su bili snimljeni na Avanti RTVue – XR OCT angiografiji (Optovue, Inc, Fremont, California, USA). Praćen je krvni protok retinalnih kapilarnih mreža, te su se automat skim mjerjenjima dobili podaci o veličini foveolarne avaskularne zone (FAZ), FAZ perimetra, fovealnu gustoću kapilara u regiji  $300\text{-}\mu\text{m}$  oko FAZ-a (FD), „nonflow“ područja, indeksa protoka u superficialnom i dubokom kapilarnom pleksusu, protoka u horiokapilarnoj mreži, gustini protoka i o gustoći radikalne peripapilarne kapilarne mreže.

### **Rezultati:**

Poredeći pacijente sa stadijem 2 i 3 HBI, nije se utvrdila statistički značajna razlika u mikrovaskularnim parametrima na OCT angiografiji. Isti rezultat se dobije poredeći pacijente sa stadijima 3 i 4 HBI. Međutim, ukoliko poredimo pacijente sa manje razvijenom HBI (stadij 2) i terminalnom fazom HBI (stadij 4), dobije se signifikantna razlika u vrijednostima sljedećih mikrovaskularnih parametara: FAZ, FAZ perimetar i protok u horiokapilarisu.

### **Zaključak:**

Mnoge studije su pokazale da se praćenjem mikrovaskularnih promjena u različitim slojevima retine, koristeći OCTA, može dobiti jasan uvid u vrijednost sistemske perfuzije. Praćenje retinalnog krvotoka može olakšati pristup i praćenje pacijenata sa HBI, imajući u vidu da su retinalne i bubrežne mikrovaskularne mreže međusobno vrlo slične, kako strukturon, tako i razvojem i funkcijom.

### **Title:**

Assessment of Retinal Microangiopathy in Chronic Kidney Disease Patients

### **Authors:**

Sanja Sefić Kasumović, Aida Kasumović, Ines Matoc, Armin Kasumović, Tarik Halimić, Nesina Avdagić, Damir Rebić

### **Institution:**

## **Eye Polyclinic "Dr. Sefić"**

Aim:

To detect changes of macular structure and retinal vascular meshwork in macular area and peripapillary in patients with chronic kidney disease (CKD).

### **Patients and methods:**

This cross-

sectional study included 80 eyes of patients with chronic kidney disease (CKD) in stage 2,3 or 4, who were followed-

up in Nephrology Clinic of University Clinical Center Sarajevo. All patients were categorized according to the stage of CKD. All patients were scanned by a high-speed 840-nm-wavelength spectral-domain optical coherence tomography instrument (RTVue XR Avanti; Optovue, Inc, Fremont, California, USA). Blood flow was detected using a split-spectrum amplitude-decorrelation angiography algorithm. A fully automated microstructural analysis of the foveal avascular zone (FAZ), FAZ perimeter, foveal vessel density in a 300- $\mu$ m area around the FAZ (FD), nonflow area, flow index in superficial and deep vascular plexus, choriocapillary flow, vascular density, radial peripapillary capillary density was performed.

### **Results:**

When comparing patients with CKD stage 2 and stage 3 there were no statistically significant changes in microvascular parameters on OCT angiography, as well as when comparing patients with CKD stage 3 and stage 4. But in comparison between patients with less developed CKD (stage 2) and terminal CKD (stage 4) there was a significant difference between some microvascular parameters such as FAZ area, FAZ perimeter, choriocapillary flow.

### **Conclusion:**

Many studies demonstrated that evaluation of the microvascular changes in different retinal layers using SS-

OCTA may be considered as a key to assess the systemic perfusion status. Evaluation of retinal microvasculature may ease the management and approach of patients with CKD, having in mind that the retinal and the kidney vascular network are, concerning structure, development and the function, very similar.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Sanja

**Ime i prezime / First and Last Name:-Last**

Sefić Kasumović

### **93. Antonio Kokot**

#### **Naslov:**

Preretinalno krvarenje “Valsalva retinopatija”

#### **Autori:**

Kokot Antonio, Balog Slaven

#### **Ustanova:**

Medicinski fakultet Osijek, Sveučilište J.J.Strossmayera u Osijeku, Hrvatska / Oftalmološka poliklinika dr. Balog, Osijek, Hrvatska

#### **Cilj:**

Opisati potrebu za brzim donošenjem odluka i brzim liječenjem kako bi se zaustavio proces na stražnjem segmentu oka koji bi mogao narušiti normalan vid.

#### **Bolesnici i metode:**

Prikaz slučaja 32 godišnje trudnice koja se pojavila u našoj klinici na pregledu nakon naglog gubitka vida na lijevo oko unazad 2 dana. U drugoj klinici joj je dijagnosticirano preretinalno krvarenje i učinjena je Nd:Yag laser hijeloidotomija s neuspješnim ishodom. Ovo joj je bila prva trudnoća i ne boluje od akutnih ili kroničnih bolesti.

#### **Rezultati:**

Prilikom prvog pregleda najbolja korigirana vidna oštrina na desno oko je bila 1,0, dok je na lijevo oko vidjela samo osjet svjetla. Pregledom pozadine desnog oka nisu uočena patološka zbivanja, dok se p regledom pozadine na lijevom oku nađe masivna kružna kupolasta kolekcija krvi u makuli. Daljnjom obradom učinio se OCT koji pokaže kako se radi od subhijeloidnom krvarenju. Obzirom na toksični u činak željeza i već visoku trudnoću odlučili smo preporučiti u suradnji s ginekologom prijeveremni popravak te nakon toga “pars plana vitrektomiju” s odstranjivanjem krvi iz područja makule. Jedan dan nakon vitrektomije najbolje korigirana vidna oštrina na lijevom oku je 0,6, dok je nakon tjedan dana bila 1,0. OCT nalaz lijevog oka je pokazao normalnu morfološku konfiguraciju makule.

#### **Zaključak:**

Nd:Yag laser hijeloidotomiju kod preretinalnih krvarenja jer potrebno učiniti nekoliko sati od početka procesa, u suprotnom zbog zgrušavanja krvi neće biti moguće učiniti otvor u stražnjoj hijeloidnoj membrani i odstraniti krv. Obzirom na toksični učinak željeza na stanice neuroretine preporučljivo je razmisljati o induciranim porodu (ukoliko nema rizika za dijete u suradnji s ginekologom i neonatologom) i “pars plana vitrektomiji”. Multidisciplinarnim pristupom povećavamo vjerovatnost oporavka vida u maksimalnim granicama.

#### **Title:**

Preretinal hemorrhage “Valsalva retinopathy”

#### **Authors:**

Kokot Antonio, Balog Slaven

#### **Institution:**

Faculty of Medicine, J.J. Strossmayer University of Osijek, Croatia / Private Eye Clinic "dr. Balog", Osijek, Croatia

**Aim:**

To describe the need of acute and fast decision making and treatment to stop sight-threatening condition in posterior segment of the eye.

**Patients and methods:**

A case report of 32-year-old female 32 week pregnant patient who appeared in our clinic for examination after sight-loss on her left eye two days ago. In other clinic she was diagnosed with "preretinal hemorrhage" and unsuccessful Nd:Yag laser hyaloidotomy was performed. This was her first pregnancy without any additional systemic acute or chronic diseases.

**Results:**

In our first examination best corrected visual acuity on right eye was 1.0, while on left eye was HM (hand movement). Fundus examination on right eye showed normal configuration, while we found on left eye in macula massive circular dome-shaped collection of the blood. Further processing was performed by OCT of the left eye posterior pole which showed sub-ILM hemorrhage. Because of the toxic effect of the iron and last weeks of the pregnancy we decided to advise premature labor and pars plana vitrectomy to release and evacuate captured blood. One day after pars plana vitrectomy best corrected visual acuity were 0.6 and after 1 week best corrected visual acuity restored to 1.0. OCT of the left eye showed normal restoration of macula configuration.

**Conclusion:**

Nd:Yag laser hyaloidotomy in preretinal hemorrhage should be performed in few hours after onset, otherwise there is no possibility to make a hole in posterior hyaloid membrane and evacuate blood in vitreal cavity. Because of the toxic effect of the iron on neuroretinal cells it is advised to induce premature labor (if it is possible because of the safety of the baby and advisable by gynecologist and neonatologist) and perform pars plana vitrectomy. By doing that we are increasing chance to restore vision in its full boundaries.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU / Retina section

Titula / Title:

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Antonio

**Ime i prezime / First and Last Name:-Last**

Kokot

## **94. Alexandra Kollárová**

### **Naslov:**

Multidisciplinary approach to the treatment of a patient with an orbital tumour.

### **Autori:**

Kollárová A., Kapitánová K., Slávik R.

### **Ustanova:**

Department of Ophthalmology, Slovak Medical University, Banská Bystrica                          Department of Ophthalmology, University Hospital in Martin                          Department of Maxillofacial Surgery, F.D. Roosevelt Teaching Hospital with polyclinic, Banská Bystrica

### **Cilj:**

To refer a case report of a patient with a sebaceous carcinoma and to present how a multidisciplinary approach is necessary while treating a patient with an orbital tumour.

### **Bolesnici i metode:**

The presentation of 53-year-old patient with a malignant tumour of the right orbit with proven histological type of sebaceous carcinoma. Surgical removal of the orbital tumour was performed based on diagnostics.

### **Rezultati:**

In management of our patient with a sebaceous carcinoma of stage T3 we used a multidisciplinary approach. Ophthalmologists performed diagnosis and biopsy, status evaluation - tumour progression, upper eyelid infiltration, bulging, compression, ocular muscle infiltration, double vision. Maxillofacial surgeons performed orbital exenteration with resection of the medial wall and the orbit ceiling, reconstruction of the free lobe from the forearm.

### **Zaključak:**

The multidisciplinary approach with the involvement of ophthalmologists, maxillofacial surgeons and neurosurgeons in order to achieve the best possible effect of treating a patient with an orbital tumour is inevitable.

### **Title:**

Multidisciplinary approach to the treatment of a patient with an orbital tumour.

### **Authors:**

Kollárová A., Kapitánová K., Slávik R.

### **Institution:**

Department of Ophthalmology, Slovak Medical University, Banská Bystrica                          Department of Ophthalmology, University Hospital in Martin                          Department of Maxillofacial Surgery, F.D. Roosevelt Teaching Hospital with polyclinic, Banská Bystrica

### **Aim:**

To refer a case report of a patient with a sebaceous carcinoma and to present how a multidisciplinary approach is necessary while treating a patient with an orbital tumour.

**Patients and methods:**

The presentation of 53-year-old patient with a malignant tumour of the right orbit with proven histological type of sebaceous carcinoma. Surgical removal of the orbital tumour was performed based on diagnostics.

**Results:**

In management of our patient with a sebaceous carcinoma of stage T3 we used a multidisciplinary approach. Ophthalmologists performed diagnosis and biopsy, status evaluation - tumour progression, upper eyelid infiltration, bulb bulging, compression, ocular muscle infiltration, double vision. Maxillofacial surgeons performed orbital exenteration with resection of the medial wall and the orbit ceiling, reconstruction of the free lobe from the forearm.

**Conclusion:**

The multidisciplinary approach with the involvement of ophthalmologists, maxillofacial surgeons and neurosurgeons in order to achieve the best possible effect of treating a patient with an orbital tumour is inevitable.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Alexandra

**Ime i prezime / First and Last Name:-Last**

Kollárová

## **95. Jelena Petrinović Dorešić**

### **Naslov:**

Praćenje i liječenje retinoblastoma u Hrvatskoj - gdje smo?

### **Autori:**

Jelena Petrinović Dorešić, Mirjana Bjeloš, Edita Kondža Krstonijević, Jasmina Stepan Giljević\*

### **Ustanova:**

Klinika za očne bolesti, Klinička bolnica Sveti Duh Zagreb; \* Klinika za dječje bolesti Zagreb

### **Cilj:**

Retinoblastom je najčešći maligni tumor dječjeg oka. Ekstrapolacijom zabilježene incidencije retinoblastoma u svijetu koja se kreće od 1 u 15.000 do 18.000 djece, u Hrvatskoj se može očekivati godišnje 2 - 3 nova slučaja. Napredak u liječenju retinoblastoma u posljednjem desetljeću je doveo do značajnog poboljšanja preživljavanja djece, ali i smanjenja komorbiditeta i invaliditeta. Cilj ovog rada je prikazati malu seriju od tri recentna konzervativna slučaja bilateralnih retinoblastoma, mogućnosti dijagnostike i liječenja u Hrvatskoj, te suradnju s inozemnim stručnjacima.

### **Bolesnici i metode:**

Kod tri dječaka u dobi od 3, 10 i 6 mjeseci postavljena je sumnja na intraokularne tumore. Kod dva dječaka je bolest slučajno otkrivena magnetskom rezonancom učinjenom iz drugih razloga (analiza strukture mozga u sklopu neuroradiološke obrade), dok su kod najmlađeg roditelji zamijetili povremeni bijeli odbljesak iz desnog oka. Kod sve troje djece učinjen je kompletni pregled u anesteziji (tonometrija, pahimetrija, goniskopija, biomikroskopija, indirektna oftalmoskopija s indentacijom, ultrazvuk oka i orbite, foto/videodokumentacija, te kod posljednjeg i ultrazvučna biomikroskopija). U sve troje djece odmah je započeta sustavna kombinirana kemoterapija (VCE protokol - vinkristin, etopozid i karboplatin) na Klinici za dječje bolesti u Zagrebu. Pregledi u anesteziji u našoj ustanovi su ponavljani najčešće prije početka sljedećeg ciklusa kemoterapije. Praćene su i dokumentirane ultrazvučne dimenzije tumora, provodena je krioterapija dostupnih tumora, pre-kemo-krioterapija te laserska fotokoagulacija oko solitarnih tumora. Na Klinici u Grazu u Austriji je kod prvog dječaka prije petog ciklusa sustavne kemoterapije, uz krioterapiju, učinjena i transpupilarna termoterapija novonastalih tumora. Kod sve djece učinjena je i molekularna genetska analiza. Zbog nemogućnosti provođenja transpupilarne termoterapije i intraarterijske kemoterapije, svoje troje djece je upućen o na daljnje liječenje na Kliniku Jules Gonin u Lausanni u Švicarskoj.

### **Rezultati:**

U sve troje djece, prvim pregledom u anesteziji potvrđeno je postojanje obostranih tumora s kliničkim karakteristikama retinoblastoma. Prema međunarodnoj klasifikaciji retinoblastoma (IIRC), kod prvog tromjesečnog djeteta se radilo o stadiju D na desnom i B na lijevom oku. Kod drugog dječaka je tek pregledom u anesteziji nađen mali solitarni periferni tumor - stadij A na desnom oku, a potvrđeno je postojanje tumora u lijevom oku u stadiju B. Kod trećeg dječaka u dobi od 6 mjeseci, nađeni su znakoviti obostrane uznapredovale bolesti u stadiju E, s invazijom u oba vidna živca. Sustavna kombinirana kemoterapija je kod sve troje djece već nakon prvih ciklusa dovela do značajne regresije veličine tumora. Dodatni terapijski postupci - krio i foto/termoterapija - korišteni su za lokalnu destrukciju novonastalih malih tumora, a pre-kemo-krioterapijom poboljšavao se učinak sustavne kemoterapije. Kod prvog dječaka nije nađeno mutacije

koja bi bila uzrokom bolesti, kod drugog je nađena velika delecija na kromosomu 13q14 u području R B1 gena, a kod trećeg je analiza u tijeku.

**Zaključak:**

Praćenje i liječenje djece s retinoblastomom zahtjeva vrlo dobru multidisciplinarnu suradnju, te raspolaživošću dijagnostičkih i terapijskih modaliteta. Recentna promjena pristupa liječenju, osim što poboljšava ishod bolesti, otvara i mogućnosti provođenja barem nekih terapijskih postupaka i u Hrvatskoj uz preduvjet dobre suradnje s inozemnim stručnjacima u centrima specijaliziranim za liječenje retinoblastoma.

**Title:**

Retinoblastoma follow-up and treatment in Croatia - where do we stand?

**Authors:**

Jelena Petrinović Dorešić, Mirjana Bjeloš, Edita Kondža Krstonijević, Jasmina Stepan Giljević\*

**Institution:**

Klinika za očne bolesti, Klinička bolnica Sveti Duh Zagreb; \* Klinika za dječje bolesti Zagreb

**Aim:**

Retinoblastoma is the most common malignant tumor of the child's eye. Extrapolating the incidence of retinoblastoma in the world, ranging from 1 in 15.000 to 18.000, one could expect yearly incidence of 2 to 3 new cases in Croatia. During the last decade, the retinoblastoma treatment advances led to marked improvement in survival, but also in less comorbidity and invalidity. The aim of this study is to present a small series of three recent consecutive cases of bilateral retinoblastoma, the possibilities of diagnostics and treatment in Croatia, and the cooperation with colleagues from abroad.

**Patients and methods:**

In three baby-boys, age 3, 10, and 6 months, the suspicion of intraocular tumor growth was made. In two, the disease was accidentally discovered on magnetic resonance imaging performed for other reasons (brain structure analysis in neuroradiologic work-up), whereas in the youngest patient, the parents noticed white reflex from his right eye from time to time. In all three patients the complete examination under anesthesia (EUA) (tonometry, pachymetry, gonioscopy, biomicroscopy, indirect ophthalmoscopy with indentation, eye and orbit ultrasound examination, photo/videodocumentation, and in the last also ultrasound biomicroscopy). In all three, the systemic combined chemotherapy was commenced (VCE protocol - vincristine, carboplatin, etoposide) in the Children's Hospital Zagreb. EUA in our Clinic was periodically repeated, usually before the next chemotherapy cycle. Ultrasound dimensions of the tumors were followed and documented, cryotherapy of the accessible tumors, pre-chemo-cryotherapy and laser photocoagulation around solitary tumors were performed as needed. In the first patient, before the fifty chemotherapy cycle, besides cryotherapy, transpupillary thermotherapy of the newly formed tumors was done in the Univ. Clinic in Graz, Austria. In all patients molecular genetic analysis was performed. Due to unavailability of transpupillary thermotherapy and intraarterial chemotherapy, all patients were referred to Jules Gonin Clinic in Lausanne, Switzerland for further treatment.

**Results:**

In all three patients, the first EUA confirmed the bilateral tumors with clinical characteristics of retinoblastoma. Staging according to International Intraocular Retinoblastoma Classification (IIRS) was grade D on the right and grade B on the left eye for the first 3-month-

old patient. For the second patient, EUA revealed the small peripheral solitary tumor - grade A in the right eye, and confirmed the grade B tumor in the left eye. In the third patient, age 6 months, signs of bilateral advanced disease were found - grade E, with both optic nerve invasion. Systemic combined chemotherapy led to marked tumors' size regression already after the first cycles. Additional therapeutic procedures - cryo and photo/thermotherapy - were used for local destruction of the newly formed little tumors, and pre-chemo-cryo was used for systemic chemotherapy effect enhancement. In the first child, no mutation causing the disease was found; in the second large deletion on the 13q14 chromosome in the RB1 gene region was found. For the third patient the analysis is not finished yet.

### **Conclusion:**

Follow-up and treatment of children with retinoblastoma requires very good multidisciplinary cooperation and the availability of diagnostic and therapeutic modalities. Recent change in treatment approach, besides improvements in outcome of the disease, opens up the possibility of performing at least some of the therapeutic measures also in Croatia, but with prerequisite of good cooperation with colleagues in foreign centres specialised in retinoblastoma treatment.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

Titula / Title:

Dr.sc.

Specijalist / Specialist

### **Ime i prezime / First and Last Name:-First**

Jelena

### **Ime i prezime / First and Last Name:-Last**

Petrinović Dorešić

## **96. Damir Vukušić**

### **Naslov:**

Usporedba utjecaja torsione i longitudinalne Phaco tehnike na debljinu rožnice u kirurgiji katarakte

### **Autori:**

Damir Vukušić Koautori: Zoran Sipić, Ivana Bednar Babić, Vanda Gašpar Mitrečić, Miljenka Martinović Bošković, Marko Šimunić

### **Ustanova:**

Opća bolnica Karlovac

### **Cilj:**

Usporedba torzionog modela phaco sonde s longotudinalnom sondom, te njihov utjecaj na debljinu i prozirnost rožnice, a time i na brzinu postoperativnog oporavka

### **Bolesnici i metode:**

U ovoj prospektivnoj studiji urađena je phacoemulsifikacija katarakte kod 88 pacijenata. Pacijenti su podijeljeni u dvije grupe i svaka grupa je operirana s različitim tipovima ultrazvučnih sondi- jedna grupa je operirana s longitudinalnom sondom i ravnim tipom na aparatu Laureat Alcon Vision System (40 očiju), druga grupa s OZiL torsionskom sondom i zakriviljenim tipom na aparatu Constellation Alcon Vision System (48 očiju) Sve operacije je izveo isti kirurg koristeći standardnu phaco chop tehniku. Kod svih pacijenata je učinjeno mjerjenje centralne debljine rožnice (CCT), i to s prednjim OCT-om na aparatu Copernicus II Optopol. Merenja su rađena prije operacije, 1. dan i 7. dan iza operacije. Pacijenti s komplikiranim kataraktama, kao i s prethodnom patologijom rožnice su isključeni iz studija.

### **Rezultati:**

Srednji CCT prije kirurgije je bio u prvoj grupi (torsionska sonda)  $570 \mu\text{m}$ , a u drugoj (longitudinalna sonda)  $560 \mu\text{m}$

Srednji CCT 1. postop. dan je u prvoj grupi iznosio  $600 \mu\text{m}$ , u drugoj grupi  $700 \mu\text{m}$ .

Sedmi postop. dan srednji CCT je u prvoj grupi iznosio  $580 \mu\text{m}$ , a u drugoj grupi  $610 \mu\text{m}$

### **Zaključak:**

Dobro je poznato da torsionska tehnika ima određene prednosti: manje zagrijavanje ulazne rane, lećne mase se efikasnije podijele i aspiriraju, manja je repulzija, kraće vrijeme korištenja ultrazvučne energije za postizanje istog efekta i smanjen CDE.

