— 11. slovenski oftalmološki kongres
z mednarodno udeležbo
11th Slovenian Congress
of Ophthalmology
with international participation

— 34. simpozij oftalmologov
Slovenije in Hrvaške
34th Symposium of Ophthalmology
of Slovenia and Croatia

— **Portorož, 9. – 11. junij 2016**
Hotel Slovenija, Portorož

Portorož, 9th – 11th June 2016
Hotel Slovenija, Portorož

— **http://www.zos2016.si**

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PROGRAM
PROGRAMME

KRAJ / VENUE
HOTEL SLOVENIJA
OBALA 33, 6320 PORTOROŽ

Spoštovane kolegice in kolegi, dragi gostje,

Vljudno vabljeni na naš XI. kongres. Tokrat smo gostitelji tudi že 34. simpozija slovenskih in hrvaških oftalmologov, s katerimi smo v tradicionalno prijateljskih odnosih. Na vabilo za oddajo prispevkov ste se odzvali v velikem številu in program prinaša številne novosti in dosežke naše oftalmologije, pa tudi zanimive prikaze primerov. Z vseljem pozdravljamo tudi številne kvalitetne vabljene predavatelje iz tujine. Še posebej smo veseli prispevkov naših mladih oftalmologov. Vabimo vas, da izmed prispevkov mladih oftalmologov oddate svoj glas tudi za naslov predavatelja SOE in za izbor najboljšega kratkega prispevka.
Upamo, da bo v času kongresa v Portorožu lepo in toplo in, da bo tudi veliko priložnosti za prijateljsko druženje ter pogovor za poglobitev sodelovanja z našimi gosti iz tujine.

Prisrčno ste vabljeni na naš kongres.

Prof. dr. Marko Hawlina, dr. med.,
predsednik Združenja oftalmologov Slovenije

Dear colleagues, dear guests!

You are cordially invited to attend the 11th Congress of Slovenian ophthalmologists. On this occasion, we are also hosting the 34th Symposium of Ophthalmology of Slovenia and Croatia, welcoming our Croatian colleagues and to further strenghten our traditionally strong bonds. A great number of scientific papers have been submitted and we look forward to a compelling programme centred on new features and advancements in ophthalmology, as well as interesting case reports. We are honoured to be able to welcome numerous esteemed professionals from abroad as our featured speakers. Most notably, we welcome the papers to be presented by our young colleagues. You are invited to vote best short and longer paper by a young ophthalmologist, for the nomination of the SOE speaker.

In the hope that the weather in Portorož will be nice and warm and that there will be plenty of opportunity to socialise also informally and strengthen the ties with our foreign guests, we look forward to welcoming you among us.

Warmly welcome,

Prof. Marko Hawlina, MD, PhD
President of the Slovenian Society of Ophthalmology

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JEZIK NA KONGRESU
Jezika na kongresu bosta slovenski in angleški (brez prevajanja).
Vse slikovno gradivo mora biti opremljeno z angleškimi napisi.

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mehanizem delovanja

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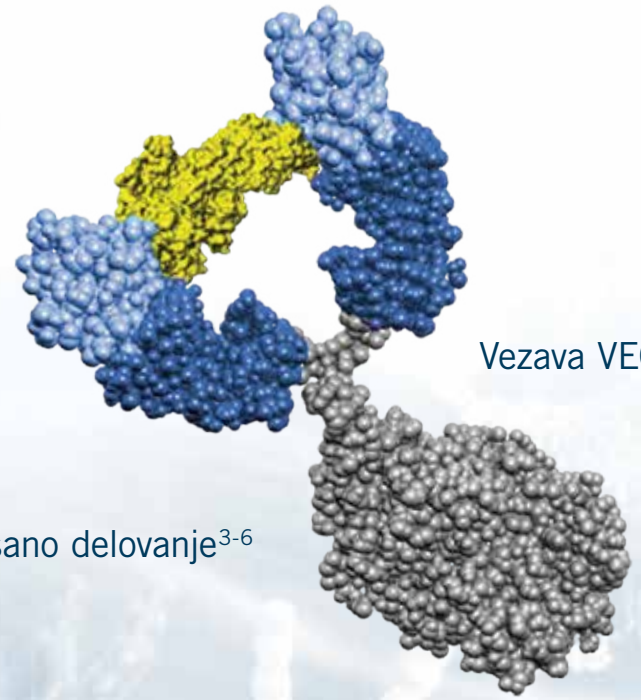