Ova kratka prospektivna studija pokazuje manju reakciju i brži oporavak rožnice nakon kirurgije katarakte izvedene torsionskom sondom u odnosu na longitudinalnu, u ranom postoperativnom periodu, a to je značajno za postizanje našeg cilja- što ranija životna i radna rehabilitacija naših pacijenata,

### **Title:**

Comparison of torsional and longitudinal Phaco techniques influence on corneal thickness in cataract surgery

### **Authors:**

Damir Vukušić Coauthors: Zoran Sipić, Ivana Bednar Babić, Vanda Gašpar Mitrečić, Miljenka Martinović Bošković, Marko Šimunić

**Institution:**

General hospital Karlovac

**Aim:**

to compare torsional with longitudinal model of the phaco tip and their influence on the corneal thickness and transparency, along with postoperative recovery.

**Patients and methods:**

In this prospective study 88 eyes were assigned to Phacoemulsification. Patients were divided in two groups and operated with one of the two types of the Phaco handpiece – longitudinal straight tip using Laureate Alcon World Phaco System(40 eyes) and OZil torsional flared tip using Constellation Alcon Vision System (48 eyes). All surgery was performed by the same experienced surgeon using standard phaco chop technique . The outcome measure was central corneal thickness (CCT). It was calculated using anterior OCT (Copernicus II Optopol) and measured before surgery, first and seventh day after the surgery. Exclusion criteria was any type of complicated or traumatic cataract and corneal pathology.

**Results:**

: Average CCT before the surgery in the first group (torsional) was 570 µm and in the second (longitudinal) 560 µm. Average CCT first day after the surgery in the first group was 600 µm and in the second was 700 µm. Seventh day after the surgery CCT in the first group was 580 µm and 610 µm in the second group.

**Conclusion:**

It is well known that in torsional technique incisional wound is less heated, nuclear material may be more efficiently approximated to and aspirated, the repulsion of the nuclear material is minimal and it shortens phaco time, phaco power and cumulative dissipated energy (CDE). This short prospective study shows faster corneal recovery after torsional phaco and superior efficiency in relation to CCT, as compared with longitudinal phaco, in the early postoperative period. This enables our patients earlier work rehabilitation. Also improved phaco efficiency provides better overall safety profile for the patient

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Damir

**Ime i prezime / First and Last Name:-Last**

Vukušić

## **97. Robert Stanić**

### **Naslov:**

Penetrirajuća duboka sklerektomija kod primarnog glaukoma zatvorenog kuta

### **Autori:**

Stanić R., Rogošić V., Sušac T.

### **Ustanova:**

KBC Split, Klinika za očne bolesti

### **Cilj:**

Prikazati rezultate penetrirajuće duboke sklerektomije (duboka sklerektomija plus trabekulektomija) kod primarnog glaukoma zatvorenog kuta (PACG).

### **Bolesnici i metode:**

U studiju je bilo uključeno 30 očiju (30 pacijenata: 18 žena i 12 muškaraca) sa medikamentozno nereguliranim PACG. Mjeren je intraokularni tlak pre- i postoperativno, te određen broj antiglaukomskih lijekova. U svim slučajevima, penetrirajuća duboka sklerektomija je napravljena u lokalnoj peribulbarnoj anesteziji. Zabilježene su intra- i postoperativne komplikacije. Vrijeme praćenja je iznosilo 3 godine.

### **Rezultati:**

Prosječna dob pacijenata je bila  $64 \pm 11$  godina. Prosječna redukcija intraokularnog tlaka na kraju praćenja je bila  $15,04 \text{ mmHg}$  (49,6%). Kompletan uspjeh zahvata ( $\text{IOP} \leq 18 \text{ mmHg}$  bez lijekova) nakon 3-6 mjeseci je bio 63%. Kvalificirani uspjeh zahvata ( $\text{IOP} \leq 18 \text{ mmHg}$  sa ili bez lijekova) nakon 36 mjeseci je bio 70%. Nakon operativnog zahvata je prosječan broj antiglaukomskih lijekova pao sa  $2,25 \pm 0,70$  na  $0,40 \pm 0,75$ . Postoperativne komplikacije su bile: dva slučaja hipotonije i jedan slučaj jače upalne reakcije prednje sobice.

### **Zaključak:**

Penetrirajuća duboka sklerektomija je dobar izbor u kirurškom liječenju PACG. Kontrolirana penetracija trabekulodescemetove membrane otklanja limitirajuće čimbenike duboke sklerektomije kod PACG, te donosi zadovoljavajuće rezultate što se tiče sniženja intraokularnog tlaka te broja antiglaukomskih lijekova.

### **Title:**

Penetrating deep-sclerectomy in primary angle-closure glaucoma

### **Authors:**

Stanić R., Rogošić V., Sušac T.

### **Institution:**

Clinical Hospital Centre Split, Department of Ophthalmology

### **Aim:**

To report the outcome of surgically managed primary angle closure glaucoma (PACG) with penetrating deep-sclerectomy (deep sclerectomy plus trabeculectomy).

### **Patients and methods:**

The study enrolled 30 eyes of 30 patients (18 women and 12 men) with medically uncontrolled primary angle closure glaucoma (PACG). Intraocular pressure (IOP), and glaucoma medications were assessed preoperatively and postoperatively. In all cases penetrating deep sclerectomy were performed under peribulbar anesthesia. Intraoperative and postoperative complications were recorded. The follow-up period was 3 years.

### **Results:**

The mean age of patients was  $64 \pm 11$  years. The average reduction in intraocular pressure at the end of follow up was 15,04 mmHg (49,6%). Complete success rate ( $IOP \leq 18$  mmHg without medication) after 36 months was 63%. Qualified success rate ( $IOP \leq 18$  mmHg with or without medication) after 36 months was 70%. Postoperatively, the mean number of medication dropped from  $2,25 \pm 0,70$  to  $0,4 \pm 0,75$ . Postoperative complication were: hypotony in 2 cases, severe anterior chamber reaction in 1 case.

### **Conclusion:**

Penetrating deep sclerectomy is a good option in treating PACG. Controlled penetration of trabeculo-Descemet membrane eliminated the limitations of the deep sclerectomy in primary angle closure glaucoma, and ensured a satisfactory outcome in reduction of IOP and number of glaucoma medications.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA GLAUKOM / Glaucoma section

Titula / Title:

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Robert

**Ime i prezime / First and Last Name:-Last**

Stanić

## **98. Maksimiljan Mrak**

### **Naslov:**

Utjecaj kratkotrajne fizičke aktivnosti na perfuziju makule i papile vidnog živca mjerен optičkom koherentnom tomografskom angiografijom

### **Autori:**

Maksimiljan Mrak, dr.med., Marin Belak dr.med., prof.dr.sc Zoran Vatavuk, dr.med., doc.dr.sc Bilja na Andrijević Derk, dr.med

### **Ustanova:**

Klinički bolnički centar „Sestre milosrdnice“

### **Cilj:**

Cilj je ovog rada istražiti utjecaj kratkotrajne fizičke aktivnosti, odnosno povišenog sistemskog tlaka i pulsa na protok i vaskularnu gustoću makule, odnosno protok kroz papilu vidnog živca, a koristeći se optičkom kohernetnom tomografskom angiografijom.

### **Bolesnici i metode:**

U naše istraživanje uključili smo zdrave dobrovoljce, osobe muškog i ženskog spola, između 25 i 39 g odine života, bez kardiovaskularnih, plućnih, bubrežnih ili oftalmoloških bolesti. Kod svakog smo dobrovoljca za istraživanje koristili nasumično odabranu jedno oko. Cijelo ispitivanje vrši jedan ispitivač. Dobrovoljci su se na dan ispitivanja javili ispitivaču koji je uzeo anamnezu te odredio vidnu oštrinu i učinio kompletan oftalmološki pregled. Dobrovoljcima je određen 10 minutni odmor te im se u jedno oko ukapalo kapi 1% Mydriacyla. Nakon odmora im se izmjerio krvni tlak, puls i postotak zasićenosti eritrocita kisikom (Drager Vista 120 uređajem). Zatim su im se snimile osnovne referente OCT angiografske slike koristeći se Optovue RTVue XR Avanti with AngioVue (Optovue Inc, Fremont, CA) uređajem u HD angio retina 3.0 mm x 3.0 mm modu te HD angio disc u 4,5mm x 4,5 mm modu. Dobrovoljci potom započinju trening na sobnom biciklu gdje kroz 5 minuta laganog zagrijavanja uz održavanje pulsa između 120 i 130 otkucaja u minuti te 5 minuta pojačanog tempa vježbaju, dok se ne dosegну unaprijed određene vrijednosti pulsa. Maksimalne vrijednosti pulsa određene su Tanaka formulom (maksimalna srčana frekvencija za muškarca) = 208 - godine \* 0.7 i Gulati formulom (maksimalna srčana frekvencija za žene) = 206 - godine \* 0.88. Dobrovoljci su morali postići 70-80% maksimalne srčane frekvencije. Nakon dostizanja zadanog pulsa dobrovoljcima se ponovno snimaju OCT angiografske slike u HD angio retine 3,0mm x 3,0mm te HD angio papile 4,5x4,5 mm modu uz paralelno mjerjenje vrijednosti sistemskog krvnog tlaka i pulsa. Mjerjenje se vršilo dok dobrovoljac nije postigao vrijednosti krvnog tlaka koje je imao prije početka testiranja. Svi podaci su se potom obradili koristeći se SPSS statističkim sustavom.

### **Rezultati:**

Kratkotrajnom fizičkom aktivnošću došlo je do porasta sistemskog tlaka i pulsa u svih ispitanika u skladu s dosadašnjim spoznajama o fiziologiji ljudskog tijela. Vrijednosti mjerena fovealne avaskularne zone nisu pokazale znatnije promjene nakon kratkotrajne fizičke aktivnosti u odnosu na stanje mirovina. Peripapillarni i parafovealni protoci su se smanjili nakon kratkotrajne fizičke aktivnosti te su se vratiли na svoje normalne vrijednosti nakon postizanja vrijednosti krvnog tlaka i pulsa koje je ispitanik imao na početku testiranja.

### **Zaključak:**

Ovim istraživanje dokazali smo kako kratkotrajna fizička aktivnost znatno utječe na protok kroz makulu i papilu vidnog živca te kako su promjene usko vezane uz sistemski tlak i puls. Iako je OCT angiografija trenutno najbolji, najbrži i najmanje invazivan način proučavanja promjena krvožilnog sustava mrežnice, još uvijek postoji potencijal za poboljšanjem u smislu ubrzavanja procesa snimanja mrežnice te davanja direktnih informacija o stanju protoka u malim i velikim krvnim žilama po uzoru na mjerene indexe otpora unutar krvne žile Doppler ultrazvučnom dijagnostikom.

**Title:**

Effect of short-term exercise on macular perfusion and perfusion of optic nerve papilla measured with optical coherent tomography angiography

**Authors:**

Maksimiljan Mrak, dr.med., Marin Belak dr.med., prof.dr.sc Zoran Vatavuk, dr.med., doc.dr.sc Biljana Andrijević Derk, dr.med

**Institution:**

Klinički bolnički centar „Sestre milosrdnice“

**Aim:**

The aim of this study was to investigate effect that short term physical activity, elevation of systemic blood pressure and pulse, has on flow and vascular density of macula and on flow through optic nerve papilla measured with optical coherent tomography angiography.

**Patients and methods:**

In our study we enrolled healthy volunteers, male or female, that were between 25 and 39 years old. All volunteers had no history of any cardiovascular, lung, kidney and ophthalmologic diseases. We tested only one eye of every volunteer. All of the study was done by one examiner. At the day of testing, all volunteers meet with the examiner who then took anamnesis, check visual acuity and did a complete slit lamp exam. Then all volunteers took a 10 minute break while a drop of 1% Mydriacyl was given into one, randomly chosen, eye. After a rest, we took baseline blood pressure, puls rate and pulse oximetry values using a Drager Vista 120 device. After that, baseline OCT angiography images were taken using Optovue RTVue XR Avanti with AngioVue (Optovue Inc, Fremont, CA) device in HD angi retina 3.0 mm x 3.0 mm mode and in HD angio disc 4,5mm x 4,5 mm mode. Volunteers then started a ten minute training on a stationary bike. Training was divided into two parts, first they had a 5 minute warm up while trying to maintain a heart rate between 120 and 130 beats per minute and after that they had a five minute high interval training while trying to maintain previously calculated heart rate frequencies. Maximal heart rate frequencies were calculated using Tanaka formula for man= 208 – (age \* 0.7) and Gulati formula for women= 206 – (age\* 0.88). Volunteers had to maintain between 70 and 80 percent of maximal heart rate frequency. After achieving that heart rate, volunteers had OCT angiography images taken in HD angi retina 3,0mm x3,0 mm mode and HD angio papille 4,5mmx4,5 mm mode while having their blood pressure and pulse rate parallely taken. Image were captured until volunteer had its blood pressure values returned to baseline values . All data was analysed using SPSS statistics.

**Results:**

Short term physical activity elevated blood pressure and heart rate values in all of our volunteers which is normal in human physiology. Foveal avascular zone values didn't show significant changes after short term physical activity compared to values taken in resting state. Peripapillary and parafoveal flo-

w decreased after short term physical activity and then returned to its normal values after blood pressure and heart rate values returned to its resting state values.

**Conclusion:**

With this research we proved that short-term physical activity has significant effect on macula an optical nerve head flow which is related to elevated blood pressure and elevated heart rate. Although OCT angiography is fastest and least invasive way of examining vascular changes in retina there is still potential for improvement. By having its images taken even faster, or by giving more detailed information about flow values inside blood vessels OCT angiography could better for research, diagnostic and follow up of retinal diseases.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Maksimiljan

**Ime i prezime / First and Last Name:-Last**

Mrak

## **99. Ivana Pivić-Kovačević**

### **Naslov:**

Utjecaj nekomplikirane operacije mrene metodom ultrazvučne fakoemulzifikacije na promjenu deblji ne makule u dijabetičara

### **Autori:**

Ivana Pivić-Kovačević, Suzana Matić, Josip Barać, Željka Salinger

### **Ustanova:**

Klinika za očne bolesti, Medicinski fakultet Osijek, Sveučilište J.J. Strossmayera u Osijeku, KBC Osijek

### **Cilj:**

Utvrđiti promjene debljine makule u ranom postoperativnom razdoblju nakon nekomplikirane operacije mrene metodom ultrazvučne fakoemulzifikacije u dijabetičara koristeći optičku koherentnu tomografiju (SD-OCT)

### **Bolesnici i metode:**

Ovo prospektivno istraživanje uključuje 55 pacijenata podijeljenih u dvije skupine. Prvu skupinu čini 25 pacijenata sa šećernom bolešću, od toga 7 muškaraca (12.73%) i 18 žena (32.73%). Kontrolna skupina obuhvaća 30 pacijenata, od toga 11 muškaraca (20.00%) i 19 žena (34.55%), koji nemaju šećernu bolest niti bilo kakve druge oftalmološke bolesti. Svi ispitanci podvrgnuti su nekomplikiranoj operaciji mrene metodom ultrazvučne fakoemulzifikacije na Klinici za očne bolesti, KBC Osijek. Isključni kriteriji za ovo istraživanje bili su: prijašnje intraokularne operacije, raniji uveitisi, različite retinalne bolesti, makularni edem bilo kakve etiologije, bolesti žilnice, proliferativna dijabetička retinopatija te nemogućnost izvođenja OCT-

a radi maturne mrene, sekluzije zjenice ili značajnih degenerativnih promjena rožnice. Pacijenti su pratićeni u periodu od mjesec dana nakon operativnog zahvata. Svim pacijentima preoperativno učinjen je kompletan oftalmološki pregled, određena najbolja korigirana vidna oštRNA (BCVA), određen stupanj zamućenja leće upotrebom LOCS III klasifikacije (Lens Opacities Classification System III) te snimljen SD-

OCT makule oka predviđenog za operaciju. Prvi kontrolni pregled učinjen je tjedan dana nakon, a drugi kontrolni pregled mjesec dana nakon operativnog zahvata. Na svakom kontrolnom pregledu određena je BCVA, učinjen kompletan oftalmološki pregled i snimljen SD-

OCT makule operiranog oka. Ukupna disispirana energija (engl. cumulative dissipated energy – CDE) i volumen potrošene tekućine (engl. estimated fluid used/ccm3) izmjereni su kao najvažniji parametri tijekom operativnog zahvata koji mogu biti povezani s promjenama debljine makule u ranom postoperativnom razdoblju.

### **Rezultati:**

Ovim prospektivnim istraživanjem htjeli smo ispitati utjecaj nekomplikirane operacije mrene metodom ultrazvučne fakoemulzifikacije na promjenu debljine makule u dijabetičara i kontrolnoj skupini pacijenata u ranom postoperativnom razdoblju. Dokazali smo statistički značajnu razliku u debljini makule u dijabetičara preoperativno i na drugoj kontroli ( $p=0.0045137$ ) te između prve I druge kontrole ( $p=0.0069024$ ). Također smo dokazali statistički značajnu razliku u debljini makule u kontrolnoj skupini pacijenata preoperativno i na drugoj kontroli ( $p=0.005267$ ) te između prve i druge kontrole ( $p=0.01285$ ). Ne postoji statistički značajna razlika u promjeni debljine makule između ispitivanih skupina preo-

perativno ( $p=0,618$ ), na prvoj kontroli ( $p=0.6848$ ) kao ni na drugoj kontroli ( $p=1$ ). Utjecaj vrijednosti HbA1c na promjenu debljine makule u dijabetičara nije statistički značajan ni na prvoj ( $p=0.48405$ ) kao niti na drugoj kontroli ( $p=0.74875$ ). Utjecaj kumulativne disipirane energije (CDE) na debljinu makule ispitana je pomoću Spearmanovog korelacijskog koeficijenta za sva mjerena u obje ispitivane skupine. Ne postoji statistički značajan utjecaj CDE na promjenu debljine makule u dijabetičara na prvoj kontroli ( $p=0.16149$ ), na drugoj kontroli ( $p=0.11737$ ) te između prve i druge kontrole ( $p=0.55076$ ). Ne postoji statistički značajan utjecaj CDE na promjenu debljine makule u kontrolnoj skupini na prvoj kontroli ( $p=0.88393$ ), na drugoj kontroli ( $p=0.88206$ ) te između prve i druge kontrole ( $p=0.47844$ ). Utjecaj volumena potrošene tekućine na debljinu makule ispitana je pomoću Spearmanovog korelacijskog koeficijenta za sva mjerena u obje skupine ispitanih. Dokazana je statistički značajna povezanost utjecaja volumena potrošene tekućine na promjenu debljine makule u dijabetičara na prvoj kontroli ( $p=0.019164$ ) kao i na drugoj kontroli ( $p=0.0016862$ ), dok utjecaj navedenog parametra nije statistički značajan obzirom na promjenu debljine makule između prve i druge kontrole ( $p=0.55797$ ) u ispitivanoj skupini. Ne postoji statistički značajan utjecaj volumena potrošene tekućine na promjenu debljine makule u kontrolnoj skupini ispitanih na prvoj kontroli ( $p=0.98087$ ), na drugoj kontroli ( $p=0.83683$ ) kao ni između prve i druge kontrole ( $p=0.83039$ ).

### **Zaključak:**

Nekomplicirana operacija mrene metodom ultrazvučne fakoemulzifikacije uzrokuje promjene debljine makule u ranom postoperativnom razdoblju u obje skupine ispitanih. Nije dokazana statistički značajna razlika u promjeni debljine makule između ispitivanih skupina u ranom postoperativnom razdoblju. Dokazano je da vrijednosti HbA1c u dijabetičara ne utječu statistički značajno na promjenu debljine makule u promatranom postoperativnom razdoblju. Također je utvrđeno da volumen utrošene tekućine, kao jedan od parametara na koji kirurg može utjecati tijekom samog operativnog zahvata, utječe na promjenu debljine makule u ranom postoperativnom razdoblju u dijabetičara. Iako je operacija mrene metodom ultrazvučne fakoemulzifikacije značajno smanjila udio komplikacija u ranom postoperativnom razdoblju, ovim istraživanjem dokazano je da ipak postoji statistički značajan utjecaj samog operativnog zahvata na promjenu debljine makule u navedenom razdoblju, a koji je dokazan upotrebom SD-OCT.

a. Promjene u debljini makule u promatranom razdoblju nisu se manifestirale klinički značajnim edemom makule kao ni značajnim padom vidne oštine. Svi ispitani imali su značajno poboljšanje vidne oštine nakon operativnog zahvata.

### **Title:**

The effect of uncomplicated phacoemulsification cataract surgery on macular thickness changes in diabetic patients

### **Authors:**

Ivana Pivić-Kovačević, Suzana Matić, Josip Barać, Željka Salinger

### **Institution:**

Department of Ophthalmology, School of Medicine Osijek, University Josip Juraj Strossmayer Osijek, University Hospital Centre Osijek

### **Aim:**

To analyse the effect of uncomplicated phacoemulsification cataract surgery on macular thickness changes in early postoperative period in diabetic patients using optical coherence tomography (SD-OCT)

### **Patients and methods:**

This prospective study included 55 patients divided in two groups. The first group consisted of 25 diabetes mellitus patients, 7 men (12,73%) and 18 women (32,73%). The control group consisted of 30 patients, 11 men (20,00%) and 19 women (34,55%) with no history of diabetes nor any other ophthalmic diseases. They all underwent uncomplicated phacoemulsification cataract surgery at the Department of Ophthalmology, University Hospital Centre Osijek. Exclusion criteria were previous intraocular surgery of any type, history of previous uveitis, non diabetic retinal disease, earlier macular edema or thickening of any etiology, previous laser photocoagulation treatment within 3 months before cataract surgery, choroidal disorders, proliferative diabetic retinopathy or impossibility to perform OCT due to mature cataract, pupil seclusion or progressive corneal degenerations. Patients were followed up 1 month after cataract surgery. On the preoperative examination complete ophthalmological examination was performed, the best corrected visual acuity (BCVA) was measured using Snellen chart, the lens opacification grade was determined according to the Lens Opacities Classification System III (LOCS III) and the macular thickness of the eye planned for cataract surgery was measured using SD-OCT. The first control was performed one week and the second, one month after surgery. At each control, BCVA was determined, a complete ophthalmological examination was performed and SD-OCT measuring macular thickness of operated eye was recorded. HbA1c blood sample level was measured preoperatively in diabetic patients. Cumulative dissipated energy (CDE) and estimated fluid used ( $\text{ccm}^3$ ) were measured as the most important parameters during surgical procedure, which may be related to macular thickness changes in the early postoperative period.