Vezava VEGF in PlGF[1]

Podaljšano delovanje[3-6]

1. Povzetek glavnih značilnosti zdravila Eylea®
2. Papadopoulos N in sod. Angiogenesis. 2012;15(2):171-185 doi:10.1007/s10456-011-9249-6
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(aflibercept raztopina za injiciranje)

SKRAJŠAN POVZETEK GLAVNIH ZNAČILNOSTI ZDRAVILA

Eylea 40 mg/ml raztopina za injiciranje v viali.

Pred predpisovanjem, prosimo, preberite celoten povzetek značilnosti zdravila!

▼ Za to zdravilo se izvaja dodatno spremljanje varnosti. Tako bodo hitreje na voljo nove informacije o njegovi varnosti. Zdravstvene delavce naprošamo, da poročajo o katerem koli domnevnem neželenem učinku zdravila.

KAKOVOSTNA IN KOLIČINSKA SESTAVA:
1 ml raztopine za injiciranje vsebuje 40 mg aflibercepta Ena viala vsebuje 100 mikrolitrov raztopine, kar ustreza 4 mg aflibercepta.
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TERAPEVTSKE INDIKACIJE:
Zdravilo Eylea je indicirano za zdravljenje:
1 neovaskularne (vlažne) starostne degeneracije rumene pege (makule) pri odraslih (SDM)
2 okvare vida zaradi makularnega edema, kot posledice zapore mrežnične vene (zapore veje mrežnične vene – BRVO - Branch Retinal Vein Occlusion ali zapore centralne mrežnične vene - CRVO - Central Retinal Vein Occlusion)
3 okvare vida zaradi diabetičnega makularnega edema (DME – Diabetic Macular Oedema)
4 okvare vida zaradi miopične horoidalne neovaskularizacije (miopične CNV – myopic Choroidal NeoVascularisation)

ODMERJANJE IN NAČIN UPORABE:
Zdravilo Eylea je samo za intravitrealno injiciranje. Zdravilo Eylea sme aplicirati samo usposobljen zdravnik, ki ima izkušnje z dajanjem intravitrealnih injekcij.
Priporočeni odmerek zdravila Eylea je 2 mg aflibercepta, kar ustreza 50 mikrolitrom raztopine.
Pri SDM se zdravljenje z zdravilom Eylea začne z eno injekcijo na mesec tri zaporedne mesece, nato pa nadaljuje z eno injekcijo vsaka dva meseca. Med posameznimi injekcijami spremljanje bolnikov ni potrebno. Po prvih 12 mesecih zdravljenja z zdravilom Eylea se lahko, glede na ostrino vida in/ali anatomski izgled rumene pege, interval med injekcijami podaljša. V tem primeru mora lečeči zdravnik določiti načrt spremljanja bolnika; pregledi so lahko pogostejši kot je načrtovano injiciranje zdravila.
Pri ZMV (zapore veje mrežnične vene ali centralne mrežnične vene), se po začetni injekciji zdravilo aplicira enkrat na mesec. Interval med dvema odmerkoma ne sme biti krajši kot en mesec. Če ocena ostrine vida in anatomski izgled rumene pege kažeta, da bolnik nima koristi od nadaljevanja zdravljenja, je treba z zdravljenjem z zdravilom Eylea prenehati. Mesečno zdravljenje se nadaljuje, dokler ni dosežena največja ostrina vida in/ali ni znakov napredovanja bolezni. Morda bo tri ali več zaporednih mesecev potrebna 1 injekcija na mesec.
Zdravljenje bo morda treba nadaljevati z režimom »zdravi in podaljšaj«, s postopnim podaljševanjem intervala med injekcijami, da se ohrani stabilen vid in/ali anatomski izgled rumene pege, čeprav ni dovolj podatkov za odločitev glede dolžine intervalov.
Če se glede na oceno ostrine vida in/ali anatomskega izgleda rumene pege stanje poslabša, je treba intervale med injekcijami ustrezno skrajšati. Načrt spremljanja in zdravljenja mora določiti lečeči zdravnik in sicer glede na odziv posameznega bolnika na zdravljenje. Spremljanje napredovanja bolezni lahko vključuje klinični pregled, funkcijske preiskave in slikovne metode (npr. optična koherentna tomografija ali fluoresceinska angiografija).
Pri DME se zdravljenje z zdravilom Eylea se začne z eno injekcijo na mesec, pet zaporednih mesecev, nato pa nadaljuje z eno injekcijo vsaka dva meseca. Med posameznimi injekcijami spremljanje bolnikov ni potrebno. Po prvih 12 mesecih zdravljenja z zdravilom Eylea se lahko, glede na oceno ostrine vida in/ali anatomski izgled rumene pege, intervali med injekcijami podaljšajo. Načrt spremljanja bolnika mora določiti lečeči zdravnik. Če ocena ostrine vida in anatomski izgled rumene pege kažeta, da bolnik nima koristi od nadaljevanja zdravljenja, je treba z zdravljenjem z zdravilom Eylea prenehati.
Pri mHNV: priporočeni odmerek zdravila Eylea je ena intravitrealna injekcija 2 mg aflibercepta, kar ustreza 50 mikrolitrom raztopine. Dodatni odmerki se lahko uporabijo, če ocena ostrine vida in/ali anatomski izgled rumene pege kažejo, da je bolezen še prisotna. Ponovitve bolezni je treba zdraviti kot nov pojav bolezni. Načrt spremljanja bolnika mora določiti zdravnik. Interval med dvema injekcijama ne sme biti krajši od enega meseca.

KONTRAINDIKACIJE:
Preobčutljivost na zdravilno učinkovino aflibercept ali katero koli pomožno snov. Aktivna okužba očesa ali periokularna okužba ali sum nanjo. Aktivno hudo vnetje v očesu.

POSEBNA OPOZORILA IN PREVIDNOSTNI UKREPI:
Endoftalmitis: intravitrealne injekcije so povezovali z endoftalmitisom, intraokularnim vnetjem, regmatogenim odstopom mrežnice, raztrganinami mrežnice in iatrogeno travmatsko katarakto. Pri uporabi zdravila Eylea je treba vedno upoštevati ustrezne aseptične tehnike injiciranja. V tednu po prejemu injekcije je treba bolnike dodatno spremljati, da se, v primeru okužbe, lahko začne zgodnje zdravljenje. Bolnike je treba poučiti, da nemudoma poročajo o vseh simptomih, ki bi lahko kazali na endoftalmitis, ker je treba ustrezno ukrepati. *Povišanje intraokularnega tlaka* so opažali v 60 minutah po intravitrealni injekciji, tudi po injiciranju zdravila Eylea. Posebna previdnost je potrebna pri bolnikih z neustrezno zdravljenim glavkomom (zdravila Eylea ne injicirajte, če je intraokularni tlak ≥ 30 mmHg). V vseh primerih je treba zato ustrezno spremljati intraokularni tlak in perfuzijo glave vidnega živca in ustrezno ukrepati. *Imunogenost:* ker je aflibercept terapevtski protein, obstaja možnost za razvoj imunogenosti z zdravilom Eylea. Bolnike je treba poučiti, da poročajo o vseh znakih in simptomih vnetja v očesu npr. bolečini, fotofobiji ali pordelosti, ki bi lahko bila klinični znak preobčutljivosti.
Sistemski neželeni učinki: po intravitrealnih injekcijah zaviralcev VEGF so poročali o sistemskih neželenih učinkih, tudi krvavitvah izven očesa in arterijskih trombembolijah. Varnosti in učinkovitosti zdravljenja z zdravilom Eylea, sočasno apliciranim v obe očesi, niso sistematično preučevali. Na voljo ni podatkov glede sočasne uporabe zdravila Eylea z drugimi zaviralci VEGF (sistemski ali okularni).
Dejavniki tveganja za *zatrganje pigmentnega epitelija mrežnice* po uporabi zdravil proti VEGF za zdravljenje vlažne starostne degeneracije makule sta obsežen in/ali visok odstop pigmentnega epitelija mrežnice. Pri uvajanju zdravila Eylea je pri bolnikih z navedenimi dejaviki tveganja za raztrganje pigmentnega epitelija mrežnice potrebna previdnost.
Pri bolnikih z regmatogenim odstopom mrežnice ali foramnom makule III. ali IV. stopnje je treba zdravljenje prekiniti. V primeru pretrganja mrežnice je treba z zdravljenjem prenehati in se ga ne sme ponovno začeti, dokler ni raztrganje ustrezno pozdravljeno.
Z zdravljenjem je treba prenehati in se ga ne sme začeti ponovno prej kot ob naslednjem načrtovanem odmerku v naslednjih primerih:
- zmanjšana najboljša korigirana ostrina vida (BCVA) > 30 črk v primerjavi z zadnjo oceno ostrine vida,
- krvavitev pod mrežnico, tudi v vidni jamici (fovea centralis) ali, če je velikost krvavitve > 50 % celotne lezije.