### **Results:**

We proved that there was statistically significant difference in macular thickness before surgery and on the second control ( $p=0.0045137$ ) and between the first and the second control ( $p=0.0069024$ ) in diabetic group. There was also a statistically significant difference in macular thickness in the control group of patients before surgery and on the second control ( $p=0.005267$ ), as well as between the first and the second control ( $p=0.01285$ ). There was no statistically significant difference in macular thickness changes between diabetic and control group of patients preoperatively ( $p=0.618$ ), on the first ( $p=0.6848$ ) and the second control ( $p=1$ ). The correlation between HbA1c level and macular thickness changes was not statistically significant on the first ( $p=0.48405$ ) and the second control ( $p=0.74875$ ). The correlation between cumulative dissipated energy (CDE) and macular thickness changes was analyzed using Spearman's correlation coefficient ( $\rho$ ). We proved that there was not statistically significant correlation between macular thickness changes before surgery and the first control ( $p=0.16149$ ), before surgery and the second control ( $p=0.11737$ ), as well as between the first and the second control ( $p=0.55076$ ) in diabetic patients. The correlation between estimated fluid used and macular thickness changes was analyzed using Spearman's correlation coefficient ( $\rho$ ). We proved that there was statistically significant correlation between macular thickness changes and estimated fluid used before surgery and the first control ( $p=0.019164$ ), as well as before surgery and the second control ( $p=0.0016862$ ) in diabetics. There was not statistically significant correlation between macular thickness changes between the first and the second control ( $p=0.55797$ ) due to estimated fluid used in diabetic patients. There was not statistically significant correlation between macular thickness changes and CDE before surgery and the first control ( $p=0.88393$ ), before surgery and the second control ( $p=0.88206$ ), as well as between the first and the second control ( $p=0.47844$ ) in control group. Also, we proved that there was not statistically significant correlation between macular thickness changes and estimated fluid used before surgery and the first control ( $p=0.98087$ ), before surgery and the second control ( $p=0.83683$ ), as well as between the first and the second control ( $p=0.83039$ ) in control group.

### **Conclusion:**

Uncomplicated phacoemulsification cataract surgery causes macular thickness changes in the early postoperative period in both groups. Statistically significant differences in macular thickness were observed one month after the surgery compared to preoperative and seven postsurgical days macular thickn

ess measurements in both groups of patients. There was no statistically significant difference in macular thickness changes between control and diabetic group of patients preoperatively, on the first and second control. The level of HbA1c in diabetic patients had no statistically significant impact on macular thickness changes in early postoperative period. Estimated fluid used, as one of the parameters that surgeon can manage during the procedure, had impact on macular thickness changes in diabetics in early postoperative period. Although phacoemulsification cataract surgery significantly reduced the proportion of early postoperative complications, this study has been shown to have an effect on macular thickness changes in the early postoperative period, which is proved using SD-OCT. Macular thickness changes in early postoperative period did not present with clinically significant macular edema as well as with decreased visual acuity. All of participants have remarkably improvement of visual acuity after cataract surgery in early postoperative period.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

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Pivić-Kovačević

## **100. Ivana Radman**

### **Naslov:**

Oči širom zatvorene

### **Autori:**

Ivana Radman, Iva Krolo, Aida Kasumović, Maja Malenica Ravlić, Zoran Vatavuk

### **Ustanova:**

Klinički bolnički centar „Sestre milosrdnice“, Zagreb, Hrvatska

### **Cilj:**

Cilj ovog istraživanja je bilo utvrditi nastaju li promjene na rožnici i očnoj jabučici u zdravih ispitanik a nakon trljanja jednog oka tijekom 2 minute. Kao kontrolna skupina korišteno je drugo oko koje nije podvrgnuto trljanju.

### **Bolesnici i metode:**

U ispitivanje je uključeno 100 očiju od 50 ispitanika koji dolaze na prvi oftalmološki pregled. U studij u nisu uključene osobe koje imaju bolest prednjeg ili stražnjeg segmenta oka, atopijski konjunktivitis i keratitis, alergije periokularne regije, prethodni operativni zahvat na oku te osobe koje nose kontaktne leće, koriste umjetne suze ili druge oftalmološke lijekove koji utječu na kvalitetu površine oka. Također smo isključili ispitanike koji su anamnestički imali naviku trljanja očiju. Ispitanici su podvrgnuti biomikroskopskom pregledu rožnice, prednje očne sobice i procjeni suznog filma prije i poslije trljanja odabranog oka. Isti pregled obavljen je i na kontrolnom oku. Osim toga, provedena je dijagnostička o brada na oba oka koja je uključila kornealnu topografiju (OCULUS Pentacam, Germany) i ultrazvučnu biomikroskopiju (Zeiss IOL Master 700) kako bi procijenili parametre prednjeg segmenta oka i aksialnu duljinu očnih jabučica prije i poslije trljanja oka. Analizirali smo podatke dobivene na oba oka.

### **Rezultati:**

U studiju je uključeno 50 ispitanika prosječne dobi 32 godine u rasponu od 10 do 65 godina. Pregledom prije ispitivanja nije nađena statistički značajna razlika u oftalmološkim parametrima između očiju koje su izložene trljanju i onih koji to nisu. U odnosu na stanje prije trljanja, nakon trljanja inicijalno plice keratometrije (K) na prednjoj površini rožnice postaju još plice i dodatno se javljaju promjene u središnjoj rožnici u smislu astigmatizma protiv pravila (eng. against the rule astigmatism – ATR). Kvaliteta suznog filma (eng. non-invasive tear break-up time; NITBUT) je statistički značajno povećana nakon trljanja oka. Postojala je pozitivna korelacija između aksijalne duljine (eng. axial length - AL) i povećanja dubine prednje očne sobice (eng. anterior chamber depth - ACD) poslije trljanja.

### **Zaključak:**

U zdravim očiju, nakon trljanja oka dolazi do značajne promjene u NITBUT-u i keratometrijskim vrijednostima prednje površine rožnice prema ATR astigmatizmu. Dulje oči su i male više promjena u ACD.

### **Title:**

Eyes Wide Shut

### **Authors:**

Ivana Radman, Iva Krolo, Aida Kasumović, Maja Malenica Ravlić, Zoran Vatavuk

**Institution:**

University Hospital Center „ Sestre milosrdnice“, Zagreb, Croatia

**Aim:**

The aim of this study was to determine the transient changes (if any) on the cornea and the axial length in healthy volunteers after one eye rubbing for 2 minutes. As a control group we used the fellow- eye that was not rubbed.

**Patients and methods:**

The study included 100 eyes of 50 persons who came to the first ophthalmic examination. Exclusion criteria were as follows: current or previous corneal disease of the anterior and posterior segment of the eye, atopic conjunctivitis and keratitis, periocular region allergies, previous operative eye surgery, contact lens wear, artificial tears or other ophthalmic drugs that affect the quality of the eye. We also excluded the patients who had a history of eye rubbing. The examinees undertook a slit-lamp examination of the cornea, the anterior chamber and the assessment of the tear film before and after the eye rubbing. The same examination was performed on a control eye. In addition, they underwent a diagnostic examination that included corneal topography (OCULUS Pentacam, Germany) and ultrasound biometry (Zeiss IOL Master 700) to evaluate the parameters of the front eye segment and the axial length of the eyeballs before and after eye rubbing. Data were analyzed on both eyes.

**Results:**

50 volunteers were enrolled in this study with average age of 32 years in the range of 10 to 65 years. No previous statistically significant difference was found in ophthalmologic parameters between the eyes exposed to rubbing and those that were not. Compared to the condition before eye rubbing, flat keratometry (K) on the front surface of the cornea after rubbing became even more flat and there were further changes in the central cornea in terms of against the rule astigmatism (ATR). Non-invasive tear break-

up time (NITBUT) was statistically significantly higher after the eye rubbing. There was a positive correlation between axial length (AL) and anterior chamber depth (ACD) after rubbing.

**Conclusion:**

In healthy eyes, following eye rubbing, there is a significant change in NITBUT and central anterior K changes towards ATR astigmatism. Longer eyes had more changes in ACD.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

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Radman

## **101. Iva Krolo**

### **Naslov:**

50 nijansi keratokonusa

### **Autori:**

Iva Krolo, Aida Kasumović, Ivana Radman, Maja Malenica Ravlić, Zoran Vatavuk

### **Ustanova:**

Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska

### **Cilj:**

Procijeniti vidnu funkciju s kontaktnim lećama (KL) u bolesnika s keratokonusom, kao i učinak collagen cross-linkinga (CXL) rožnice na kontrastnu osjetljivost, vid u sumrak, vidnu oštinu, parametre endotela i to pografije rožnice u svrhu boljeg predviđanja učinkovitosti zahvata.

### **Bolesnici i metode:**

30 očiju s progresivnih keratokonusom uključeno je u ovu prospektivnu studiju. CXL je proveden po standardnom Dresdenskom protokolu. Svi ispitanici korigirani su korištenjem Rose K2 (RK2) KL. Na jbolje korigirana vidna oština s naočalama i kontaktnim lećama, vid u sumrak, kontrasta osjetljivost mjereni su korištenjem Vista Vision Far-Pola (DMD MedTech) optotipa. Svim bolesnicima učinjene su sljedeće pretrage: autorefraktokeratom etrija (Indo, eRK-10), spekularna mikroskopija (Tomey EM-4000) i kornealna topografija (Pentacam, OCULUS). Svi parametri ispitivani su prije korekcije kontaktnim lećama, prije CXL te 3 i 6 mjeseci nakon zahvata.

### **Rezultati:**

Tretirane oči pokazale su statistički značajno poboljšanje u kontrastnoj osjetljivosti, vidu u sumrak i u ajboljoj korigiranoj naočalnoj vidnoj oštini. Također jer pronađeno smanjenje keratometrijskih vrijednosti autorefraktokeratometrijom i kornealnom topografijom nakon 6 mjeseci praćenja. Maksimalne keratometrijske vrijednosti bile su statistički značajno niže 6 mjeseci nakon zahvata u usporedbi s preoperativnim vrijednostima. Spekularna mikroskopija nije pokazala značajne promjene u značajkama endotela ispitivanih rožnica.

### **Zaključak:**

CXL s riboflavinom i UV-

A iradijacijom poboljšava vidne performanse i inhibira progresiju keratokonusa. RK2 KL omogućuju bolju vidnu funkciju u usporedbi s naočalnom korekcijom.

### **Title:**

50 Shades of Keratoconus

### **Authors:**

Iva Krolo, Aida Kasumović, Ivana Radman, Maja Malenica Ravlić, Zoran Vatavuk

### **Institution:**

University Hospital Center Sestre milosrdnice, Zagreb, Croatia

**Aim:**

To assess the visual function with contact lenses (CLs) in keratoconus patients as well as the effects of corneal collagen cross-linking (CXL) on contrast sensitivity (CS), twilight vision (TV), visual acuity, corneal endothelium and corneal topography investigating possible predictors of efficacy.

**Patients and methods:**

30 eyes with progressive keratoconus were enrolled in this prospective study. CXL was performed according to standard Dresden protocol. All patients were corrected with Rose K2 (RK2) contact lenses. Best spectacle-corrected visual acuity (BSCVA), best contact lens-corrected visual acuity (BCLCVA), TV and CS were measured using Vista Vision Far-Pola (DMD MedTech) charts. All patients underwent following diagnostic procedures: autorefractokeratometry (Indo, eRK-10), specular microscopy (Tomey EM-4000) and corneal topography (Pentacam, OCULUS). All parameters were evaluated before CLs fitting, before CXL and 3 and 6 months postoperatively.

**Results:**

Treated eyes showed a statistically significant improvement of CS, TV and BSCVA. We also found a reduction in keratometry values measured by autorefractokeratometer and corneal topography at 6-months follow-up. Maximum keratometry was significantly lower 6 months postoperatively compared to the preoperative value. Specular microscopy did not show a statistically significant change in endothelial cell parameters at baseline and 6 months postoperatively.

**Conclusion:**

CXL with riboflavin and UV-A improved visual performance and inhibited the progression of keratoconus. RK2 CLs provided better visual function than spectacles.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJAU ZA KONTAKTOLOGIJIU / Contactology section

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Krolo

## **102. Aida Kasumović**

### **Naslov:**

Crno-bijeli svijet?

### **Autori:**

Aida Kasumović, Iva Krolo, Ivana Radman, Maja Malenica Ravlić, Zoran Vatavuk

### **Ustanova:**

Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska

### **Cilj:**

Procjeniti vidnu funkciju prije i poslije korekcije mekanim i tvrdim plinopropusnim kontaktnim lećam a (KL) u zdravih ispitanika, kao i njihove vidne performanse: kontrastnu osjetljivost s prostornom frekvencijom, vid u sumrak, vidnu oštrinu i parametre topografije rožnice.

### **Bolesnici i metode:**

Ova prospektivna studija uključila je 60 očiju korigiranih mekanim kontaktnim lećama (MKL) i 30 očiju korigiranih tvrdim plinopropusnim kontaktnim lećama (TPKL). Svim ispitanicima učinjena su sljedeća mjerena: najbolja naočalna korigirana vidna oštrina, najbolja korigirana vidna oštrina s kontaktnim lećama, vid u sumrak, kontrastna osjetljivost (Vista Vision Far-Pola, DMD MedTech optotipi), autorefraktokeratometrija (Indo, eRK-10) i topografija rožnice (Pentacam, OCULUS). Svi parametri su mjereni prije i nakon korekcije KL te nakon 2 mjeseca nošenja leća. Isključujući kriteriji bili su: patologija prednjeg i stražnjeg segmenta oka, ambliopija, prijašnji nosioci KL i prethodni kirurški zahvati na oku.

### **Rezultati:**

U svih ispitanika utvrđena je statistički značajno bolja vidna oštrina s KL u usporedbi s naočalnom korekcijom. Korekcija s KL pokazala je poboljšanje kontrastne osjetljivosti i vida u sumrak u usporedbi s naočalnom korekcijom. Vidne performanse bile su statistički značajno bolje u skupini korigiranoj s TPKL u usporedbi s grupom korigiranom s MKL. Nije bilo značajne promjene u keratometrijskim vrijednostima mjerenim autorefraktokeratometrom i topografijom rožnice na kontroli nakon 2 mjeseca nošenja KL.

### **Zaključak:**

Nošenje KL pokazalo je poboljšanje vidnih performansi u usporedbi s naočalnom korekcijom. TPKL pokazale su superiornost u odnosu na MKL u vidnoj oštrini, kontrastnoj osjetljivosti i vidu u sumrak.

### **Title:**

Twilight Saga – Is Life Black and White?

### **Authors:**

Aida Kasumović, Iva Krolo, Ivana Radman, Maja Malenica Ravlić, Zoran Vatavuk

### **Institution:**

University Hospital Center Sestre milosrdnice, Zagreb, Croatia

### **Aim:**

To assess the visual function before and after correction with soft and rigid gas permeable contact lenses (CLs) in healthy subjects as well as their visual performance, including contrast sensitivity (CS) with spatial frequency, twilight vision (TV), visual acuity, and corneal topography parameters.

### **Patients and methods:**

60 eyes corrected with soft contact lenses (SCLs) and 30 eyes with rigid gas permeable contact lenses (RGPCls) were enrolled in this prospective study. All patients underwent following measurements: best spectacle-corrected visual acuity (BSCVA), best contact lens-corrected visual acuity (BCLCVA), TV and CS (Vista Vision Far-Pola, DMD MedTech charts), autorefractokeratometry (Indo, eRK-10) and corneal topography (Pentacam, OCULUS). All parameters were evaluated before and after CLs fitting and 2 months after baseline. Exclusion criteria included anterior and posterior segment pathology, amblyopia, prior contact lens wear and ocular surgery.

### **Results:**

All eyes showed better BCLCVA compared to BSCVA. CLs wear showed improvement of CS and TV compared to spectacles. Visual performance was statistically significantly better in group fitted with RGPCls as oppose to those with SCLs. There were no statistically significant changes in keratometry values measured by autorefractokeratometer and corneal topography at 2-months follow-up.

### **Conclusion:**

CLs wear improved visual performance when compared to spectacles. RGPCls showed superiority to SCLs in visual acuity, CS and TV.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

Titula / Title:

Dr.

Specijalizant / Resident

### **Ime i prezime / First and Last Name:-First**

Aida

### **Ime i prezime / First and Last Name:-Last**

Kasumović

### **103. Ivana Valković Antić**

#### **Naslov:**

Optička koherentna tomografska angiografija peripapilarne retinalne kapilarne mreže u pacijanata nakon akutne glaukomske atake

#### **Autori:**

Ivana Valković Antić, Katia Novak Lauš, Aida Kasumović, Zoran Vatavuk

#### **Ustanova:**

Klinički bolnički centar Rijeka, Klinički bolnički centar Sestre milosrdnice

#### **Cilj:**

Izmjeriti promjeni retinalne kapilarne mreže u očima sa anamnezom akutne glaukomske atake na jednom oku

#### **Bolesnici i metode:**

U periodu od mjesec dana, u veljači 2019. godine u Kliničkom bolničkom centru Sestre milosrdnice, u kabinetu za glaukom na kontrolni pregled javilo se 5 pacijenata sa anamnezom prethodne glaukomske atake na jednom oku. Oči sa anamnezom akutne glaukomske atake činile su ispitivanu skupinu. Kontrolna skupina činile su kontralateralne oči bez anamnističkih podataka o akutnoj glaukomskoj ataki. Svi pacijenti bili su podvrgnuti kompletном oftalmološkom pregledu, ispitana je vidna oštrina, intraokularni tlak, učinjeno je vidno polje. SD-OCT-om učinjen je strukturalni OCT prikaz kao i OCT angiografija. Strukturani OCT omogućio je prikaz debljine retinalnog sloja živčanih niti i ganglijskih stanica makule. OCT-A prikazao je promjene u peripapilarne kapilarne gustoće.

#### **Rezultati:**

U pacijenata sa anamnezom jednostrane glaukomske atake vidi se atenuacija vaskularne mreže i evidentni su fokalni kapilarni ispadci na zahvaćenom oku. Smanjenje gustoće vaskularne mreže pozitivno korelira sa smanjenjem debljine RNFL-a i GCC-a izmijerenim strukturalnom OCT-om. Gustoća vaskularne peripapilarne kapilarne mreže značajno je smanjena u usporedbi sa kontralateralnim, nezahvaćenim okom neovisno o stabilnoj vrijednosti intraokularnog tlaka i vremenu proteklom od nastupa akutne glaukomske atake.

#### **Zaključak:**

Gustoća vaskularne peripapilarne mreže značajno je smanjena u usporedbi sa kontralateralnim, nezahvaćenim okom neovisno o stabilnoj vrijednosti intraokularnog tlaka i vremenu proteklom od nastupa akutne glaukomske atake.

Title:

Optical coherence tomography angiography of the peripapillary retina after the acute congestive primary angle-closure

Authors:

Ivana Valković Antić, Katia Novak Lauš, Aida Kasumović, Zoran Vatavuk

Institution:

Clinical hospital center Rijeka, Clinical hospital center Sestre milosrdnice

**Aim:**

To measure the change of retinal vessel density in eyes with a history of acute primary angle closure glaucoma in one eye.

Patients and methods:

**In February, 2019, in Clinical hospital center Sestre Milosrdnice, Department of glaucoma, 5 patients** with history of unilateral acute glaucoma attack underwent regular examination control. Eyes with acute PACG constituted the case group. Contralateral eyes without attack constituted the control. All patients underwent ophthalmic examinations including best-corrected visual acuity, intraocular pressure, and visual field (VF). Spectral-domain optical coherence tomography (SD-OCT) was used to obtain both structural OCT and OCT angiography (OCTA). Structural OCT scans provided thickness measurements of the peripapillary retinal nerve fiber layer (RNFL) and macular ganglion cell complex (GCC). OCTA was used to measure all-plexus peripapillary retinal VD.

**Results:**

The vascular network was visibly attenuated and focal capillary dropout was evident in acute PACG eyes. In acute PACG eyes, peripapillary retina VD was positively correlated with RNFL and GCC thicknesses measured with structural OCT. The peripapillary vessel density in acute PACG eyes was reduced compared to the unaffected eyes independent on the time when the attack happened.

**Conclusion:**

In acute PACG eyes, peripapillary retinal VD decreased significantly compared with the contralateral unaffected eyes.

This finding is not relevant with time and duration of the acute congestive angle-closure glaucoma.

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SEKCIJU ZA GLAUKOM

Titula / Title:

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**Ime i prezime / First and Last Name:-First**

Ivana

**Ime i prezime / First and Last Name:-Last**

Valković Antić

## **104. Ivan Škegro**

### **Naslov:**

Kombinirana operacija fakoemulzifikacije i postavljanja amnijske membrane kod bolesnice s perforacijom rožnice i intumescentnom mrenom

### **Autori:**

Ivan Škegro, Josip Knežević, Tomislav Kuzman, Sanja Masnec, Miro Kalauz

### **Ustanova:**

Klinika za očne bolesti Kliničkog Bolničkog Centra Zagreb i Medicinskog fakulteta Sveučilišta u Zagrebu

### **Cilj:**

Prikazati operacijski zahvat fakoemulzifikacije intumescentne mrene i postavljanja amnijske membrane na perforiranu rožnicu.

### **Bolesnici i metode:**

Prikaz slučaja 62 godišnje bolesnice koja je primljena radi spontane perforacije rožnice lijevog oka. Perforacija rožnice je rezultat ekspozicijskog keratitsa i ulkusa zbog posttraumatskog lagoftalmusa. Viđen na lijevom oku je bio osjet svjetla i projekcija. Bellov fenomen nije očuvan. Prisutna je atalamija i intumescentna katarakta. U istom aktu učinjena je fakoemulzifikacija katarakte te postavljena amnijska membrana u perforaciju rožnice.