Z zdravljenjem je treba prenehati 28 dni pred načrtovano intraokularno operacijo in se sme z njim nadaljevati šele po 28 dneh po opravljeni intraokularni operaciji.
Nosečnost in dojenje: Čeprav je sistemska izpostavljenost po intraokularni uporabi zelo majhna, se zdravila Eylea ne sme uporabljati med nosečnostjo, razen če možne koristi pretehtajo možna tveganja za plod. Ženske v rodni dobi morajo med zdravljenjem in še vsaj 3 mesece po zadnji intravitrealni injekciji aflibercepta uporabljati učinkovito kontracepcijo. Ni znano, ali se aflibercept izloča v materino mleko. Tveganja za dojenega otroka se ne da izključiti. Uporabe zdravila Eylea se ne priporoča med dojenjem. Odločiti se je treba med prenehanjem dojenja in prenehanjem zdravljenja z zdravilom Eylea, pri čemer je treba pretehtati prednosti dojenja za otroka in prednosti zdravljenja za mater.
Populacije za katere je na voljo malo podatkov: Na voljo so omejene izkušnje z zdravljenjem bolnikov z ishemično zaporo centralne mrežnične vene in zaporo veje mrežnične vene. Pri bolnikih s kliničnimi znaki ireverzibilne ishemične izgube vidne funkcije se zdravljenja ne priporoča.
Izkušnje z zdravljenjem bolnikov z diabetičnim makularnim edemom zaradi sladkorne bolezni tipa I ali bolnikov s sladkorno boleznijo, pri katerih je HbA1c več kot 12 % ali s proliferativno diabetično retinopatijo, so omejene.
Zdravila Eylea niso preučevali pri bolnikih z aktivno sistemsko okužbo ali pri bolnikih s sočasnimi očesnimi boleznimi, kot sta odstop mrežnice ali makularna luknja. Izkušenj z zdravljenjem bolnikov s sladkorno boleznijo in neurejeno hipertenzijo z zdravilom Eylea ni. Zdravnik, ki zdravi takšne bolnike, mora upoštevati, da ni na voljo dovolj podatkov.
Izkušenj z zdravljenjem miopične CNV z zdravilom Eylea pri neazijskih bolnikih, bolnikih, ki so že bili zdravljeni zaradi miopične CNV, in bolnikih z lezijami zunaj fovee (ekstrafovealne lezije) ni.