### **Rezultati:**

Poslijeoperacijski oporavak je protekao uredno uz kompletno zatvaranje rožničnog defekta i održanu prednju očnu sobicu. Vid nakon oporavka je iznosio 0.7 po Snellenu.

### **Zaključak:**

Kombiniranim operacijom uklanjanja zamućene leće i postavljanja amnijske membrane na perforiranu rožnicu, došlo je do zadovoljavajućeg oporavka vidne oštine te je izbjegnuta potreba za keratoplastikom.

### **Title:**

Combined phacoemulsification and amniotic membrane graft surgery in patient with corneal perforation and intumescent cataract

### **Authors:**

Ivan Škegro, Josip Knežević, Tomislav Kuzman, Sanja Masnec, Miro Kalauz

### **Institution:**

Department of Ophthalmology of University Hospital Centre Zagreb and University of Zagreb School of Medicine

### **Aim:**

To show phacoemulsification of intumescent cataract and grafting of amniotic membrane in corneal perforation.

**Patients and methods:**

A case report of a 62-year-old patient admitted for spontaneous corneal perforation of the left eye. Corneal perforation is the result of exposure keratopathy and ulceration due to posttraumatic lagophthalmos. The best corrected visual acuity on the left eye was a sense of light and projection. Bell's phenomenon was not preserved. There was athalamy and an intumescent cataract. Cataract phacoemulsification and amniotic membrane grafting were performed in the same act.

**Results:**

The postoperative recovery was without any complications with the complete closure of the corneal defect. The best corrected visual acuity was 0.7 according to Snellen charts.

**Conclusion:**

The combined surgery of phacoemulsification and amniotic membrane grafting on the perforated cornea achieved a satisfactory recovery of visual acuity with avoidance of the need for penetrating keratoplasty.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU

Titula / Title:

Dr.

**Specijalist**

Ime i prezime / First and Last Name:-First

Ivan

**Ime i prezime / First and Last Name:-Last**

Škegro

## **105. Tatjana Topalović**

### **Naslov:**

Atipičan slučaj korioretinitisa uzrokovanih Borreliom burgdorferi

### **Autori:**

Tatjana Topalović, Vlatka Brzović Šarić, Borna Šarić

### **Ustanova:**

Klinika za očne bolesti, Fakultet za dentalnu medicinu i zdravstvo Osijek, Medicinski fakultet Osijek, Sveučilište Josip Juraj Strossmayer u Osijeku, Klinička bolnica Sveti Duh, Zagreb.

### **Cilj:**

Prikazati dijagnostiku i liječenje korioretinitisa uzrokovanih Borreliom burgdorferi

### **Bolesnici i metode:**

47-

godišnji pacijent unatrag 4 dana primjećuje zamagljeniji vid na lijevom oku. Inače je zdrav, ne uzima nikakvu terapiju. Prije 2 mjeseca je bio na planinarenju. Nakon povratka primjetio je crvenilo s unutarnje strane natkoljenice te se javio svom liječniku obiteljske medicine, koji mu je ordinirao antibiotski u terapiju kroz 6 dana. Pri dolasku učini se kompletan oftalmološki pregled. Vidna oštrina na desnom oku bila je 1.0, a na lijevom oku 0.6, nalaz prednjeg segmenta oka obostrano je bio uredan. Pregledom očne pozadine uoči se uredan nalaz stražnjeg segmenta desnog oka, a lijevo postekvatorijalno uoče se multiple, ovalne, blijede lezije, bez upalnih promjena u staklastom tijelu.

### **Rezultati:**

Već nakon 8 dana došlo je do značajnog kliničkog poboljšanja. Vidna oštrina na lijevom oku bila je 0.9-

1.0. Nalaz stražnjeg segmenta oka bio je također u značajnom poboljšanju, s regresijom korioretinalnih lezija. Nakon provedene terapije dokazano je odsustvo upalnih promjena.

### **Zaključak:**

Okularne manifestacije infekcije B. burgdorferi (Lajmske bolesti) mogu se prezentirati kao konjunktivitis, keratitis, iridociklitis, retinalni vaskulitis, koroiditis, optička neuropatija ili uveitis. Osim konjunktivitisa, koji se javlja u 10% slučajeva, ostale okularne manifestacije vrlo su rijetke.

Diferencijalna dijagnoza korioretinitisa je vrlo opsežna i kompleksna, stoga je pažljiva i detaljna anamneza, uz ciljanu dijagnostičku obradu, ključna u postavljanju pravilne dijagnoze i provođenju adekvatne terapije.

Iako se okularne manifestacije Lajmske borelioze najčešće liječe amoksicilinom, ceftriaksonom ili doksiciklinom, empirijsko liječenje azitromicinom, koji je inače lijek drugog izbora, je u ovom slučaju dovelo do poboljšanja.

### **Title:**

Atypical case of Borrelia burgdorferi chorioretinitis

### **Authors:**

Tatjana Topalović, Vlatka Brzović Šarić, Borna Šarić

**Institution:**

University Eye Clinic, Faculty of dental medicine and health care Osijek, Faculty of

**Aim:**

To present diagnosis and therapy of chorioretinitis caused by Borrelia burgdorferi

**Patients and methods:**

A 47- year old patient noticed blurred vision on his left eye in the last four days. Otherwise, he is healthy, not taking any chronic therapy. Two months ago, he's been hiking and few days after, he noticed redness on the medial side of his leg. His general practitioner prescribed him antibiotic for six days. Examination revealed visual acuity 1.0 on the right eye and 0.8 on the left eye. The anterior segment exam was unremarkable. Fundus exam of the right eye showed healthy vitreous, vascular and retinal structures, but on the left eye multiple, oval-shaped, whitish lesion were seen, with no inflammatory changes in vitreous. Multimodal imaging was performed (IR, AF, FA, ICG, OCT), as well as laboratory and serologic testing and chest radiography.

**Results:**

After only 8 days of treatment significant clinical improvement was seen. Visual acuity on the left eye was 0.9-

1.0 and chorioretinal lesions were in regression. After completing treatment, multimodal imaging was performed and changes were no longer found.

**Conclusion:**

Ocular manifestations associated with Lyme disease include conjunctivitis, keratitis, iridocyclitis, retinal vasculitis, choroiditis, optic neuropathy and uveitis. Except for conjunctivitis, which occurs in about 10 percent of patients, all of the other ocular manifestations are rare.

A broad spectrum of conditions can cause chorioretinitis, thus detailed medical history is crucial and with specific diagnostic tests can lead us to proper diagnosis and appropriate treatment.

Although ocular manifestations of Lyme disease are usually treated with doxycycline, amoxicillin or cefuroxime, azithromycin, as a second line drug, in this case led to a significant improvement.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Tatjana

**Ime i prezime / First and Last Name:-Last**

Topalović

## **106. Snježana Miljak**

### **Naslov:**

Korekcija vida u predškolskoj dobi sa RGP kontaktnim lećama - Dajmo im priliku!

### **Autori:**

Miljak S., Gjeldum A., Marković I.

### **Ustanova:**

Klinika za očne bolesti, KBC Split

### **Cilj:**

Tvrde plinopropusne leće, iako višekratno dokazane kao stedstvo koje najbolje korigira vid i obzirom na nove, kisik propusne materijale nemaju štetnih efekata na zdravlje oka, još uvijek se propisuju znatno manje, osobito kad su u pitanju mala djeca. Da li se tu radi o nedovoljnem iskustvu kontaktologa, nedovoljnoj opremljenosti ili uvriježenom mišljenju da se leće propisuju tek u tinejdžerskoj dobi? Ispitati ćemo sposobnost nošenja i održavanja kontaktnih leća u ranoj, dječjoj dobi, te istražiti postoji li i u kojoj mjeri poboljšanje vida kod djece koja naočalamama nisu postizala zadovoljavajuću vidnu oštrinu

### **Bolesnici i metode:**

Ovo je retrospektivna studija iz podataka kartoteke naše ambulante za kontaktne leće. Uključeno je 46 pacijenata u dobi od 4-

7 g (prosječna dob 5,8 g). Ispitano je 95 očiju. Pacijentima je ispitan vid u naočalamama, pregledani su na biomikroskopu, postavljene su tvrde plinopropusne leće i ispitan je vid s njima.

### **Rezultati:**

Srednja vrijednost vidne oštchine u naočalamama, ispitane na Snelenovim optotipima iznosila je 0,47. Nakon postavljanja kontaktnih leća inicijalna vidna oština u prosjeku je iznosila 0,67, a nakon perioda nošenja od najmanje godinu dana, pacijenti su u prosjeku dostigli vid od 0,77, dakle poboljšanje za 0,3 u odnosu na naočale. Prosječno vrijeme inicijalnog navikavanja na leće bilo je oko pola sata, samo troje nije nismo uspjeli postaviti leće jer to nisu dozvolili. Nakon perioda od godinu dana 15 % pacijenata je odustalo od nošenja kontaktnih leća. Niti jedno dijete nije razvilo komplikacije na prednjem očnom segmentu.

### **Zaključak:**

Cilj nam je bio revalorizirati RGP kontaktne leće kao izvanrednu opciju u dječjoj dobi, budući da uz najbolji vid, uzrokuju vrlo malo nuspojava, najjeftinije su, jednostavne za rukovanje, te dostupne u neograničenom broju parametara. Mala djeca su izuzetno dobri nositelji leća i često nas iznenade svojom spremnošću, kako u nošenju, tako i u njezi leća. Naravno da je potreban nadzor i suradljivost roditelja, kojima treba jasno predočiti zbog čega je to najbolja opcija za njihovo dijete.

### **Title:**

Fitting RGP contact lenses to preescholers - Give them a chance

### **Authors:**

Miljak S., Gjeldum A., Marković I.

### **Institution:**

Department of Ophthalmology, University Hospital Centre Split

**Aim:**

RGP contact lenses are underutilized for small children, due to practitioner inexperience, lack of proper equipment or perceived RGP intolerance in children. We explored the safety, dexterity and overall visual improvement over the course of RGP contact lenses on children which were not able to achieve satisfied vision with spectacles.

**Patients and methods:**

This was a retrospective analysis case series study. Clinical records of 46 patients aged from 4-7 (avg 5,8) years old were included. They were referred to us for fitting RGPs, after failing to achieve satisfied vision with spectacles. At the first visit we examined visual acuity with glasses on Snellen chart, then they were fitted with RGP contact lenses. We also examined them on biomicroscope.

**Results:**

46 subjects and 95 eyes were included. The mean baseline BCVA, with glasses was 0,47 on Snellen chart. After fitting with contact lenses, mean BCVA was 0,67. After a period of at least one year BCVA improved to 0,77, which is 0,3 better than initial, spectacle records. Average time of initial adaptation to lenses was about one half of hour, only three of children haven't been fitted. After one year period 15 percent RGPs dropped out due to intolerance. There were no adverse events secondary to contact lens use in any patients.

**Conclusion:**

Our goal was to reassess the value of RGP lenses and encourage eyecare professionals to use more frequently these excellent options in fitting children. RGPs are more cost effective than silicone lenses. They are available in unlimited parameters and have the best Dk/t values than all other lenses. So, give children a chance to wear lenses which are the best for their health and their vision.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJAU ZA KONTAKTOLOGIJU

Titula / Title:

Dr.

Specijalist

**Ime i prezime / First and Last Name:-First**

Snježana

**Ime i prezime / First and Last Name:-Last**

Miljak

## **107. Ines Donadić Manestar**

### **Naslov:**

Glaukom kao neurodegenerativna bolest

### **Autori:**

Ines Donadić Manestar

### **Ustanova:**

KBC Rijeka

### **Cilj:**

Povezanost glaukoma s drugim neurodegenerativnim bolestima

### **Bolesnici i metode:**

Pretraživanje baze podataka PubMed/Medline i kliničkih studija

### **Rezultati:**

Glaukom, Alzheimerova i Parkinsonova bolest su kronične, progresivne neurodegenerativne bolesti. Glaukom karakterizira progresivni gubitak retinalnih ganglijskih stanica. Kod određenog broja pacijenata usprkos provedenoj medikamentoznoj i kirurškoj terapiji dolazi do progresivnog gubitka vida. Sličnost sa drugim neurodegenerativnim bolestima je u selektivnom gubitku neurona, transsinaptičkoj degradaciji i povezanim mehanizmima oštećenja stanica.

### **Zaključak:**

Glaukom kao neurodegenerativna bolest i njen mehanizam nastanka usporedno s drugim neurodegenerativnim bolestima može pomoći u otkrivanju inovativnih strategija liječenja neovisnih o intraokularnom tlaku u cilju prevencije gubitka vida ( istraživanja o regeneraciji retinalnih ganglijskih stanica...) Dendritička patologija je rani znak neurodegenerativnih bolesti.

### **Title:**

Glaucoma as a neurodegenerative disease

### **Authors:**

Ines Donadić Manestar

### **Institution:**

Clinical Hospital Centre Rijeka

### **Aim:**

Linkage of glaucoma to other neurodegenerative diseases

### **Patients and methods:**

Search the PubMed/Medline Database and Clinical Studies

### **Results:**

Glaucoma, Alzheimer's and Parkinson's disease are chronic, progressive neurodegenerative diseases. Glaucoma is characterized by progressive loss of retinal ganglion cells. Despite a certain number of patients despite progressive medication and surgical therapy, progressive loss of vision occurs. Similarities with other neurodegenerative diseases are in selective loss of neurons, transsynaptic degeneration, and related mechanisms of cell damage.

**Conclusion:**

Glaucoma as a neurodegenerative disease and its mechanism of occurrence in conjunction with other neurodegenerative diseases can help detect innovative intraocular pressure-independent strategies to help prevent loss of vision (retinal ganglion cells regeneration research etc.) Dendritic pathology is an early sign of neurodegenerative diseases.

**Kongres / Congresse:**

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Abstract category / Sažetak prijavljujem u:

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Titula / Title:

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Donadić Manestar

## **108. Ana Barbara Uršič**

### **Naslov:**

Preoperative preparation for cataract surgery in patients with dry eye and MGD in ESC Pfeifer- a Case report

### **Autori:**

Uršič Ana Barbara, Pfeifer Vladimir

### **Ustanova:**

OKC dr. Pfeifer

### **Cilj:**

Tear film quality is one of the most important factors in achieving high-quality outcomes and patient satisfaction in cataract surgery. Optical aberrations which eventually lead to inaccurate lens calculations are more common in patients with dry eye disease than in patients with normal tear film. Therefore, it is very important to diagnose and manage dry eye syndrome before cataract surgery. It is necessary to check for inconsistencies between measurements. Surgery should be delayed until the ocular surface is optimized.

### **Bolesnici i metode:**

In ESC (Eye Surgery Center) Pfeifer MGD and dry eye syndrome is diagnosed and therapy is carried out systematically at the first preoperative examination. Treatment for aqueous deficiency normally includes preservative-free artificial tears, topical steroid, and topical cyclosporine. MGD is usually treated with warm compresses, lid hygiene, tea tree oil, omega 3 supplements and E-eye treatment. A clinical case presentation of preoperative diagnosis and treatment prior to cataract surgery in a 77 years old patient with tear film deficiency and MGD.

### **Rezultati:**

Before deciding about surgery the keratometric values must be stable and consistent within less than 0,50 D of Cylinder and the axis of astigmatism should be stable in all measurements.

### **Zaključak:**

Better postoperative result and patient satisfaction are achieved when proper eye surface diagnosis and treatment are carried out before cataract surgery.

### **Title:**

Preoperative preparation for cataract surgery in patients with dry eye and MGD in ESC Pfeifer- a Case report

### **Authors:**

Uršič Ana Barbara, Pfeifer Vladimir

### **Institution:**

OKC dr. Pfeifer

### **Aim:**

Tear film quality is one of the most important factors in achieving high-quality outcomes and patient satisfaction in cataract surgery. Optical aberrations which eventually lead to inaccurate lens calculations are more common in patients with dry eye disease than in patients with normal tear film. Therefore, it is very important to diagnose and manage dry eye syndrome before cataract surgery. It is necessary to check for inconsistencies between measurements. Surgery should be delayed until the ocular surface is optimized.

**Patients and methods:**

In ESC (Eye Surgery Center) Pfeifer MGD and dry eye syndrome is diagnosed and therapy is carried out systematically at the first preoperative examination. Treatment for aqueous deficiency normally includes preservative-free artificial tears, topical steroid, and topical cyclosporine. MGD is usually treated with warm compresses, lid hygiene, tea tree oil, omega 3 supplements and E-eye treatment. A clinical case presentation of preoperative diagnosis and treatment prior to cataract surgery in a 77 years old patient with tear film deficiency and MGD.

**Results:**

Before deciding about surgery the keratometric values must be stable and consistent within less than 0,50 D of Cylinder and the axis of astigmatism should be stable in all measurements.

**Conclusion:**

Better postoperative result and patient satisfaction are achieved when proper eye surface diagnosis and treatment are carried out before cataract surgery.

**Kongres / Congresse:**

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SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Ana Barbara

**Ime i prezime / First and Last Name:-Last**

Uršić

## **109. Tamara Mišljenović Vučerić**

### **Naslov:**

Promjene u vidnom polju kod pacijenata tocilizumabom liječenih arteritičkih ishemičkih optikoneuro patija

### **Autori:**

Tamara Mišljenović Vučerić 1, Tomislav Vidović 2, Tea Čaljkušić-Mance1, Srđan Novak3

### **Ustanova:**

1 KBC Rijeka, Klinika za oftalmologiju; Krešimirova 42, Rijeka 2 KBC Zagreb, Klinika za očne bolesti; Kišpatičeva 12, Zagreb 3 KBC Rijeka, Klinika za internu medicinu; Klinika za imunologiju i reumatologiju; Krešimirova 42, Rijeka

### **Cilj:**

Glukokortikoidi su i dalje standard kod liječenja gubitka vida u sklopu gigantocelularnog arteritisa. Relapsi i rekurentne epizode gubitka vida su česte, tako da je potrebno produženo liječenje glukokortikoidima, a time se povećava i mogućnost nuspojava. U svrhu smanjenja nuspojava, koriste se lijekovi kojima se "štede" glukokortikoidi. Tocilizumab, monoklonalno antitijelo na IL-6 receptor, pokazao se obećavajuće u mnogim studijama.

### **Bolesnici i metode:**

Prikazali smo dvije pacijentice sa gigantocelularnim arteritisom i oštećenjem vida. Prva pacijentica bila je liječena glukokortikoidima sedam mjeseci, a najmanja doza hidroksikortizona koja je stabilizirala bolest je bila 32 mg, prije nego se u terapiju uveo tocilizumab. Druga pacijentica liječena je tri mjeseca glukokortikoidima, a tocilizumab je uveden u th radi pogoršanja njezinog općeg stanja.

### **Rezultati:**

Prikazana je serija vidnih polja, kronološki, uz procijenjenu pogoršanja ovisno o vrsti terapije.

### **Zaključak:**

Tocilizumab ne može zamijeniti glukokortikoide u potpunosti, obzirom da se relapsi mogu dogoditi i za vrijeme bioloske terapije.

### **Title:**

Visual field changes in tocilizumab treated arteritic ischemic optic neuropathy

### **Authors:**

Tamara Mišljenović Vučerić 1, Tomislav Vidović 2, Tea Čaljkušić-Mance1, Srđan Novak3

### **Institution:**

1 Clinical Hospital Center Rijeka, Department of Ophthalmology; Krešimirova 42, Rijeka 2 University Hospital Centre, Department of Ophthalmology; Kišpatičeva 12, Zagreb 3 Clinical Hospital Center Rijeka, Department of Rheumatology and Clinical Immunology; Rijeka, Croatia

### **Aim:**

Glucocorticosteroids still remain the standard of care for the initial treatment of visual loss in giant cell arteritis. Relapses and recurrences are common thus prolonged glucocorticoid treatment is necessary and adverse events are expected. In order to minimize the adverse events, corticosteroid-sparing agents are being tried. Tocilizumab, a monoclonal IL-6 receptor blocker, has shown promising results in many studies.

**Patients and methods:**

We presented two patients with giant cell arteritis and visual deterioration. The first one was treated with glucocorticoids for seven months and the lowest dose that stabilized the disease was 32 mg of hydrocortisone, before introducing tocilizumab into therapy. The second one was treated with glucocorticoids for three months and tocilizumab was started because of deterioration of her general condition.

**Results:**

A sequence of visual fields, regarding the timeline, was evaluated considering different treatment modalities.

**Conclusion:**

Tocilizumab cannot replace glucocorticoids at all, because relapses can still occur even with biological therapy.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA NEUROOFTALMOLOGIJU

Titula / Title:

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Mišljenović Vučerić

## **110. Karla Randelović**

### **Naslov:**

Analiza progresije glaukomske bolesti uz pomoć optičke koherentne tomografije i vidnoga polja

### **Autori:**

Randelović K, Novak Lauš K, Zorić Geber M, Vatavuk Z

### **Ustanova:**

KBC Sestre milosrdnice, Klinika za očne bolesti, Vinogradska cesta 29, Zagreb

### **Cilj:**

Uspoređiti promjenu gubitka mrežničnih živčanih vlakana optičkom koherentnom tomografijom (SD ) i vidnim poljem (globalna Trend Analiza, Octopus 900 Haag – Streit International Vidno Polje) kod očiju s glaukomskom bolesti, gradirane pomoću modificirane Hodapp-Parrishove klasifikacije.

### **Bolesnici i metode:**

U retrospektivnu kohortnu studiju uključeni su bolesnici s glaukomom koji su praćeni najmanje 2 godine, sa snimljena minimalno 4 nalaza optičke koherentne tomografije i 5 pouzdana nalaza vidnoga polja. Praćeni su parametri gubitka mrežničnih živčanih vlakana i progresije vidnoga polja, te su dobiveni i rezultati uspoređivani McNemarovim testovima.