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Zelo pogosti: krvavitev v očesno veznico, zmanjšana ostrina vida, bolečina v očesu; *Pogosti:* zatrganje pigmentnega epitelija mrežnice, odstop pigmentnega epitelija mrežnice, degeneracija mrežnice, krvavitev v steklovino, katarakta, kortikalna katarakta, nuklearna katarakta, subkapsularna katarakta, erozija roženice, abrazija roženice, povišanje intraokularnega tlaka, zamegljen vid, motnjave v steklovini, odstop steklovine, bolečina na mestu injiciranja, občutek tujka v očesu, močnejše solzenje, edem veke, krvavitev na mestu injiciranja, pikčasti keratitis, hiperemija veznice, očesna hiperemija. *Občasni:* preobčutljivost (vključno z alergijskimi reakcijami), endoftalmitis, odstop mrežnice, raztrganine mrežnice, motnjava leče, poškodba roženičnega epitelija, draženje na mestu injiciranja, nenormalen občutek v očesu, draženje veke, iritis, uveitis, iridociklitis, edem roženice, motnjave v sprednjem prekatu. *Redki:* slepota, travmatska katarakta, vitritis, hipopion. *Stranski učinki povezani z vrsto zdravila:* povečana incidenca krvavitev pod veznico pri bolnikih, ki so prejemali antitrombotike. Možnost razvoja imunogenosti.

Način izdajanja zdravila: Izdaja zdravila je le na recept.

Imetnik dovoljenja za promet: Bayer Pharma AG, D-13342 Berlin, Germany

Za nadaljnje informacije o zdravilu Eylea, se lahko obrnete na:
Bayer d.o.o., Bravničarjeva 13, 1000 Ljubljana

Verzija: 11/2015

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PROGRAM NA PRVI POGLED
PROGRAMME AT A GLANCE

Glavnina: Dvorana Cristoforo Colombo / Main events: Cristoforo Colombo Hall

ČETRTEK, 9. junij 2016
THURSDAY, 9 June 2016

10.00–14.45	Tečaj optične koherentne tomografije / Course on optic coherent tomography Dvorana ***Roald Amundsen*** / *Roald Amundsen* Hall
13.00	Registracija / Registration
14.55–15.00	Uvodni pozdrav / Welcome address
15.00–16.15	STRABIZEM / STRABISMUS
16.15–16.45	Odmor za kavo / Coffee break
16.45–18.45	ROŽENICA / CORNEA
18.45	Uradna otvoritev / Formal opening
19.30	Sprejem / Welcome reception Terasa Mystica / Mystica Terrace

PETEK, 10. junij 2016
FRIDAY, 10 June 2016

7.30	Registracija / Registration
8.00–12.00	Vzporedni program za medicinske sestre / Parallel programme for nurses Dvorana ***Amerigo Vespucci*** / *Amerigo Vespucci* Hall
8.30–10.45	MREŽNICA I / RETINA I
10.45–11.05	Odmor za kavo / Coffee break
11.05–12.09	MREŽNICA II / RETINA II
12.09–13.30	MREŽNICA III / RETINA III
13.30–14.15	Satelitski simpozij / Satellite Symposium (Bayer)
14.15–15.00	Odmor za kosilo / Lunch break
15.00–15.45	VITREORETINALNA KIRURGIJA / VITREORETINAL SURGERY
15.45–17.00	GLAVKOM / GLAUCOMA
17.00–17.20	Odmor za kavo / Coffee break
17.20–18.30	ZUNANJI OČESNI DELI, ORBITA, OKULOPLASTIKA / EXTRAOCULAR STRUCTURES, ORBIT, OCULOPLASTIC SURGERY
18.30–19.10	OČESNI TUMORJI / OCULAR TUMOURS
20.30	Kongresna večerja / Congress dinner Obala Meduza / Medusa Beach