### **Rezultati:**

Ukupno 40 očiju, 20 pacijenata (srednje životne dobi  $67.8 \pm 6.4$  godina) su uključeni i praćeni  $60.64 \pm 2.22$  mjeseci. 12 od 40 očiju (30%) pokazala su progresiju u oštećenju mrežničnih živčanih vlakana, 6 očiju (15%) progresiju na vidnome polju. Oči s rano do umjerenim glaukomskim oštećenjima pokazala su značajno veću progresiju na prikazu optičkom koherentnom tomografijom u usporedbi s vidnim poljima ( $P < 0.001$ ). Uznapredovanje oštećenja mrežničnih živčanih vlakana i vidnoga polja se je ranije uočilo gledajući prosječan broj mrežničnih živčanih vlakana, i to donji kvadrant, nego prikaz srednje vrijednosti odstupanja vidnoga polja.

### **Zaključak:**

Napredovanje glaukomske bolesti u ranijem stadiju prikazano optičkom koherentnom tomografijom ( SD) bilo je uočljivije nego progresija prikazana vidnim poljem. Strukturni i funkcionalni vid potrebno je uvijek pratiti kroz čitav tijek glaukomske bolesti, neovisno o stadiju oštećenja.

### **Title:**

Analysis of Glaucoma Progression Detection by Optical Coherence Tomography and Visual Field

### **Authors:**

Randelović K, Novak Lauš K, Zorić Geber M, Vatavuk Z

### **Institution:**

University Hospital Center „Sestre milosrdnice“, Department of Ophthalmology, Vinogradska cesta 29, Zagreb

### **Aim:**

To compare the detection and rates of progressive retinal nerve fiber layer (RNFL) loss with spectral-domain (SD) OCT and visual field loss using Global Trend Analysis (Octopus 900 Haag – Streit International Visual Field Analyser) in glaucomatous eyes classified by modified Hodapp-Parrish grading scale.

**Patients and methods:**

In retrospective cohort study glaucoma patients were included with at least 2 years of follow up and minimum of 4 SD-OCT and 5 reliable VF examinations. Rates of RNFL and VF loss were calculated, and progression estimates were compared using generalized estimating equations and McNemar's tests.

**Results:**

A total of 40 eyes of 20 patients (mean age  $67.8 \pm 6.4$  years) were included with mean follow-up of  $60.64 \pm 12.22$  months. Overall, 12 of 40 eyes (30%) showed RNFL progression, and 6 eyes (15%) showed VF progression. Eyes with mild glaucoma showed significantly more progression on SD-OCT compared with VF ( $P < 0.001$ ). RNFL and VF progression showed faster rates of loss in average RNFL, inferior RNFL, compared with VF mean deviation.

**Conclusion:**

SD-

OCT progression was significantly more common than VF progression in glaucomatous eyes classified with early and severe disease. Structure and function should be monitored closely across the entire spectrum of glaucoma severity.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

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Randđelović

## **111. Eva Kos**

### **Naslov:**

Tri-četiri-sad!

### **Autori:**

Eva Kos, Mirjana Bjeloš, Mladen Bušić

### **Ustanova:**

Klinika za očne bolesti, Fakultet za dentalnu medicinu i zdravstvo Osijek, Medicinski fakultet Osijek, Sveučilište Josip Juraj Strossmayer u Osijeku, Klinička bolnica „Sveti Duh“, Zagreb

### **Cilj:**

Prikazati važnost korištenja testova kolornog vida za ispitivanje tritan i tetartan osi pri dijagnosticiranj u upalnih neuroloških bolesti.

### **Bolesnici i metode:**

Tri pacijenta u dobi od 6, 9 i 11 godina upućeni su iz drugih bolničkih ustanova u Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam, Kliničke bolnice „Sveti Duh“ zbog sumnje na optički neuritis. Obradom u drugim ustanovama kod dva pacijenta MRI je ukazalo na demjelinizacijske lezije CNS-a, bez zahvaćanja vidnog živca. U jednog pacijenta MRI je otkrio lezije u području vidnog živca. Niti jedan od tri pacijenta nije pokazivao kliničke znakove optičkog neuritisa jer je pregled koji je uključivao određivanje vidne oštchine, pregled prednjeg i stražnjeg očnog segmenta biomikroskopom, te test kolornog vida Ishiharinim pseudoizokromatskim tablicama bio uredan. Na našoj je Klinici dodatno učinjeno testiranje i Langovim testom, test kolornog vida po Lanthonyu 15 hue, CSV-1000, OCT makule, OCT PNO te pattern VEP.

### **Rezultati:**

Test Ishiharinim pseudoizokromatskim tablicama ukazivao je na uredan kolorni vid u sva tri bolesnika, no testiranjem kolornog vida testom na boje po Lanthonyu 15 hue kod sva tri pacijenta nađu se ispadajući kolornog vida u tritan i tetartan osi. Dva pacijenta koja su već dobivala kortikosteroidnu terapiju imala su uredan nalaz pattern VEP ispitivanja te su ispadajući kolornog vida bili jedini indikator optičkog neuritisa.

### **Zaključak:**

Kolorni vid nužno je testirati kod svih pacijenata sa sumnjom na optički neuritis, budući da ispadajući kolornog vida perzistiraju i nakon potpunog oporavka spacijalnog vida. Upravo su ispadajući u žuto-plavom spektru oni koji dominiraju u akutnoj fazi optičkog neuritisa. Stoga, testiranje kolornog vida samo Ishiharinim pseudoizokromatskim tablicama koje ispituju samo protan i deutan osi može dati lažno negativne rezultate, što posljedično dovodi do neprepoznavanja optičkog neuritisa i propuštanja po stavljanja ispravne dijagnoze. Ključno je, dakle, koristiti odgovarajući test kolornog vida odnosno testirati i tritan i tetartan osi kako bi životno i za vid ugrožavajuće upalne bolesti CNS-a moglo biti pravovremeno prepoznate i liječene. Neprepoznavanje ON može biti osobito pogubno za vid u pedijatrijskih pacijenata.

### **Title:**

Red and green blue my mind

**Authors:**

Eva Kos, Mirjana Bjeloš, Mladen Bušić

**Institution:**

University Eye Clinic, Faculty of Dental Medicine and Health Osijek, Faculty of Medicine Osijek, University Josip Juraj Strossmayer in Osijek, University Hospital „Sveti Duh“, Zagreb

**Aim:**

To demonstrate the importance of color vision testing (CV) for tritan and tetartan axes in evaluation of severely disabling neurologic diseases.

**Patients and methods:**

Three patients aged 6, 9 and 11 years were referred to Reference Centre of Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strabismus for presumed optic neuritis (ON). Two patients demonstrated demyelinating CNS lesions on MRI, but with no optic nerve involvement. In one patient MRI revealed lesions of the optic nerve. None of the patients demonstrated signs of ON disease as their visual acuity, slit-lamp biomicroscopy, fundus examination and Ishihara test were unremarkable. At our Clinic, all patients underwent Lang test, Lanthony 15 hue test, CSV-1000 test, macula and optic nerve OCT, and pattern VEP.

**Results:**

All patients (3/3) had normal CV as tested with Ishihara plates, but Lanthony 15 hue test evidenced defects in tritan and tetartan axes. In two patients who were already under treatment, pVEPs were unremarkable, and color vision deficiency was the only sign of ON disease. The prevalence of CV deficiency in our case series was 100%, which is in accordance with literature reports.

**Conclusion:**

Testing CV is of utmost importance in subjects with presumed ON due to high prevalence of CV deficiency that ensues even after resolution of spatial vision defects. As blue-yellow defects prevail in the acute phase of the ON, Ishihara plates designed to test only protan and deutan axes could give false-negative results and misdiagnose ON. Thus, it is imperative not to misdiagnose severely disabling ON and to use color vision tests that assess tritan and tetartan axes in addition. Misdiagnosing ON could be particularly devastating in pediatric patients.

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Abstract category / Sažetak prijavljujem u:

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Titula / Title:

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Kos

## **112. Barbara Dawidowsky**

### **Naslov:**

Paralitički strabizam i papiledem kao rijetki znak okularne Lyme borelioze u 9 -godišnje djevojčice

### **Autori:**

Barbara Dawidowsky, Neda Striber, Diana Franceschi

### **Ustanova:**

Klinika za dječje bolesti Zagreb

### **Cilj:**

Prikazat ćemo slučaj 9 - godišnje djevojčice s meningitisom uzrokovanim Boreliom burgdorferi s vod ećim oftalmološkim simptomima

### **Bolesnici i metode:**

prikaz slučaja meningitisa uzrokovog Borelliom burgdorferi te prikaz oftalmoloških simptoma koji su u kliničkoj slici bili vodeći simptomi. Konvergentni paralitički strabizam, diplopija i edem PNO pri sutni su kao tipični znakovi rijetke okularne Lyme borelioze

### **Rezultati:**

prikaz algoritma dijagnostike i liječenja rijetke okularne Lyme borelioze

### **Zaključak:**

prikaz algoritma dijagnostike i liječenja rijetke okularne Lyme borelioze

### **Title:**

Paralytic strabismus and papilledema as a rare signs of ocular Lyme borreliosis

### **Authors:**

Barbara Dawidowsky, Neda Striber, Diana Franceschi

### **Institution:**

Childrens Hospital Zagreb

### **Aim:**

a case report of a 9 year girl with Lyme borreliosis presented with primary ophthalmologic symptoms

### **Patients and methods:**

a case report of Lyme boreliosis meningitis with rare ophthalmologic symptoms like diplopia, paralitic strabismus and papilledema usually found in rare ocular Lyme borreliosis

### **Results:**

algorithm of diagnostic and therapeutic procedures in our patient with Lyme meningitis

### **Conclusion:**

algorithm of diagnostic and therapeutic procedures in our patient with ocular Lyme boreliosis

**Kongres / Congresse:**

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SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM

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## **113. Barbara Dawidowsky**

### **Naslov:**

Insuficijencija konvergencije i ADHD

### **Autori:**

Barbara Dawidowsky, Aleksandra Klobučar, Irma Barišić

### **Ustanova:**

Klinika za dječje bolesti

### **Cilj:**

Prikazat ćemo povezanost insuficijencije konvergencije s poremećajem pažnje s hiperaktivnošću u djece

### **Bolesnici i metode:**

Retropspektivno istraživanje. Pokazat ćemo povezanost insuficijencije konvergencije (IK) s poremećajem pažnje s hiperaktivnošću (ADHD), prikazati vrijednosti blize točke konvergencije i binokularnog vida prije i poslije provođenja ortoptičkih vježbi, rezultate testova pažnje prije i poslije ortoptičkih vježbi te utjecaj insuficijencije konvergencije na pažnju djece s ADHD-om.

### **Rezultati:**

Rezultati mjerjenja blize točke konvergencije i binokularnog vida prije i poslije ortoptičkih vježbi ukazuju na uspješno liječenje IK u pacijenata s ADHD-om. U svih ispitanika konvergencija je poboljšana kao i raspon binokulanog vida. Test opterećenja pažnje d2 nakon provedenih ortoptičkih vježbi ukazuje na poboljšanje pažnje. Moguće je da je insuficijencija konvergencije koja je prisutna u 36% ispitanika s ADHD-om jedan od mogućih uzroka poremećaja pažnje kod djece s ADHD-om.

### **Zaključak:**

U zdravoj populaciji djece pojavnost insuficijencije konvergencije iznosi samo 5-7 % u usporedbi s 36% kod djece s ADHD-om. Moguće je da je poremećaj konvergencije predstavlja komorbiditet u djece s ADHD-om

### **Title:**

Convergence insufficiency and ADHD

### **Authors:**

Barbara Dawidowsky, Aleksandra Klobučar, Irma Barišić

### **Institution:**

Childrens Hospital Zagreb

### **Aim:**

to demonstrate a connection between convergence insufficiency (CI) and Attention Deficit/Hyperactivity Disorder (ADHD) in children

### **Patients and methods:**

a retrospective study that reports connection between CI and ADHD was preformed using orthoptic exercises to enhance near point of convergence (NPC) and binocular vision, measuring values of NPC and binocular potential, tests of attention before and after the orthoptic exercises.

**Results:**

Our results showed improvement in all aforementioned values implying that convergence insufficiency found in more than 36 % patients with ADHD might play an important role in attention deficit of ADHD patients

**Conclusion:**

It is possible that CI is a comorbid disorder in ADHD since in healthy population incidence of CI is only 5-7%, comparing to 36% in children diagnosed with ADHD

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Abstract category / Sažetak prijavljujem u:

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## **114. Leon Marković**

### **Naslov:**

Koliko kontrola nakon operacije mrene trebamo?

### **Autori:**

Leon Marković, Damir Bosnar, Mladen Bušić, Mirjana Bjeloš, Biljana Kuzmanović Elabjer, Senad Ramić

### **Ustanova:**

Klinika za očne bolesti, Medicinskog fakulteta Sveučilišta J.J. Strossmayera u Osijeku, Klinička bolnica „Sveti Duh“ u Zagrebu

### **Cilj:**

Svrha našeg rada je analiza učestalosti i potrebe provođenja postoperativne kontrole nakon operacije mrene u medicinskoj praksi.

### **Bolesnici i metode:**

Koristeći ključne riječi analizirane su smjernice oftalmoloških društava te relevantne studije.

### **Rezultati:**

Pretraživanjem dostupne literature skupljeno je i analizirano 20 radova i 6 smjernica oftalmoloških društava. Prema većini dostupnih smjernica preporuča se učiniti prvu kontrolu nakon operacije mrene isti dan ili dan nakon. Dodatni termini se dogovaraju u slučaju nastupa komplikacija. U NICE smjernicama se predlaže kod pacijenata s nekomplikiranom mrenom kontrola po potrebi. Sljedeća kontrola prema svim smjernicama je za 6 do 8 tjedana radi određivanja naočalne korekcije. Analizom dostupnih radova najčešće komplikacije nakon operacije mrene su edem rožnice, nabori Descemetove membrane, povišenje intraokularnog tlaka te postoperativni uveitis. Faktori koji utječu na povećan rizik pojave komplikacija nakon operacije mrene su komplikirana mrena, manje iskusni operateri te pacijenti s rekurentnim uveitisom ili stražnjim sinehijama. U navedenim slučajevima prva kontrola bila bi unutar 24 sata od operacije mrene, dok za pacijente s nekomplikiranom mrenom nema jasnih dokaza potrebitosti **postoperativne kontrole dan nakon.**

### **Zaključak:**

Uzimajući u obzir analizu rezultata radova, trenutne preporuke su da prve postoperativne kontrole unutar 24 sata od operacije imaju statističko uporište kod pacijenata s visokim rizikom za razvoj komplikacija, dok za nekomplikirane pacijente nema jasnih preporuka. Prema dostupnim smjernicama oftalmoloških društava većina navodi preporuku obvezne kontrole unutar 24 sata od operacije, te daljnjih kontrola u slučaju potrebe, odnosno do određivanja naočalne korekcije.

### **Title:**

How many postoperative visits after cataract surgery do we need?

### **Authors:**

Leon Marković, Damir Bosnar, Mladen Bušić, Mirjana Bjeloš, Biljana Kuzmanović Elabjer, Senad Ramić

### **Institution:**

University Eye Clinic, Faculty of Medicine of J.J. Strossmayer University, Osijek, University Hospital "Sveti Duh", Zagreb, Croatia

**Aim:**

The purpose of our work is to analyze the need and frequency of the postoperative control in medical praxis.

**Patients and methods:**

Using the keywords, we analyzed the ophthalmic societies guidelines and relevant studies.

**Results:**

We collected 20 articles and 6 ophthalmic society guidelines. According to the available guidelines, it is recommended to do the first check-up after cataract surgery on the same day or the day after. Additional check-ups are needed in case of complications. Reviewing the NICE guidelines, it is suggested not to offer in-person first-day review to patients after uncomplicated cataract surgery. The next control considering all guidelines would be 6 to 8 weeks after surgery to determine eyeglass prescription. Analyzing the available articles, the most common complications after cataract surgery are corneal edema, Descemet folds, elevated intraocular pressure and postoperative uveitis. Factors that increase the risk of complications after cataract surgery are complicated cataracts, less experienced surgeons, and patients with recurrent uveitis or posterior synechia. In these cases, the first control would be within 24 hours after cataract surgery, while, for patients with uncomplicated cataracts there is no evidence of need for postoperative control the day after.

**Conclusion:**

Considering the results of the articles analyzed, the current recommendations of the first postoperative check-up within 24 hours after cataract surgery are statistically important in patients with high risk of developing complications, while for uncomplicated patients there is no clear recommendation. According to the ophthalmic society guidelines, most of them recommend a mandatory control within 24 hours after surgery and, if necessary, further check-ups, or until determination of the eyeglass prescription.

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SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

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Marković

## **115. Marko Lukić**

### **Naslov:**

Autoimunosna retinopatija - prikaz slučaja

### **Autori:**

Dr Marko Lukic, FEBO Mr Mark Westcott, FRCOphth

### **Ustanova:**

Moorfields Eye Hospital NHS Trust

### **Cilj:**

Prezentacija postupka dijagnostickih metoda i liječenja zahtjevnog slučaja koji je cesto pogresno dijagnosticiran

### **Bolesnici i metode:**

Slučaj 30-  
godisnje zenske pacijentice koja je imala opseznu dijagnostiku obradu u sklopu interdisciplinarnog tima sastavljenog od oftalmologa, elektrofiziologa i onkologa

### **Rezultati:**

Tridesetogodisnja djevojka prvi put je pregledana na odjelu retina u lipnju 2018 godine. Simptomi mutnog vida na lijevog oku pocinju se javljati u siječnju 2018. Od tada se prezentira sa kronicnim cistoidnim makularnim edemom i stabilnom vidno ostrinom od 0.8 (6/9). Pacijentica je kratkovidna na oba oka. Na desnom oku pacijentica ima vid od 1.0 te nema prisutnih simptoma. Pacijentica ima u sklopu svoje povijesti bolesti gestacijski dijabetes. Negativna povijest bolesti na uzimanje retinotoksicnih preparata, atopije ili autoimunosnih bolesti. Vidno polje na lijevom oku bilo je koncentrično suzeno do 5 stupnjeva. Nije bilo znakova upale niti na jednom oku. Autoflorescencija te OCT snimke pokazale su ostecenje vanjskih slojeva retine uz ocuvanje slojeva u području foveje i parafoveje. FFA nije pokazala "leakage" boje u makuli. ERG je pokazao asimetriju u ostecenju cunjica i stапica medju ocima. Pacijentica je imala 3 doze pulsne intravenozne steroidne terapije sa minimalnim efektom. Pacijentica je trenutno još u dijagnostičkoj obradi radi postavljanja točne dijagnoze.

### **Zaključak:**

Na temelju dosadasnjih pretraga najvjerojatnije se radi o slučaju autoimunosne retinopatije. Trenutna obrada ima za cilj isključivanja malignih procesa.

### **Title:**

Autoimmune retinopathy - case report

### **Authors:**

Dr Marko Lukic, FEBO Mr Mark Westcott, FRCOphth

### **Institution:**

Moorfields Eye Hospital NHS Trust

### **Aim:**

To present diagnostic workup and management of a challenging case which is often misdiagnosed

**Patients and methods:**

A single case report of a 30-year old lady who had a comprehensive workup and who has been under interdisciplinary team of consultant ophthalmologists, electrophysiologists and systemic oncologists

**Results:**

A 30-year old lady attended Medical Retina clinic in June 2018. She has been noticing blurry vision on her left eye since January 2018. Since then, she has presence of chronic cystoid macular oedema on the left eye with stable visual acuity of 6/9. She is myopic on both eyes. The right eye has excellent visual acuity of 6/5 and patient is asymptomatic on that eye. The patient has history of gestational diabetes. Her medical history was negative for intake of retinotoxic medications, atopy and autoimmune conditions. The left visual field was constricted to the central 5 degrees. There were no clinical signs of active ocular inflammation in either eye. Autoflorescence imaging and OCT scans showed loss of the outer retina spare for the foveal and parafoveal region on the left eye and normal findings on the right eye. There was no leakage on FFA in left macular region. ERG findings showed asymmetry in affecting cone and rod systems between the eyes. Patient had a course of 3 pulses of intravenous methyprednisolone. She had a mild response on the treatment (decrease of CFT from 505 microns to 440 microns). The patient is still under investigations to make definite diagnosis.

**Conclusion:**

The current working diagnosis is likely autoimmune retinopathy. The patient is under investigations with respect of excluding malignant process as a cause of ocular symptoms.

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SEKCIJU ZA UVEA-u

Titula / Title:

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Marko

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Lukic

## **116. Zlatko Slezak**

### **Naslov:**

Uklanjanje subretinalne membrane kod vlastne forme degeneracije makule - da li je opsoletno

### **Autori:**

Zlatko Slezak, dr med.

### **Ustanova:**

Opcna bolnica Varazdin, Očni odjel

### **Cilj:**

Ukazati na alternativni pristup lijecenju vlastne forme degeneracije makule

### **Bolesnici i metode:**

#### **prikaz slučajeva**

#### **Rezultati:**

Ispiranjem submakularne krvi i uklanjanjem subretinalne neovaskularne membrane izbjegava se nastanak opsezne fibroze i otvara se mogućnost za neki drugi nacin lijecenja da bi se sacuvalo nesto vidne ostrine

### **Zaključak:**

Vlastna forma degeneracije makule uobičajeno se lijeci anti-VEGF preparatima. Nazalost postoje slučajevi kada takvo lijecenje nije ili prestaje biti učinkovito i bolest zavrsava nastankom opseznih oziljaka u makularnom području što je konacno stanje ove bolesti. Izbjegavanjem ovakvog tijeka otvara se mogućnost za daljnje lijecenje kao što je naprimjer transplantacija zilnice

### **Title:**

Removal of subretinal membrane in AMD - is it really obsolete

### **Authors:**

Zlatko Slezak, MD

### **Institution:**

General Hospital Varazdin, Department of Ophthalmology

### **Aim:**

To point out an alternative approach in the treatment of wet AMD

### **Patients and methods:**

case reports

### **Results:**

Submacular blood wash out and removal of subretinal CNV prevents heavy scarring and gives the opportunity for further treatment to preserve some useful eyesight

**Conclusion:**

Wet AMD is typically treated with some form of anti-VEGF medication. Unfortunately there are neglected cases and also situations when this treatment is or becomes ineffective what results in heavy scaring in macular region. By preventing development of such final stage of this disease there would be the possibility for some other form of treatment e.g. chorioconjunctival transplantation

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU

Titula / Title:

Dr.