SOBOTA, 11. junij 2016
SATURDAY, 11 June 2016

8.00	Registracija / Registration
8.30–9.50	NEVROOFTALMOLOGIJA / NEUROOPHTHALMOLOGY
9.50–10.45	Satelitski simpozij s prigrizkom / Satellite Symposium with snacks (Ewo Pharma / Santhera)
10.45–13.00	KATARAKTA IN REFRAKTIVNA KIRURGIJA / CATARACT AND REFRACTIVE SURGERY
13.00–13.10	Razglasitev najboljšega kratkega in daljšega prispevka (predavanja SOE) mladih oftalmologov in zaključek / Announcement of best short and long (SOE lecture) presentations by young ophthalmologists and Closing

PROGRAM S STRANMI POVZETKOV
PROGRAMME WITH PAGES OF THE ABSTRACTS

Nadalj. / Cont. →

18.00–18.03	Mateja Groboljšek Žgavc, Slavica Podgoršek PARINAUDEV OKULOGLANDULARNI SINDROM – PRIKAZ PRIMERA PARINAUD OCULOGLANDULAR SYNDROME – A CASE PRESENTATION	76
18.03–18.06	Peter Kiraly, Vlasta Štrumbelj, Gregor Gruškovnjak SUHOST OČI IN MENOPAVZA DRY EYES AND MENOPAUSE	77
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18.45	**Uradna otvoritev / Formal opening** **Dvorana Cristoforo Colombo / Cristoforo Colombo Hall**	
19.30	**Dobrodošlica / Welcome reception** **Terasa Mystica / Mystica Terrace**	

PETEK, 10. junij 2016
FRIDAY, 10 June 2016

7.30 **Registracija / Registration**

8.00–12.00 **Vzporedni program za medicinske sestre / Parallel programme for nurses**
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Dvorana Amerigo Vespucci / Amerigo Vespucci Hall

8.30–10.45 **MREŽNICA I / RETINA I**
Dvorana Cristoforo Colombo / Cristoforo Colombo Hall
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8.30–8.33 Satar Baghrizabehi
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8.33–8.40 Edi Ladavac
TELANGIEKTAZIJA RUMENE PEGE TIP 2
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8.40–8.47 Darja Dobovšek Divjak, Aleksandra Kraut, Mojca Urbančič, Alenka Lavrič, Ana Pajtler Rošar, Marko Šulak, Polona Jaki Mekjavić
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VISUAL ACUITY AFTER ANTI-***VEGF*** TREATMENT OF NEOVASCULAR AGE-RELATED MACULAR DEGENERATION DEPENDS ON BASELINE VISUAL ACUITY 84

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KAKO PREPOZNATI BOLEZNI, KI SPOMINJAJO NA SUHO ALI VLAŽNO OBLIKO STAROSTNE DEGENERACIJE RUMENE PEGE?
HOW TO SPOT DISEASES THAT MIMIC DRY OR WET AGE-RELATED MACULAR DEGENERATION? 85

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9.11–9.21 Maurizio Battaglia Parodi (na povabilo družbe / invited by Novartis)
DOLGOROČNI IZIDI ZDRAVLJENJA ***SDM*** IN ***DME*** Z ZDRAVILI ANTI-***VEGF***
LONG-TERM OUTCOMES OF ANTI-***VEGF*** THERAPY FOR ***AMD*** AND ***DME*** 88

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9.51–10.06	Giovanni Staurenghi (predavanje na povabilo / invited lecture) OPTIČNA KOHERENTNA ANGIOGRAFIJA: KAKO TOLMAČITI SLIKE ***OCT***-ANGIOGRAPHY: HOW TO INTERPRETE THE IMAGES	92
10.06–10.09	Mojca Urbančič, Ana Pajtler Rošar, Alenka Lavrič Groznik, Marija Ana Schwarzbartl Pfeifer, Vladimir Pfeifer VLOGA ***OCT***-ANGIOGRAFIJE V DIAGNOSTIKI SUBRETINALNE NEOVASKULARIZACIJE PRI BOLNIKIH Z MAKULARNIMI TELANGIEKTAZIJAMI TIPA 2 ***OCT***-ANGIOGRAPHY IN DIAGNOSTICS OF SUBRETINAL NEOVASCULARIZATION IN PATIENTS WITH MACULAR TELANGIECTASIA TYPE 2	93
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SOBOTA, 11. junij 2016
SATURDAY, 11 June 2016