Specijalist

**Ime i prezime / First and Last Name:-First**

Zlatko

**Ime i prezime / First and Last Name:-Last**

Slezak

## **117. Tamara Paravić**

### **Naslov:**

Prikaz slučaja - NMO spektar poremećaja

### **Autori:**

Tamara Paravić, dr.med., specijalizant oftalmologije, Tamara Mišljenović Vučerić, dr.med., specijalist oftalmologije i subspecialist neurooftalmologije, Doc.dr.sc.Maja Merlak, dr.med., oftalmolog, subspecialist prednjeg segmenta oka

### **Ustanova:**

KBC Rijeka

### **Cilj:**

Prikaz slučaja atipične forme optikoneuropatije. Diferencijalno dijagnostički uvijek treba posumnjati na atipični oblik optikoneuropatije koja se može skrivati iza kliničke slike tipičnog oblika kao što je npr. AION.

### **Bolesnici i metode:**

Prikaz slučaja 67- godišnje pacijentice

### **Rezultati:**

Prvu ataku pacijentica je imala 2016. godine koja se prezentirala s akutnim padom vida desnog oka. U srpnju 2018. pacijentica je imala drugu ataku koja se prezentirala akutnim gubitkom vida i edemom v idnog živca lijevog oka. Provela se pulsna glukokortikoidna terapija. Učinjenom neuroradiološkom ob radom u nalazu MR (mozga, orbita, cervikalne kralježnice) prikaze se stanjen desni optički živac cijel im tijekom kao i desna polovica hijazme, a unutar laboratorijskih nalaza nailazimo na prisutnost serop ozitivnih protutijela - aquaporin 4 At poz. Pacijentica je upućena u referentni centar za demijelinizacijske bolesti (KBC Zagreb) gdje se u terapiju uz već postojeći Medrol uvodi Imuran.

### **Zaključak:**

Pri obradi optikoneuropatije uvijek treba posumnjati i na atipičnu formu radi što adekvatnijeg i efikasnijeg liječenja pacijenata i sprječavanja trajnog gubitka vida.

### **Title:**

Case report - NMO spectrum disorders

### **Authors:**

Tamara Paravić, MD, ophthalmology resident, Tamara Mišljenović Vučerić, MD, ophthalmologist, neuro ophthalmologist, Doc.dr.sc. Maja Merlak, MD, ophthalmologist , subspeciality in anterior segment

### **Institution:**

KBC Rijeka

### **Aim:**

Case report of an atypical form of optic neuropathy. Differential diagnosis should always be suspected of atypical form of neuropathy that can hide behind the clinical picture of a typical form such as AION.

**Patients and methods:**

Case report of a 67 year old patient

**Results:**

The patient had her first attack in 2016 which presented with an acute vision loss in her right eye. In July 2018 the patient had a second attack which presented with acute vision loss and optic disc edema in her left eye. She underwent a pulse glucocorticoid therapy. The MR (brain, orbit, cervical spine) of the neuro - radiological treatment shows a thinner optic nerve as well as the right half of the chiasmus and the laboratory report showed the presence of seropositive antibodies - aquaporin 4 At pos. The patient has been sent to the reference center for demyelinating diseases (KBC Zagreb) where she was prescribed with Imuran along with the Medrol which she is already taking.

**Conclusion:**

When dealing with optic neuropathy one should always suspect an atypical form as well, for a more adequate and efficient treatment of the patient so as to prevent the complete and permanent loss of vision.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Tamara

**Ime i prezime / First and Last Name:-Last**

Paravić

## **118. Valentina Cigić**

### **Naslov:**

Vankomicin u viskoelastiku oponaša endoftalmitis

### **Autori:**

Cigić V, Kuzmanović Elabjer B, Šarić D, Bušić M, Bjeloš M, Pleše A

### **Ustanova:**

Klinika za očne bolesti, Fakultet dentalne medine i zdravstva Osijek, Medicinski fakultet Osijek Sveučilišta Josip Juraj Strossmayer u Osijeku, Klinička bolnica „Sveti Duh“, Zagreb.

### **Cilj:**

Upozoriti na fizičku nekompatibilnost između vankomicina i viskoelastika, koja oponaša endoftalmiti s.

### **Bolesnici i metode:**

Pacijentu u dobi od 34 godine učinjena je na našoj Klinici perforativna keratoplastika koja je prošla bez komplikacija. Na kraju operacije instilirano je profilaktički 1 mg/0,1 mL vankomicina u prednju oč u sobicu, a da prethodno nije ispran sav viskoelastik.

### **Rezultati:**

Šest sati nakon operacije pacijent se požalio na bol u operiranom oku. Zabilježeni su fotofobija, blefarospazam i blijedi edem vjeđa. Vidna oštrina kroz stenopeični otvor je po logMAR-u iznosila 1,0. Pregledom na biomikroskopu uočen je gusti, bijeli, sirasti sediment u prednjoj sobici uz odsustvo cilijarne injekcije i edema rožnice. Rožnični presadak je uredno pozicioniran, uz jednoliko zategnut šav te negativan Seidelov test. Tyndallov znak je bio negativan, zjenica okrugla i reaktivna. Leća i staklasto tijelo su bili prozirni. Intraokularni tlak izmjerena aplanacijskom metodom iznosio je 11 mmHg. Ultrazvukom je isključena druga patologija oka i orbite. Bol se smanjila na topičku primjenu tetraakaina. Laboratorijski testovi su isključili sistemnu upalu. Radna dijagnoza je bila precipitacija vankomicina u rezidualnom viskoelastiku, te se nije uvodila dodatna terapija osim topičkih kortikosteroida. Pacijent je praćen svaki sat do ukupno sedam sati nakon početka smetnji, kad je bol prestala. Nastavljen je učestalo praćenje sve do potpune resorpcije precipitata 19 sati nakon operacije.

### **Zaključak:**

Ovo je prva dokumentacija precipitacije vankomicina u viskoelastiku u prednjoj očnoj sobici. Cilj rad je ukazati na potrebu uvrštavanja ovog stanja u smjernice za prevenciju i liječenje endoftalmitisa budući da ta jatrogena komplikacija, iako oponaša endoftalmitis, ne zahtijeva liječenje.

### **Title:**

Precipitation of vancomycin mimicking acute endophthalmitis

### **Authors:**

Cigić V, Kuzmanović Elabjer B, Šarić D, Bušić M, Bjeloš M, Pleše A

### **Institution:**

University Eye Clinic, Faculty of dental medicine and health care Osijek, Faculty of Medicine Osijek,  
University Josip Juraj Strossmayer in Osijek, University Hospital "Sveti Duh", Zagreb

**Aim:**

To stress importance of physical incompatibility between vancomycin and viscoelastic mimicking endophthalmitis.

**Patients and methods:**

A 34-year-old white male underwent uneventful penetrating keratoplasty. Instillation of 1 mg / 0.1 mL of vancomycin into anterior chamber followed no attempts of meticulous viscoelastic irrigation.

**Results:**

Six hours later thick white material in the anterior chamber sedimented. Six hours after the surgery the patient complained of pain in the operated eye. Photophobia, blepharospasm and pale lid oedema were present with pinhole visual acuity of logMAR 1.0. No ciliary injection or corneal oedema were present. Graft was secured to the host cornea with equal tension along the suture and negative Seidel test. White, cheese-

like material, sedimented, irregularly bordered superiorly to the rest of the clear anterior chamber, was found. Tyndall was negative, pupil round and reactive. The lens and the vitreous body were clear. Applanation tonometry was 11 mmHg. Ultrasound documented no pathology of the eye and orbit. The pain decreased on tetracaine. Laboratory tests' results (complete blood count with differential and erythrocyte sedimentation rate) were unremarkable. Under the strong presumption that vancomycin precipitated in the residual viscoelastic no attempts to lavage the anterior chamber were undertaken. Ophthalmological follow up was performed hourly for seven hours until the pain resolved. Complete dissolution of precipitates ensued 19 hours following the surgery.

**Conclusion:**

This is the first documentation of vancomycin precipitation with viscoelastic in the anterior chamber of the eye. This should be acknowledged in guidelines for prevention and treatment of endophthalmitis as this iatrogenic complication mimicking endophthalmitis does not require any specific management.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Valentina

**Ime i prezime / First and Last Name:-Last**

Cigić

## **119. Arnes Čabrić**

### **Naslov:**

Operacija katarakte sa nestabilnim zonulama-prikaz slučaja

### **Autori:**

Čabrić Arnes,Adilović Melita,Čabrić Emir,Jusufović Vahid

### **Ustanova:**

JU Poliklinika sa dnevnom bolnicom Doboј jug

### **Cilj:**

Prikazati kako se može raditi operacija katarakte sa nestabilnim zonulama uz korištenje tenzionog prstena

### **Bolesnici i metode:**

Pacijent sa traumatskom subluksiranom kataraktom operisan uz korištenje kapsularnog tenzionog prstena

### **Rezultati:**

Muškarac starosti 62 godine

Povreda oka stara 6 mjeseci nastala udarcem tupim predmetom u lijevo oko

Anamnistički postepen pad vidne oštchine unazad 2 mjeseca

Preoperativno vidna oština ozljedenog oka iznosila je 0,1 sa okularnim pritiskom od 16 mmHg.

Ultrazvučni nalaz uredan

OCT nalaz uredan

Pregledom prednjeg segmenta lijevog oka ustanovi se posttraumatska non matura katarakta sa pokidanim zonulama 9 h – 12 h.

Postavi se indikacija za hirurški tretman u vidu operacije katarakte metodom fakoemulzifikacije sa ugradnjom intraokularne leće (IOL) kao i Capsular tension ringa (CTR) zbog nestabilnih zonula

7 dana nakon operacije vidna oština je bila 1,0.Postignuta je odlična vidna oština,operacija urađena bez intraoperativnih komplikacija i postignuta je zadovoljavajuća intraoperativna i postoperativna stabilnost inplantirane intraokularne leće.

### **Zaključak:**

SVAKA katarakta se lijeći jedino OPERATIVNO

Izbor operativne tehnike i vrste operacije ovisi o vrsti katarakte

Tenzioni ring je izvanredno pomoćno sredstvo prilikom operacija katarakte sa zonularnom slabošću ali ima svoja ograničenja i neophodna je pravilna procjena za njegovo korištenje

Tenzioni ring se koristi kako bi se ponovo uspostavila kapsularna kontura i sprječila kapsularna aspiracija, hernijacija vitreusa u prednju sobicu, IOL decentracija i zatvaranje kapsularnog otvora

### **Title:**

Operacija katarakte sa nestabilnim zonulama-prikaz slučaja

### **Authors:**

Čabrić Arnes,Adilović Melita,Čabrić Emir,Jusufović Vahid

**Institution:**

JU Poliklinika sa dnevnom bolnicom Doboj jug

**Aim:**

Prikazati kako se može raditi operacija katarakte sa nestabilnim zonulama uz korištenje tenzionog prstena

**Patients and methods:**

Pacijent sa traumatskom subluksiranom kataraktom operisan uz korištenje kapsularnog tenzionog prstena

**Results:**

Muškarac starosti 62 godine

Povreda oka stara 6 mjeseci nastala udarcem tupim predmetom u lijevo oko

Anamnestički postepen pad vidne oštine unazad 2 mjeseca

Preoperativno vidna oština ozljeđenog oka iznosila je 0,1 sa okularnim pritiskom od 16 mmHg.

Ultrazvučni nalaz uredan

OCT nalaz uredan

Pregledom prednjeg segmenta lijevog oka ustanovi se posttraumatska non matura katarakta sa pokidanim zonulama 9 h – 12 h.

Postavi se indikacija za hirurški tretman u vidu operacije katarakte metodom fakoemulzifikacije sa ug radnjom intraokularne leće (IOL) kao i Capsular tension ringa (CTR) zbog nestabilnih zonula

7 dana nakon operacije vidna oština je bila 1,0. Postignuta je odlična vidna oština, operacija urađena bez intraoperativnih komplikacija i postignuta je zadovoljavajuća intraoperativna i postoperativna stabilnost implantirane intraokularne leće.

**Conclusion:**

SVAKA katarakta se lijeći jedino OPERATIVNO

Izbor operativne tehnike i vrste operacije ovisi o vrsti katarakte

Tenzioni ring je izvanredno pomoćno sredstvo prilikom operacija katarakte sa zonularnom slabošću ali i ima svoja ograničenja i neophodna je pravilna procjena za njegovo korištenje

Tenzioni ring se koristi kako bi se ponovo uspostavila kapsularna kontura i sprječila kapsularna aspiracija, hernijacija vitreusa u prednju sobicu, IOL decentracija i zatvaranje kapsularnog otvora

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU

Titula / Title:

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

**Arnes**

Ime i prezime / First and Last Name:-Last

Čabrić

## **120. Tomislav Kuzman**

### **Naslov:**

Postoperativno smanjivanje debljine donorske rožnične lamele nakon konvencionalne stražnje slojevit e transplantacije rožnice

### **Autori:**

Tomislav Kuzman, Miro Kalauz, Ivan Škegro, Sanja Masnec, Ana Meter, Ivana Jonjić

### **Ustanova:**

KBC Zagreb, Klinika za očne bolesti Medicinskog fakulteta u Zagrebu

### **Cilj:**

Svrha ovog istraživanja je procjena postoperativne deturgescencije donorske rožnične lamele nakon k onvencionalne stražnje slojevite transplantacije rožnice (eng. Descemet's stripping automated endothelial keratoplasty - DSAEK).

### **Bolesnici i metode:**

U ovu prospективnu studiju uključeno je 55 očiju bolesnika (srednja dob  $70,9 \pm 9,4$  godina; žene 61,8 %; muškarci 38,2%,), kojima je učinjena stražnja slojevita transplantacija rožnice (eng. Descemet's stripping automated endothelial keratoplasty - DSAEK). Preoperativna debljina lamele mjerena je u očn oj banci ultrazvučnom pahimetrijom i uspoređena sa postoperativnom debljinom šest mjeseci nakon tr ansplantacije mjerena prednjom okularnom koherentnom tomografijom (a-OCT).

### **Rezultati:**

Centralna debljina donorske lamele smanjila se sa preoperativnih  $142 \pm 27 \mu\text{m}$  na  $124 \pm 20 \mu\text{m}$  šest mjeseci nakon operacije ( $p<0,01$ ). Prema rezultatima očekivano stanjivanje donorske rožnične lamele n akon konvencionalne stražnje slojevite transplantacije iznosi u prosjeku 12% od početne debljine.

### **Zaključak:**

Smatramo da je podatak o očekivanom stanjivanju donorske rožnične lamele nakon konvencionalne stražnje slojevite transplantacije važan zbog boljeg planiranja operativnog zahvata i preciznijeg naručiv anja rožničnog tkiva iz očne banke.

### **Title:**

Postoperative thinning of lamellar donor graft after conventional Descemet's Stripping Automated Endothelial Keratoplasty

### **Authors:**

Tomislav Kuzman, Miro Kalauz, Ivan Škegro, Sanja Masnec, Ana Meter, Ivana Jonjić

### **Institution:**

University Hospital Center Zagreb, Department of Ophthalmology

### **Aim:**

Purpose of this study is to evaluate postoperative deturgescence of lamellar donor graft after conventional Descemet's stripping automated endothelial keratoplasty (DSAEK).

### **Patients and methods:**

It was prospective study that included 55 eyes of patients (mean age  $70,9 \pm 9,4$  years; female 61,8%, male 38,2%) who undergone DSAEK keratoplasty. Preoperative thickness of lamella measured by pachimetry in eye bank was compared with postoperative thickness measured with anterior ocular coherence tomography (a-OCT) six months after surgery.

### **Results:**

Central lamellar graft thickness decreased from  $142 \pm 27 \mu\text{m}$  preoperatively to  $124 \pm 20 \mu\text{m}$  6 months postoperatively ( $p<0,01$ ). After performing conventional DSAEK corneal transplantation, surgeons should expect deturgescence of corneal graft and reduction in thickness of lamellae about 12% of initial thickness according to our results.

### **Conclusion:**

We found that information on deturgescence of corneal graft and reduction in thickness of lamellae is important for better planning of surgical procedures and knowing what to expect after surgery, and also for better cooperation with eye banks when ordering precut corneal tissue.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU

Titula / Title:

Doc.dr.sc.

Specijalist

**Ime i prezime / First and Last Name:-First**

Tomislav

**Ime i prezime / First and Last Name:-Last**

Kuzman

## **121. Zrinka Džaja Babić**

### **Naslov:**

INCIDENCIJA SVIH GLAUKOMA ZATVORENOG SOBIČNOG KUTA U SPLITSKO-DALMATINSKOJ ŽUPANIJI, HRVATSKA

### **Autori:**

Z. Džaja Babić, V. Rogošić, K. Bućan

### **Ustanova:**

KBC Split, Klinika za očne bolesti

### **Cilj:**

Cilj rada bio je ispitati incidenciju akutnih napadaja zatvaranja sobičnog kuta oka (akutnog glaukoma) tijekom šest godina (2013. - 2018.) kod stanovništva Splitsko-dalmatinske županije.

### **Bolesnici i metode:**

Provadena je retrospektivna, intervencijska analiza praćenja. Analizirani su podaci iz povijesti bolesti 53 bolesnika s kliničkom slikom akutnog zatvaranja sobičnog kuta oka (33 žene srednje dobi  $71.7 \pm 16.6$  godina i 20 muškaraca srednje dobi  $66.22 \pm 3.2$  godine) liječenih na Klinici za očne bolesti Kliničkog bolničkog centra Split.

### **Rezultati:**

Ukupna godišnja incidencija svih akutnih napadaja zatvaranja sobičnog kuta oka iznosila je 2 na 100.000 stanovnika (95% CI, 0-

3,4). Incidencija samog akutnog zatvaranja sobičnog kuta oka bila je 0,6 (95% CI, 0-1,4), dok je incidencija akutnog napadaja glaukoma zatvorenog kuta bila 1,5 (95% CI, 0-2,8) na 100.000 stanovnika na godinu.

Incidencija kod muškaraca bila je 1,5 (95% CI, 0-3,4), a kod žena 2,3 (95% CI, 0-3,4) na 100.000 stanovnika na godinu.

### **Zaključak:**

U zaključku, broj bolesnika s akutnim napadajima zatvaranja sobičnog kuta oka u Splitsko-dalmatinskoj

županiji je relativno nizak, međutim, značajna incidencija akutnog glaukoma zatvorenog kuta može činiti zdravstveni i socijalni problem u ovoj županiji.

### **Title:**

INCIDENCE OF ALL ACUTE ANGLE-CLOSURE GLAUCOMA IN SPLIT-DALMATIA COUNTY, CROATIA

### **Authors:**

Z. Džaja Babić, V. Rogošić, K. Bućan

### **Institution:**

Clinical Hospital Centre Split Department od Ophthalmology University of Split School of Medicine

### **Aim:**

The aim of the study was to determine the incidence of acute angle-closure glaucoma among residents of the Split-Dalmatia County, Croatia, during a 6-year period (january 2013 - december 2018).

**Patients and methods:**

Hospital records of 53 patients, 33 women aged 48-88 (median 73), 20 men aged 45-84 (median 71.5). Treated at Department of Ophthalmology, Split University Hospital Center.

**Results:**

AAC incidence was 0.6 cases/100,000 per year.

AACG incidence was 1.5 cases/100,000 per year.

15 patients had AAC.

38 patients had AACG.

**Conclusion:**

Number of patients with AAC attacks is relatively small.

Significant incidence of AACG could pose a social and health care problem in the County.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Zrinka

**Ime i prezime / First and Last Name:-Last**

Džaja Babić

## **122. Andrej Pleše**

### **Naslov:**

Novi preventivni protokol nakon nekomplikirane operacije katarakte

### **Autori:**

**Andrej Pleše, Biljana Kuzmanović Elabjer, Mladen Bušić, Daliborka Miletić, Mirjana Bjeloš**

### **Ustanova:**

Klinika za očne bolesti, Fakultet za dentalnu medicinu i zdravstvo Osijek, Medicinski fakultet Osijek, Sveučilište J.J. Strossmayer u Osijeku, Klinička bolnica „Sveti Duh“, Zagreb, Hrvatska

### **Cilj:**

Procijeniti učinkovitost novog profilaktičkog protokola kod nekomplikirane fakoemulzifikacije.

### **Bolesnici i metode:**

Ukupno 240 očiju 240 pacijenata koji su podvrgnuti fakoemulzifikaciji praćeni su kako bi se procijeni o novi postoperativni preventivni protokol u randomiziranoj dvostruko slijepoj studiji provedenoj na Klinici za očne bolesti u razdoblju od prosinca 2017. do srpnja 2018. godine. Pacijenti su podijeljeni u dvije grupe; grupa I (GI) u kojoj su kapali deksametazonom s neomicinom i polimiksinom B 4 tjedna poslije operacije, počevši od 4 kapi na dan prvi tjedan, nakon čega slijedi postupno smanjenje za jedn u kap tjedno, i grupa II (GII) koja je koristila kapi deksametazona 4 puta na dan tijekom prvog tjedna, nakon čega 2 kapi na dan kroz jedan tjedan. Učestalost upale oka (OI), intraokularnog tlaka (IOP), edema rožnice (CE) i cistoidnog makularnog edema (CME) analizirana je primjenom z-testa i Studentovog t-testa.

### **Rezultati:**

Tjedan dana nakon operacije upala oka, povećanje IOP-a i edem rožnice su redom zabilježeni u 4,7%, 4,7%, 1,5% u GI ( $N = 127$ ), te u 6,1%, 10,6%, 1,7% u GII ( $N = 113$ ). Bol i smanjena vidna oštRNA nisu zabilježeni ni kod jednoga pacijenta. Četiri tjedna na kon operacije, CME je zabilježen u 2,4% (GI) i u 3,5% (GII) bolesnika. Na temelju rezultata nema statistički značajnih razlika između dva preventivna protokola na razini značajnosti  $1 = 1\%$ ,  $p < 0.01$ .

### **Zaključak:**

Topička primjena deksametazona, četiri puta dnevno tijekom prvog tjedna i dva puta dnevno sljedeći postoperativni tjedan, je učinkovit profilaktički protokol kod nekomplikirane fakoemulzifikacije.

### **Title:**

The new preventive care postphaco protocol

### **Authors:**

Andrej Pleše, Biljana Kuzmanović Elabjer, Mladen Bušić, Daliborka Miletić, Mirjana Bjeloš

### **Institution:**

University Eye Clinic, Faculty of dental medicine and health care Osijek, Faculty of Medicine Osijek, University Josip Juraj Strossmayer in Osijek, University Hospital "Sveti Duh", Zagreb, Croatia

### **Aim:**

To assess the effectiveness of the new prophylaxis algorithm after uneventful phacoemulsification.

**Patients and methods:**

A total of 240 eyes of 240 patients who underwent phacoemulsification were followed to assess the new postoperative preventive care regimen in a randomised double-blind study conducted at the University Eye Clinic from December 2017 until July 2018. Patients were divided into: group I (GI) treated with dexamethasone, neomycin, polymyxin B drops 4 weeks postoperatively, starting with qid the first week, followed by a reduction of one drop per week, and group II (GII) that used dexamethasone drops qid the first week, followed by bid for one week. The incidence of ocular inflammation (OI), intraocular pressure (IOP), corneal edema (CE) and cystoid macular edema (CME) was analysed using two-proportion z-test and Student's t-test.

**Results:**

One week after the surgery ocular inflammation, IOP increase and corneal edema were documented in 4.7%, 4.7%, 1.5% in GI (N=127), and in 6.1%, 10.6%, 1.7% in GII (N=113), respectively. Pain and reduced visual acuity were not documented in either case. Four weeks after the surgery, CME was documented in 2.4% (GI) and in 3.5% (GII) of patients. There were no significant differences between the two preventive care protocols on the incidence of either outcome OI, CE, IOP and CME, at significance level  $\alpha=1\%$ ,  $p<0.01$ .

**Conclusion:**

Dexamethasone drops, applied qid the first week followed with bid for one week, are effective new prophylaxis algorithm after uneventful phacoemulsification.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

Titula / Title:

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Andrej

**Ime i prezime / First and Last Name:-Last**

Pleše

## **123. Nikolina Mihalić Kocijan**

### **Naslov:**

Utjecaj prilagodbe okolinskih faktora na vizualno funkcioniranje djece s cerebralnim oštećenjem vida

### **Autori:**

Nikolina Mihalić Kocijan, Martina Sedlar

### **Ustanova:**

Dnevni centar za rehabilitaciju djece i mladeži "Mali dom - Zagreb"

### **Cilj:**

Utvrđiti kako prilagodba okoline utječe na vidne funkcije i funkcionalni vid djece sa cerebralnim oštećenjem vida

### **Bolesnici i metode:**

Korisnici Dnevnog centra "Mali dom-Zagreb" sa karakteristikama cerebralnog oštećenja vida u dobi od 3-7 godina

### **Rezultati:**

Biti će prikazani rezultati koji pokazuju kako se kroz prilagodbu okolinskih faktora utječe na optimalno vizualno funkcioniranje djece sa oštećenjem vida. Okolinski faktori uključivali su osvjetljenje, smjer i svjetla, boje i kontraste, veličinu i udaljenost te vrijeme potrebno za odgovor. Od vidnih funkcija prvenstveni su pokreti praćenja i sakade, a na području funkcionalnog vida vizualna pažnja i vizualna komunikacija.

### **Zaključak:**

Većini djece sa cerebralnim oštećenjem vida uobičajena životna okolina nije dovoljno stimulativna kako bi spontano koristili svoj vid i vizualno istraživali. Kako bi bili vizualno aktivni, zahtijevaju prilagodbu okoline i individualnim potrebama prilagođen vizualni podražaj. Jedan od glavnih ciljeva kod djece sa cerebralnim oštećenjem vida je olakšati djetetovu sposobnost gledanja i motivirati ga na gledanje kako bi osnažilo i učvrstilo svoje vizualno funkcioniranje.

### **Title:**

The influence of environmental factors adaptation on visual functioning in children with cerebral visual impairment

### **Authors:**

Nikolina Mihalić Kocijan, Martina Sedlar

### **Institution:**

Day Care Center for Rehabilitation of Children and Young Adults "Mali dom - Zagreb"

### **Aim:**

To determine how the adaptation of environment influences on visual functions and functional vision in children with cerebral visual impairment

### **Patients and methods:**

The beneficiaries of Day Care Center "Mali dom- Zagreb" which show characteristics of cerebral visual impairment and are at the age from 3 to 7

**Results:**

The results, which show how the adaptation of environment factors influence on optimal visual functioning of children with visual impairment, will be shown in this study. Environment factors include lighting, direction of the light, colors and contrast, size and distance and time needed for response. Visual functions that were observed were tracking movements and saccades, and, from the field of functional vision, visual attention and visual communication.

**Conclusion:**

The majority of children with cerebral visual impairment do not get enough stimulation from common life surroundings in order to use their vision and explore visually. To be visually active, they need an adapted environment and visual stimulus that is adjusted to their individual needs. One of the main goals in children with cerebral visual impairment is to facilitate the child's ability to look and to motivate them to look at the objects so they could reinforce and consolidate their visual functioning.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM

Titula / Title:

Prof.dr.sc.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Martina

**Ime i prezime / First and Last Name:-Last**

Sedlar

## **124. Kristina Ivanišević**

### **Naslov:**

Sistemski kortikosteroidi i bilateralna centralna serozna korioretinopatija (CSCR) kod bolesnice liječene zbog akutnog odbacivanja transplantiranog bubrega

### **Autori:**

Ivanišević K, Vuković A.

### **Ustanova:**

Ordinacija za očne bolesti dr. Ante Vuković, Makarska

### **Cilj:**

Prikazati slučaj bilaterane centralne serozne korioretinopatije (CSCR) kod 36 - godišnje bolesnice liječene sistemskim kortikosteroidima zbog akutnog odbacivanja transplantiranog bubrega i potaknuti na razmišljanje o CSCR kao komplikaciji u bolesnika sa sistemskim bolestima koj i se liječe kortikosteroidima.

### **Bolesnici i metode:**

Tridesetšestogodišnja bolesnica, 24.07.2018. javlja se na pregled u oftalmološku ordinaciju zbog post upnog pogoršanja vida na oba oka, više desnog. Bolesnica poznata od ranije, kratkovidna. Iz anamnez e, od 14. godine boluje od sistemskog eritematoidnog lupusa (SLE), u 22. godini dijagnosticirana je re nalna insuficijencija te provođena peritonejska dijaliza, transplantacija bubrega 2007., epizoda akutno g staničnog odbacivanja 2011., porod carskim rezom 2013. godine. Zbog značajnog porasta laboratorijskih nalaza kreatinina u svibnju 2018. upućena nefrologu u KBC Zagreb. Zaprima se na bolničko liječenje 08.05.2018. zbog akutnog staničnog i humoralnog odbacivanja transplantiranog bubrega i započne se pulsna terapija. U oftalmološku obradu bolesnice uključen je pregled vidne oštirine s korekcijom, pregled na biomikroskopu s procjepnom svjetiljkom, aplanacijska tonometrija, klinički pregled očne pozadine u midrijazi i optička koherentna tomografija (OCT).

### **Rezultati:**

Bolesnica je kod dolaska imala vidnu oštrinu desnog oka s korekcijom (VOD) 0,1; vidna oštrina lijevog oka s korekcijom (VOS) bila je 0,4. Kliničkim pregledom očne pozadine indirektnom kontaktom oftalmoskopijom uočen je edem makule. Periferija mrežnice bila je urednog nalaza. Nalaz OCT makule oba oka dokazao je serozno odignuće neurosenzornog sloja mrežnice. Izmjerena vrijednost centralne foveolarne debljine (CFT) desnog oka (OD) bila je 738 µm, CFT lijevog oka (OS) 399 µm. U to vrijeme bolesnica je bila na peroralnoj kortikosteroidnoj terapiji prednizonom 20 mg dnevno. Konzultiran je nefrolog KBC Zagreb i smanjena doza prednizona na 5 mg tri dana potom je isključen iz terapije. Nakon tjedan dana ponovljeni nalaz OCT makule pokazao je poboljšanje. CFT desnog oka bila je 308 µm i VOD 0,5; CFT lijevog oka 357 µm i VOS 0,6. Kontrolni OCT mjesec dana od početka bolesti bio je CFT OD 326 µm, OCT OS 295 µm, VOD 0,6 i VOS 0,9. Nakon dva mjeseca CFT OD 237 µm, CFT OS 239 µm, VOD 0,7; VOS 1,0. Zbog pogoršanja bubrežnih laboratorijskih parametara 03. 10.2018. u terapiju se ponovno uvodi prednizon 10 mg/dan. Tjedan dana iza toga bolesnica se opet ja vlja zbog pada vidne oštirine na desnom oku, VOD 0,3; VOS 1,0. OCT dokaže relaps bolesti sa izmjer enom CFT OD 323 µm i CFT OS 249 µm. Nakon stabilizacije bubrežnih laboratorijskih parametara doza prednizona se snizi na 7,5 mg/dan. Kontrolni OCT nalaz centralne foveolarne debljine mjesec dan od relapsa tj. tri i pol mjeseca od početka bolesti iznosio je 170 µm na desnom i 281 µm na lijevom oku uz oporavak vidne oštirine, VOD 0,9; VOS 1,0.

**Zaključak:**

Iako točan mehanizam nastanka centralne serozne korioretinopatije i dalje ostaje do kraja nerazjašnjen, CSCR je komplikacija povezana s uporabom kortikosteroida koja ugrožava vid. Oporavak vidne oštine kod CSCR općenito je dobar, ipak kronični i rekurentni CSCR mogu uzrokovati značajan trajni gubitak vida. Stoga je važna razborita uporaba kortikosteroida i praćenje njihovih nuspojava. Rano otkrivanje bolesti i brz multidisciplinarni pristup može pomoći u sprječavanju kroničnih promjena i trajnog oštećenja vida.

**Title:**

Systemic corticosteroids and bilateral central serous chorioretinopathy (CSCR) in patient treated for a acute rejection of the transplanted kidney

**Authors:**

Ivanišević K, Vuković A.

**Institution:**

Ophthalmology office Ante Vuković MD, Makarska

**Aim:**

To present a case of bilateral central serous chorioretinopathy (CSCR) in a 36-year-old patient treated with systemic corticosteroids due to acute rejection of transplanted kidney and to consider CSCR as a complication in patients with systemic diseases treated with corticosteroids.

**Patients and methods:**

On July 24th 2018, a 36 -

year- old female patient was referred to ophthalmologic examination due to gradual visual deterioration of both eyes, the right eye than the left. The patient has already been treated for myopia. According to her medical history, she has been suffering from systemic lupus erythematosus (SLE) since the age of 14 . At the age of 22 she was diagnosed with renal insufficiency and required peritoneal dialysis, in 2007 she underwent kidney transplantation, she had an episode of acute cellular rejection in 2011, gave birth by Caesarean section in 2013. Due to significant increase the laboratory findings of creatinine in May 2018, she underwent nephrologist examination in UHC Zagreb and was hospitalized on May 8th 2018. The acute cellular and humoral rejection of the transplanted kidney was determined and pulse therapy introduced. The ophthalmologic examination included best corrected visual acuity review, slit-lamp examination, applanation tonometry, fundus examination and optical coherence tomography (OCT).

**Results:**

At the first visit best corrected visual acuity (BCVA) of the right eye (OD) was 0,1 and BCVA of the left eye (OS) was 0,4. Clinical examination of the fundus with slit-lamp contact lens ophthalmoscopy revealed the macular edema. The peripheral retina finding showed no changes. The OCT macular findings of both eyes have proven serous detachment of the sensory retina. The measured central field thickness (CFT) of the right eye (OD) was 738 µm and CFT of the left eye (OS) 399 µm. At that time the patient was on oral corticosteroid therapy with prednisone 20 mg daily. After consulting a nephrologist at UHC Zagreb prednisone dose was first reduced to 5 mg for three days , then excluded from therapy. A week later, OCT macular findings showed improvement. The right eye CFT was 308 µm and BCVA OD 0,5; the left eye CFT was 357 µm and BCVA OS 0,6. A month after the onset of the disease, OCT showed CFT OD 326 µm, OCT OS 295 µm, BCVA OD 0,6 and BCVA OS 0,9. Two months lat

er CFT OD was 237 µm, CFT OS 239 µm, BCVA OD 0,7; BCVA OS 1,0. Due to worsening of renal laboratory parameters the prednisone 10 mg daily was reintroduced on October 3rd 2018. One week later, the patient noticed decrease in visual acuity on the right eye, BCVA OD 0,3; BCVA OS 1,0. OCT macular finding showed relapse of the disease with measured CFT OD 323 µm and CFT OS 249 µm. After renal laboratory parameters had been stabilized, the prednisone dose was lowered to 7,5 mg daily. The OCT findings of the central field thickness one month after the relapse, and three and a half months from the onset of the disease, were 170 µm on the right and 281 µm on the left eye with visual acuity recovery, BCVA OD 0,9; BCVA OS 1,0.

### **Conclusion:**

Even though the exact mechanism of the central serous chorioretinopathy has remained unexplained, CSCR is a vision threatening complication associated with the use of corticosteroids. Recovery of visual acuity in CSCR is good in general. However, chronic and recurrent CSCR can cause significant permanent loss of vision. Therefore, it is important to use corticosteroids and monitor their side effects. Early disease detection and rapid multidisciplinary approach can help prevent chronic changes and permanent visual impairment.

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU

Titula / Title:

Dr.

Specijalist

**Ime i prezime / First and Last Name:-First**

Kristina

**Ime i prezime / First and Last Name:-Last**

Ivanišević

## **125. Lejla Muhamedagić**

### **Naslov:**

Selektivna laser trabekuloplastika u liječenju primarnog glaukoma otvorenog ugla, pseudoeksfolijativnog i pigmentnog glaukoma

### **Autori:**

Lejla Muhamedagić, Milka Mavija, Aida Kasumović, Denisa Zvizdić, Jasna Muhović Bejić, Elvira L okmić, Maja Alajbegović, Sanja Sefić Kasumović

### **Ustanova:**

JU Dom zdravlja Kantona Sarajevo

Očna Poliklinika Dr. Sefić, Sarajevo

Očna Klinika, Klinički centar Univerziteta u Sarajevu, Sarajevo  
verzitetski klinički centar Republike Srpske, Banja Luka

Očna Klinika, Uni

### **Cilj:**

Cilj ove studije je bio istražiti efikasnost i sigurnost selektivne laser trabekuloplastike (SLT) u tretmanu u primarnog glaukoma otvorenog ugla (POAG), pseudoeksfolijativnog (XFG) i pigmentnog glaukoma (PDG).

### **Bolesnici i metode:**

Šezdeset pacijenata (120 očiju) starosti od 45 do 80 godina je uključeno u ovu prospektivnu kliničku studiju sprovedenu tokom dvije godine. Pacijenti su bili informisani nakon što im je objašnjena procedura. Sto očiju je imalo primarni glaukom otvorenog ugla (POAG), 7 pacijenata (14 očiju) je imao XFG, te 3 pacijenata (6 očiju) imao PDG. SLT je bio primarni, početni tretman kod 8 očiju.

### **Rezultati:**

Četiri sedmice nakon tretmana došlo je do pada intraokularnog pritiska (IOP) za 6,5 mmHg (32,65%), nakon 6 mjeseci pada IOP za 5,4 mmHg (29,10%), a 5,1 mmHg (27,56%) 2 godine nakon tretmana . Nije bilo postoperativni komplikacija tokom dvije godine praćenja.

### **Zaključak:**

Selektivna laser trabekuloplastika je siguran i efikasan tretman u sniženju intraokularnog pritiska kod pacijenata sa primarnim glaukomom otvorenog ugla (POAG),pseudoeksfolijativnim (XFG) i pigmentnim glaukom (PDG). Potrebno su dugoročne studije kako bi se utvrdilo da li je efekat snižavanja IOP održavan tokom vremene i da bi se procjenila efikasnost ponovljenog SLT-a.

### **Title:**

Selective Laser Trabeculoplasty in Primary Open - Angle Glaucoma, Exfoliative Glaucoma and Pigmentary Glaucoma

### **Authors:**

Lejla Muhamedagić, Milka Mavija, Aida Kasumović, Denisa Zvizdić, Jasna Muhović Bejić, Elvira L okmić, Maja Alajbegović, Sanja Sefić Kasumović

### **Institution:**

Health Centre of Sarajevo Canton  
, University Clinical Centre of Sarajevo, Sarajevo  
f the Republic of Srpska, Banja Luka

Eye Clinic Dr. Sefić, Sarajevo

Eye Clinic, University Clinical Centre o

Eye Clinic

**Aim:**

The aim of the study was to investigate the efficacy and safety of Selective Laser Trabeculoplasty (SLT) in the treatment of primary open-angle glaucoma, exfoliative (XFG) and pigmentary glaucoma (PDG)

**Patients and methods:**

Sixty patients(120 eyes) aged 45-

80 were enrolled in this prospective clinical study, undertaken during the two years. Informed consent was taken from the patients after explanation of the procedure. Hundred eyes had POAG , and there were 7 XFG patients (14 eyes) and 3 PDG patients (6 eyes). In 8 eyes the primary initial treatment was SLT.

**Results:**

Four weeks after treatment, the mean intraocular pressure (IOP) reduction from baseline was 6,5 mm Hg (32,65%), after 6 months the mean IOP reduction was 5,4 mmHg (29.10%), and after 24 months 5 .1 mmHg or 27,56%. No postoperative complication have been reported in 2 Years follow up.

**Conclusion:**

Selective laser trabeculoplasty is a safe and effective treatment modality for lowering the intraocular pressure in patients with glaucoma Long-term follow-up studies are needed to determine whether the IOP lowering effect is sustained over time, and to assess the efficacy of repeated SLT

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA GLAUKOM

Titula / Title:

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Specijalist

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Lejla

**Ime i prezime / First and Last Name:-Last**

Muhamedagić

## **126. Karolína Kapitánová**

### **Naslov:**

Stromal corneal infiltrates after accelerated CXL - case presentation

### **Autori:**

Kapitánová Karolína, Furdová Alena

### **Ustanova:**

UVEA Mediklinik Inc., Martin – Priekopa; Ophthalmology department, Faculty of Medicine, Comenius University in Bratislava

### **Cilj:**

The authors present a case study of a keratoconus patient who experienced a rare complication following accelerated corneal cross-linking (CXL).

### **Bolesnici i metode:**

33 year old, otherwise healthy female with bilateral progressive keratoconus

### **Rezultati:**

#### Case presentation:

Patient with bilateral progressive keratoconus was indicated for the accelerated CXL. On the third postoperative day, a serious complication of treatment occurs - stromal corneal infiltrates in the right eye with significant decrease in patient visual acuity. In the paper, the authors describe in detail the initial differential diagnosis, treatment, long-term postoperative evaluation of ocular findings, as well as the gradual adjustment of the best corrected visual acuity during follow-up.

### **Zaključak:**

Sterile stromal corneal infiltrates represent a rare but serious complication of CXL. The patients with thinner cornea and steep keratometries are generally more prone to this complication. The exact causes of their occurrence are not yet known. The resulting visual acuity depends mainly on the localization and the density of these infiltrates.

### **Title:**

Stromal corneal infiltrates after accelerated CXL - case presentation

### **Authors:**

Kapitánová Karolína, Furdová Alena

### **Institution:**

UVEA Mediklinik Inc., Martin – Priekopa; Ophthalmology department, Faculty of Medicine, Comenius University in Bratislava

### **Aim:**

The authors present a case study of a keratoconus patient who experienced a rare complication following accelerated corneal cross-linking (CXL).

**Patients and methods:**

33 year old, otherwise healthy female with bilateral progressive keratoconus

**Results:**

**Case presentation:**

Patient with bilateral progressive keratoconus was indicated for the accelerated CXL. On the third postoperative day, a serious complication of treatment occurs - stromal corneal infiltrates in the right eye with significant decrease in patient visual acuity. In the paper, the authors describe in detail the initial differential diagnosis, treatment, long-term postoperative evaluation of ocular findings, as well as the gradual adjustment of the best corrected visual acuity during follow-up.

**Conclusion:**

Sterile stromal corneal infiltrates represent a rare but serious complication of CXL. The patients with thinner cornea and steep keratometries are generally more prone to this complication. The exact causes of their occurrence are not yet known. The resulting visual acuity depends mainly on the localization and the density of these infiltrates.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

**Titula / Title:**

Dr.

Specijalizant

**Ime i prezime / First and Last Name:-First**

Karolína

**Ime i prezime / First and Last Name:-Last**

Kapitánová

## **127. Edo Ladavac**

**Naslov:**

OCT makule kod operacije mrene

**Autori:**

Edo Ladavac

**Ustanova:**

Ladavac d.o.o. očna ambulanta

**Cilj:**

Kada i zašto koristiti OCT makule kod operacija katarakte

**Bolesnici i metode:**

Prikaz slučajeva operiranih pacijenata sa patološkim promjenama makule

**Rezultati:**

Pacijenti sa makularnim promjenama nakon operacije mrene (dijabetična retinopatija, AMD, vitreomakularne promjene, retinitis pigmentosa) nemaju očekivano da bar vid kao pacijenti sa urednom makulom, a kod nekih dozai i do pogoršanja vida te zahtijevaju daljnju terapiju

**Zaključak:**

Prije operacije mrene potrebno je detaljno pregledati očnu pozadinu i makule zbog eventualnim patološkim promjenama koje mogu biti razlogom postoperativnog lošeg vida. OCT je izuzetno važna pretraga u procjeni stanja makula.

**Title:**

Macular OCT and phacoemulsification

**Authors:**

Edo Ladavac

**Institution:**

Ladavac d.o.o. očna ambulanta

**Aim:**

When and why it is important to use OCT in cataract surgery ?