8.00	**Registracija / Registration**	
8.30–9.50	**NEVROOFTALMOLOGIJA / NEUROOPHTHALMOLOGY** **Dvorana Cristoforo Colombo / Cristoforo Colombo Hall** *Moderatorja / Moderators*: Marko Hawlina, Branka Stirn Kranjc	159
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8.40–8.47	Tomislav Vidović, Branimir Cerovski, Tomislav Jukić, Zlatko Juratovac NEARTERITIČNA SPREDNJA ISHEMIČNA OPTIČNA NEVROPATIJA IN ZDRAVLJENJE S KORTIKOSTEROIDI PATIENTS WITH NON-ARTERITIC ANTERIOR ISCHEMIC OPTIC NEUROPATHY AND CORTICOSTEROID THERAPY	162
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8.57–9.00	Martina Jarc Vidmar, Petra Zorman, Maja Šuštar, Maša Hafner, Janja Pretnar-Oblak, Polona Jaki-Mekjavić, Marko Hawlina OCENA DELOVANJA MREŽNICE PRI SESTRI IN BRATU S SINDROMOMA *MELAS* IN *MIDD* IN MITOHONDRIJSKO MUTACIJO DNK *A3243G* FUNCTION OF THE RETINA IN SISTER AND BROTHER WITH *MELAS* AND *MIDD* SYNDROME WITH MITOCHONDRIAL *A3243G* MUTATION	166
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9.06–9.13	Darja Dobovšek Divjak, Špela Markelj, Branka Stirn Kranjc, Manca Tekavčič Pompe IDIOPATSKA INTRAKRANIALNA HIPERTENZIJA PRI OTROCIH – PRIKAZ PRIMEROV IDIOPATHIC INTRACRANIAL HYPERTENSION IN CHILDREN – A CASE SERIES	170

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PREDSTAVITVE Z VIDEOPOSNETKI
VIDEO PRESENTATIONS

Vse tri dni / All three days

Dvorana Robert Scott / Robert Scott Hall

TEČAJ OPTIČNE KOHERENTNE TOMOGRAFIJE
COURSE ON OPTIC COHERENT TOMOGRAPHY

ČETRTEK, 9. junij 2016
THURSDAY, 9 June 2016

Dvorana ***Roald Amundsen*** / *Roald Amundsen* Hall

Christian Simader, Deák Gábor

Vienna Reading Center, ***https://www.meduniwien.ac.at/vrc/vrc/index.php***

10.00–11.00	Predavanje: teoretični del (osnove tehnike, tipi aparatov itd.) Lecture: theoretical background (basic techniques, types of appliances)
11.00–12.00	Prikaz dela z aparatom Handling the apparatus
12.00–13.00	Odmor za kosilo Lunch break
13.00–14.45	Prikaz izvidov pri različnih boleznih mrežnice Various retinal diseases – OCT-presentation of cases

Tečaj organizira Sekcija za bolezni mrežnice Združenja oftalmologov Slovenije s pomočjo družbe Novartis in izdelovalcev OCT-aparatov, udeležencev kongresa, ki so dali v uporabo svoje aparate.
Brez kotizacije

The Course is organized by the Section for the retinal diseases of the Slovenian Society of ophthalmology, financially supported by Novartis, and in co-operation with the producers of OCT-appliances participating in the Congress and enabling demonstrations on their products.
Free access.