**Patients and methods:**

The cases of operated patients with pathological macular changes

**Results:**

The patients with macular changes after surgery (diabetic retinopathy, AMD, vitreomacular adhesion, retinitis pigmentosa) do not have the expected vision as patients with normal macula, and some require further therapy.

**Conclusion:**

Prior to surgery, it is necessary to do a detail macular examination due to possible pathological changes that may cause postoperative vision deteriorating. OCT is extremely important in evaluating the state of the macula.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA MREŽNICU

Titula / Title:

Dr.

Specijalist

**Ime i prezime / First and Last Name:-First**

Edo

**Ime i prezime / First and Last Name:-Last**

Ladavac

## **128. Alena Furdova**

### **Naslov:**

x

### **Autori:**

x

### **Ustanova:**

x

### **Cilj:**

x

### **Bolesnici i metode:**

x

### **Rezultati:**

x

### **Zaključak:**

x

### **Title:**

Modeling of intraocular tumors before stereotactic radiosurgery by 3D

### **Authors:**

Furdova Alena, Zahorjanova Pavlina, Kollarova Alexandra, Kapitanova Karolina, Sekac Juraj, Sramka Miron

### **Institution:**

Dept.of Ophthalmology, Faculty of Medicine, Comenius Univ. in Bratislava, Dep.t of Stereotactic Radiosurgery, St.Elisabeth Oncology Inst. in Bratislava, Slovakia

### **Aim:**

To describe the wide range of applied 3D printing technology possibilities in ophthalmology. New technologies like 3D printing allow us to create physical objects on the basis of digital data. Thanks to its rapid development the use enormously increased in medicine too. Its creations facilitate surgical planning processes, education and research in context of organ transplantation, individualization prostheses, breast forms, and others. Our presentation describes the wide range of applied 3D printing technology possibilities in ophthalmology. It is focusing on innovative implementation of eye tumors treatment planning scheme during the stereotactic radiosurgery irradiation process. We demonstrate our experience with 3D printing models of the eye with intraocular tumor – uveal malignant melanoma - in intraocular tumor planning stereotactic radiosurgery.

### **Patients and methods:**

Patients with uveal melanoma treated by stereotactic irradiation at linear accelerator LINAC. In the software for segmentation (3DSlicer) created virtual 3D model of eye globe with tumorous mass based on tissue density from CT and MRI data. Virtual model was then processed in the slicing software (Simplify3D) and printed on 3D printer using FDM (fused deposition modeling) technology. Material used for printing was polylactic acid.

### **Results:**

The individualized stereotactic planning scheme was optimized with help of 3D printed model of the patient's eye with intraocular tumor.

Models of eye globe with uveal melanoma were created. The median tumor volume was 0.5 cm<sup>3</sup> (0.2 - 1.6 cm<sup>3</sup>). The radiation dose was 35.0 Gy by 99 % of DVH (dose volume histogram).

### **Conclusion:**

Our 3D printed model of eye with tumor is helpful in planning process to achieve the optimal scheme for irradiation of uveal melanoma which requires high accuracy of defining the targeted tumor mass and critical structures (lens, optic nerve).

### **Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU ZA UVEA-u

Titula / Title:

Dr.

Specijalist

### **Ime i prezime / First and Last Name:-First**

Alena

### **Ime i prezime / First and Last Name:-Last**

Furdova

## **129. Ana Križanović**

### **Naslov:**

Regeneracija leće – naše iskustvo

### **Autori:**

Ana Križanović, Mirjana Bjeloš, Mladen Bušić, Biljana Kuzmanović Elabjer

### **Ustanova:**

Klinička bolnica "Sveti Duh", Zagreb, Hrvatska

### **Cilj:**

Predstaviti naše iskustvo regeneracije leće endogenim matičnim stanicama novim kirurškim pristupom

### **Bolesnici i metode:**

Dojenče starosti 10 tjedana upućeno je od primarnog pedijatra na našu Kliniku u ožujku 2018. godine zbog zamućenja vidne osi lijevoga oka. Kliničkim pregledom otkrije se anizokorija (lijeva zjenica manja) i nedostatak crvenog refleksa uslijed zamućenja leće. Postavljena je dijagnoza konatalne katarakte. U travnju 2018., kod djeteta u dobi od 11 tjedana, učinjena je minimalno invazivna operacija katara kte kroz 2 mm kapsuloreksu učinjenu periferno superotemporalno. Poliranje stražnje kapsule, stražnja kapsuloreksa i prednja vitrektomija nisu učinjeni kako bi se promovirala regeneracija leće.

### **Rezultati:**

Operativni zahvat i postoperativni tijek protekli su uredno: vidna os je otvorena. Četiri mjeseca nakon zahvata matične stanice počele su se diferencirati i formirati lećna vlakna. Ipak, daljna diferencijacija stanica dovela je do ponovnog formiranja katarakte 8 mjeseci nakon operacije i potrebe za re-operacijom.

### **Zaključak:**

Minimalno invazivna tehnika operacije konatalne katarakte ima tri prednosti: (1) značajno smanjuje veličinu reza, (2) pomiče otvor kapsulorekse s centra prema periferiji i (3) čuva stražnju kapsulu i lećne matične stanice. Iako je naše iskustvo s regeneracijom leće pokazalo nedvojben potencijal matičnih stanica za diferencijaciju, došlo je do aberantne diferencijacije lećnih vlakana, te vidna os nije ostala otvorena nametnuvši pitanje uzroka ovakvog ishoda. Usprkos tomu, nova tehnika liječenja konatalne katarakte regeneracijom vlastite leće je u porastu.

### **Title:**

The regeneration of the crystalline lens – our experience

### **Authors:**

Ana Križanović, Mirjana Bjeloš, Mladen Bušić, Biljana Kuzmanović Elabjer

### **Institution:**

Clinical Hospital "Sveti Duh", Zagreb, Croatia

### **Aim:**

To present our experience of lens regeneration with novel paradigm using endogenous stem cells

**Patients and methods:**

A 10-week-

old infant was referred to our Clinic by primary pediatrician for left eye visual axis obscuration in March 2018. Ophthalmic examination revealed anisocoria (left pupil smaller), and no red reflex due to lens opacification. A diagnosis of connatal cataract was made in otherwise healthy child. In April 2018, the child, now at the age of 11 weeks, underwent a minimally invasive cataract surgery performed through 2 mm capsulorhexis created at superotemporal periphery. Neither polishing of the posterior capsule nor posterior capsulorhexis and anterior vitrectomy were performed in order to promote lens regeneration.

**Results:**

Surgery and postoperative course went without complications with visual axis opened. Four months after the surgery the lens cells (LECs) began to differentiate into lens fibers forming a new lens. However, further differentiation led to cataract clouding 8 months after the surgery, requiring the re-operation.

**Conclusion:**

The minimally invasive surgery for connatal cataract has three advantages: it (1) reduces the size of the wound considerably, (2) moves the capsulorhexis opening from the central visual axis to the periphery and (3) preserves a nearly intact transparent lens capsule and layer of LECs. Although our experience with lens regeneration showed unambiguous ability of the LECs to differentiate, aberrant lens fiber regeneration ensued and the visual axis did not remain opened questioning the cause of this outcome. Nevertheless, this new strategy for treating connatal cataract using naturally regenerated lens is emerging.

**Kongres / Congresse:**

19. Kongres HOOD-a

Abstract category / Sažetak prijavljujem u:

SEKCIJU MLADI U OFTALMOLOGIJI

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## **130. Dobrila Karlica Utrobičić**

### **Naslov:**

Uspješnost liječenja ambliopije okluzijom praćeno testiranjem vidnim evociranim potencijalima

### **Autori:**

Dobrila Karlica Utrobičić

### **Ustanova:**

KBC Split, Klinika za očne bolesti

### **Cilj:**

Prikazati rezultate liječenje ambliopije okluzijom testiranjem s vidnim evociranim potencijalima

### **Bolesnici i metode:**

U našem istraživanju testirali smo 30 djece, 18 djevojčica i 12 dječaka, u dobi od 4,5 do 6 godina, koji imaju ambliopiju uzrokovanu anizometropijom. Kod petoro djece došlo je do miopske anizometrije, dok je ostalih 25 imalo hipermetropnu anizometropiju. 9 djece (30%) imalo je oštećenje vida desnog oka i 21 (70%) lijevog oka. Srednje vrijednosti vidne oštrine u ambliopskim očima su  $0,38 + 0,15$ .

### **Rezultati:**

Srednja vrijednost vidne oštrine u slabovidnim očima je  $0,38 + 0,15$ . Uspoređujući vrijednost amplitu de i latencije između slabovidnih i ne slabovidnih očiju, otkrili smo da su slabovidne oči imale značajno nižu amplitudu u usporedbi s ne slabovidnim očima ( $p < 0,001$ ) i dulju latenciju ( $p < 0,001$ ).

### **Zaključak:**

U skupini djece s anizometrijskom ambliopijom testiran je VEP, kako bi se odredile promjene vrijednosti amplitude i latencije P 100 valova u usporedbi s oštrinom vida. Statističkom analizom utvrđeno je postojanje značajnih razlika u rezultatima prije, nakon korekcije i nakon terapije. Kako se vidna oštrina popravljala, vrijednosti parametara VEP krivulje se mijenjala (amplituda je rasla i latencija se smanjivala).

### **Title:**

Doc.dr.sc

### **Authors:**

Dobrila Karlica Utrobičić

### **Institution:**

Department of Ophthalmology University Hospital Centre University of Split School of Medicine

### **Aim:**

Show the results of treatment of occlusal amblyopia by testing visual evoked potentials

### **Patients and methods:**

In our study, we tested 30 children, 18 girls and 12 boys, aged 4,5 to 6 years, which have ambliopia caused by anisometropia. In the five children there was a myopic anisometry, while the other 25 had hypermetropic anisometry.

perthermic anisometropia. 9 children (30%) had visual impairment of the right eye and 21 (70%) left eye. The mean visual acuity values in the amblyopic eyes are  $0.38 + 0.15$ .

**Results:**

The mean of visual acuity in amblyopic eyes is  $0.38+0.15$ .

Comparing the value of amplitude and latency between amblyopic and non amblyopic eyes we have found that amblyopic eyes had a significantly lower amplitude in comparison with non amblyopic eyes ( $p<0,001$ ) and a larger latency ( $p<0,001$ ).

**Conclusion:**

The group of children with anisometric amblyopia had their VEP tested, in order to determine the changes in the values of the amplitude and latency of P 100 waves in comparison with the visual acuity. Statistic analysis determined the existence of significant differences in the results before, after correction and after therapy.

As the visual acuity progressed, the value of the VEP curve changed (the amplitude increased and the latency decreased).

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Dobrila

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Karlica Utrobičić

## **131. Jasmina Alajbegović- Halimić**

### **Naslov:**

Uspješnost operacija strabizma kod odraslih pacijenata

### **Autori:**

Jasmina Alajbegović- Halimić<sup>1</sup>, Nina Jovanović <sup>2</sup>, Tarik Halimić<sup>3</sup>, Sanja Sefić-Kasumović<sup>3</sup>

### **Ustanova:**

Privatna oftalmološka ordinacija "Dr Halimić" Sarajevo, Bosna I Hercegovina

### **Cilj:**

Odrediti uspješnost operacija strabizma kod odraslih

### **Bolesnici i metode:**

Ukupno 35 odraslih pacijenata s strabizmom u periodu od 2016-2018. Tip strabizma, preoperativne mjere, kao i indikacije su uzete iz historija bolesti pacijanata. Konacna mjerena su vršena u prosjeku 3-6 sedmica nakon operacija, kada su pacijenti ujedno pitani da komentiraju svoje zadovoljstvo.

### **Rezultati:**

Od ukupno 35 odraslih pacijenata sa strabizmom, 12 (34,3%) je bilo muških i 23 (65,7%) ženskih, srednje dobi  $34,15 \pm 13$  od 20 godina do 67 godina, 17 (48,6%) sa egzotropijom, više nego pacijenata sa esotropijom 11 (31,4%), i s hiperretropijom 7 (20%) pacijenata. Indikacije su u većini slučajeva bile esetske 28 (80%). Uspješnost se mjerila brojem ortoforičnih pacijenata s manje od 10 prizma dioptrija 31 (88,6%), stereovidom 22 (62,9%) i zadovoljstvom pacijenta 30 (85,7%).

### **Zaključak:**

Operacije strabizma kod odraslih imaju veliku uspjeh i pacijenti su većinom zadovoljni. Većina pacijenta traži hiruršku korekciju iz kozmetičkih i psiholoških razloga.

### **Title:**

SUCCESS RATE OF STRABISMUS SURGERY IN ADULT PATIENTS

### **Authors:**

Jasmina Alajbegović- Halimić<sup>1</sup>, Nina Jovanović <sup>2</sup>, Tarik Halimić<sup>3</sup>, Sanja Sefić-Kasumović<sup>3</sup>

### **Institution:**

Private Ophthalmology practice "Dr Halimić" Sarajevo, Bosnia and Herzegovina

### **Aim:**

Determination of success rate of strabismus surgery in adult patients

### **Patients and methods:**

A surgical review was performed on 35 adult patients with strabismus in period between 2016-2018 years. The type of strabismus, preoperative measurements, and indications for surgery were obta

ined from the patient notes, as were all final outcomes. Final measurements, on average, were 3 to 6 weeks postoperatively, and patients were asked to comment subjectively on their outcome.

**Results:**

In total number 35 of adult strabismic patients, were 12 (34,3%) male and 23 (65,7%) female, mean age  $34,15 \pm 13$  from 20 years to 67 years, 17 (48,6%) exotropic, more than esotropic 11 (31,4%), and hypertropic 7 (20%) patients. Indication for surgery in the most cases were aesthetic 28 (80%). The success rate is measured by number of orthophoric patients with less than 10 prism diopters 31 (88,6%), stereoaquity 22 (62,9%) and patient satisfaction 30 (85,7%).

**Conclusion:**

Adult strabismus surgery is very successful and provides patients with a good level of satisfaction. Many patients seek surgical correction for cosmetic and psychosocial benefits.

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Jasmina

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Alajbegović-Halimić

## **132. Marko Lukić**

### **Naslov:**

Retinalne mikrovaskularne abnormalnosti kod pacijenta sa fascio skapulo humeralnom mišićnom distrofijom

### **Autori:**

Dr Marko Lukić, FEBO Mr Robin Hamilton, FRCOphth

### **Ustanova:**

Moorfields Eye Hospital NHS Trust, London, United Kingdom

### **Cilj:**

Prikazati rijedak slučaj ekstramuskularne komplikacije FSH mišićne distrofije, njeno praćenje, dijagnosticanje te potencijalno liječenje

### **Bolesnici i metode:**

Radi se o jednom slučaju gdje je urađen multi modal imaging te se na temelju dijagnostičkih nalaza i povijesti bolesti postavila dijagnoza

### **Rezultati:**

Pacijent je poslan iz hitne službe na Odjel Retine Moorfields Eye Hospital radi prisutnih krvarenja u makuli. Sam pacijent nije imao prisutne simptome makularnih bolesti te je bolovao od FSH misicne distrofije. Dijagnostičkim metodama dokazano je da se radi o prisutnim mikroteleangiektazijama i makularnom edemu koji je bio izvan foveje. Kroz period praćenja od 6 mjeseci nije došlo do pogoršanja niti alaza i vid pacijenta je bio stabilan. Time, liječenje nije bilo indicirano u ovom konkretnom slučaju.

### **Zaključak:**

Retinalne mikrovaskularne abnormalnosti kod pacijenata sa FSH mišićnom distrofijom su prije svega rijetke pojave, ali ukoliko su klinički manifestne, mogu utjecati trajno na vid. Kod pacijenata sa prisutnim mikrovaskularnim abnormalnostima, a koje se manifestiraju teleangiektatičkim promjenama, lipidnim eksudatima te makularnim edemom trebalo bi se diferencijalno misliti i na subklinički prisutnu mišićnu distrofiju.

### **Title:**

Retinal microvascular abnormalities in a patient with fascio-scapulo-humeral muscular dystrophy

### **Authors:**

Dr Marko Lukic, FEBO Mr Robin Hamilton, FRCOphth

### **Institution:**

Moorfields Eye Hospital NHS Trust, London, United Kingdom

### **Aim:**

To show a rare case of extramuscular complication of FSH macular dystrophy, its monitoring, work-up and potential treatment options

### **Patients and methods:**

It is a case report which diagnosis has been made based on diagnostic imaging and medical history

**Results:**

An asymptomatic patient was referred to Medical Retina Service at Moorfields Eye Hospital due to macular haemorrhages in the left eye. Imaging showed presence of retinal microtelangiectasis, lipid exudates and extrafoveal macular oedema. The visual acuity as well as macular oedema were stable over follow up period of 6 months. In this particular case treatment hasn't been indicated.

**Conclusion:**

Retinal microvascular abnormalities in patients with FSH muscular dystrophy are rarely manifested. However, if they are, they could permanently affect patients' vision. In patients with presence of microtelangiectasia, lipid exudates and macular oedema, subclinical muscular dystrophy should be excluded.

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Titula / Title:

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Lukic

### **133. Lala Ceklic**

#### **Naslov:**

Atrofija makule nakon dugotrajne, kronične antiVEGF terapije vlažne forme senilne degeneracije makule

#### **Autori:**

Lala Ceklic, Marion R Munk, Andreas Ebneter, Wolfgang Huf, Sebastian Wolf, Martin S. Zinkernagel

#### **Ustanova:**

Klinika za očne bolesti Univerziteta u Bernu, Inselspital, Bern, Švajcarska

#### **Cilj:**

Utvrđiti prevalencu, progresiju i faktore rizika kod dugotrajnog tretmana antiVEGF vlažne forme senilne degeneracije makule

#### **Bolesnici i metode:**

U studiju je uključeno 49 očiju od 47 pacijenata s utvrđenom vlažnom formom senilne degeneracije makule koji su primili više od 30 intravitrealnih injekcija aflibercepta ili ranibizumaba. Svim pacijentima je urađena dijagnostika koja podrazumjeva klinički pregled, vidna oštrina, očni pritisak, optička koherentna tomografija (OCT), fluoresceinska angiografija, fundus autofluorescencija. Za mjerjenje atrofije makule korištene su infracrvena fotografija i OCT spectralis Heidelberg Engineering aparata. U statističkoj analizi je korištena regresiona analiza po Akaike (AIC) koja se koristi za analizu potencijalnih faktora koji utiču na parametre atrofije makule.

#### **Rezultati:**

Studija obuhvata 49 pacijenata (31 žena i 16 muškaraca), prosječne starosti 77+/-14 godina. Prosječan broj injekcija u periodu od 8+/-2.1 godina, bio je 48+/-13 ( aflibercept 11+/-6, ranibizumab 37+/-

11). Najbolje korigirana vidna oštrina s početnih  $57 \pm 17$  ETDRS slova se poboljšala na  $60 \pm 16$  ETDRS slova na posljednjem kontrolnom pregledu. Prevalenca atrofije makule unutar ili na ivicama horoidne neovaskularizacije (CNV) je registrovana u 45% i povećala se na 74%. Ablacija zadnje hialoidne membrane i intraretinalne ciste su direktno u korelaciji s povećanjem atrofične lezije ( $R^2=0.16$ ,  $p=0.02$ ). Pojava atrofije van CNV lezije je direktno povezana s prisustvom retikularnih pseudodruza i intraretinalnih cista ( $R^2=0.24$ ,  $p=0.02$ ).

#### **Zaključak:**

Kod pacijenata koji su na kroničnom, dugotrajnog anti VEGF tretmanu, na progresiju atrofije makule utiču više prisustvo retikularnih pseudodruza, intraretinalne ciste, ablacija zadnje hialoidne membrane nego broj intravitrealnih injekcija.

#### **Title:**

Macular atrophy in patients with long-term anti-VEGF treatment for neovascular age-related macular degeneration

#### **Authors:**

Lala Ceklic, Marion R Munk, Andreas Ebneter, Wolfgang Huf, Sebastian Wolf, , Martin S. Zinkernagel

**Institution:**

Department of Ophthalmology and Department of Clinical Research, Inselspital, Bern University Hospital, and University of Bern, Switzerland

**Aim:**

To identify the prevalence and progression of macular atrophy (MA) in neovascular AMD patients under long-term anti-VEGF therapy and to determine risk-factors.

**Patients and methods:**

This study case-series included patients with neovascular AMD and  $\geq 30$  anti-VEGF injections. MA was measured using near infrared and SD-OCT. Yearly growth rate was estimated using square root transformation to adjust for baseline area and allow for linearization of growth rate. Multiple regression with Akaike information criterion (AIC) as model selection criterion was used to estimate the influence of various parameters on MA-area

**Results:**

49 eyes (47 patients, mean age  $77 \pm 14$ ) were included with a mean of  $48 \pm 13$  intravitreal anti-VEGF injections (ranibizumab:  $37 \pm 11$ , afibercept:  $11 \pm 6$ , mean number of injections/year  $8 \pm 2.1$ ) over a mean treatment period of  $6.2 \pm 1.3$  years (range 4-8.5). Mean best-corrected visual acuity improved from  $57 \pm 17$  letters at baseline (= treatment start) to  $60 \pm 16$  letters at last follow-up. The MA prevalence within and outside the choroidal neovascularization (CNV)-border at initial measurement was 45% and increased to 74%.

Mean MA-area increased from  $1.8 \pm 2.7$  mm<sup>2</sup> within and  $0.5 \pm 0.98$  mm<sup>2</sup> outside the CNV-boundary to  $2.7 \pm 3.4$  mm<sup>2</sup> and  $1.7 \pm 1.8$  mm<sup>2</sup>, respectively. Multivariate regression determined posterior vitreous detachment (PWD) and presence/development of intraretinal cysts (IRC) as significant factors for total MA size ( $R^2=0.16$ ,  $p=0.02$ ). MA-area outside the CNV-border was best explained by the presence of reticular pseudodrusen (RPD) and IRC ( $R^2=0.24$ ,  $p=0.02$ ).

**Conclusion:**

A majority of patients show MA after long-term anti-VEGF treatment. RPD, IRC and PVD but not number of injections or treatment duration seem associated with the MA-size

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