PROGRAM ZA MEDICINSKE SESTRE

PETEK, 10. junij 2016

Dvorana Amerigo Vespucci

08.00–08.30	Registracija udeležencev
08.30—08.40	Otvoritev srečanja in pozdrav udeležencem

I. SKLOP
Moderator: Andreja Marolt

08.40–9.00	**Anatomija očesa** – Marija Jesenšek, Očesna klinika Ljubljana
09.00–09.20	**Redki očesni raki** – Jožica Rebolj, Očesna klinika Ljubljana
09.20–09.40	**Endokrina orbitopatija** – Katja Rožič, Breda Kojc, Očesni oddelek UKC Maribor
09.40–10. 00	**Zgodnja fizioterapija po parezi obraznega živca z lagoftalmusom** – Marjana Šuštar Berger, Očesna klinika Ljubljana
10.00–10.30	odmor

II. SKLOP
Moderator: Saša Mohar

10.30–10.50	**Vrsta laserjev in njihova uporaba** – Milena Suhadolnik, Očesna klinika Ljubljana
10.50–11.10	**Oftalmološka slikovna diagnostika pri pacientih, ki se zdravijo z zdravili Ani VEGF / protokol Očesne klinike Ljubljana** - Barbara Klemenc, oftalmološka fotografinja, Očesna klinika Ljubljana
11.10–11.30	**Reprocesiranje mikrokirurških inštrumentov na Očesnem oddelku SB Novo Mesto** – Marta Blažič, JožicaTamše, Očesni oddelek SB Novo Mesto
11.30–11.50	**Izobraževanje operacijskih medicinskih seste**r – Helena Stupan, Alenka Poštrak, Očesni oddelek UKC Maribor
11.50–12.00	Zaključek seminarja in razdelitev potrdil

PREDAVANJA NA POVABILO ZDRUŽENJA OFTALMOLOGOV SLOVENIJE
LECTURES INVITED BY SLOVENIAN SOCIETY OF OPHTHALMOLOGY

ČETRTEK, 9. junij 2016
THURSDAY, 9 June 2016

17.06–17.21 Diego Ponzin, Alessandro Ruzza
PREDPRIPRAVLJENA TKIVA ZA ***DSAEK*** IN ***MEK***
– NOVOST V ENDOTELIJSKI KERATOPLASTIKI
PRE-LOADING ***DSAEK*** AND ***MEK*** TISSUES:
INNOVATION IN ENDOTHELIAL KERATOPLASTY

PETEK, 10. junij 2016
FRIDAY, 10 June 2016

9.51–10.06 Giovanni Staurenghi
OPTIČNA KOHERENTNA ANGIOGRAFIJA: KAKO TOLMAČITI SLIKE
OCT-ANGIOGRAPHY: HOW TO INTERPRETE THE IMAGES

11.28–11.43 Maurizio Battaglia Parodi
TRENDI DIAGNOSTIKE IN ZDRAVLJENJA PRI CENTRALNI SEROZNI HORIORETINOPATIJI
TRENDS IN DIAGNOSIS AND TREATMENT OF CENTRAL SEROUS CHORIORETINOPATHY

12.23–12.38 Panagiotis Sergouniotis
DISTROFIJE RUMENE PEGE Z VIDEZOM ***SDM***
MACULAR DYSTROPHIES MIMICKING ***AMD***

SOBOTA, 11. junij 2016
SATURDAY, 11 June 2016

10.45–11.00 Rafael Barraquer
SMISELNA RABA ROŽENIČNIH OBROČKOV PRI KERATOKONUSU
MAKING SENSE OF INTRACORNEAL RING SEGMENTS IN KERATOCONUS

Informacije za avtorje in udeležence

Information for speakers and participants

INFORMACIJA ZA AVTORJE IN UDELEŽENCE

INFORMACIJE ZA PREDAVATELJE

Čas za ustno predstavitev (ne le enega kliničnega primera) bo omejen na 7 minut , kratke predstavitve pa na 3 minute. V 7-minutni blok je všteta kakršna koli morebitna projekcija z največ 20 slikami / diasi. Uvodna in vabljena predavanja bodo omejena na 15 minut (12 minut in 3 minute razpravljanja) ter z morebitno projekcijo največ 30 slik / diasov. Čas ustne predstavitve je strogo omejen in bo po preteku slika avtomatično izklopljena. Zato vas vljudno prosimo, da preverite čas svoje predstavitve.

RAZKRITJE NASPROTJA INTERESOV

Vsi avtorji morajo razkriti vsakršno mogoče nasprotje interesov. Ustne predstavitve mora spremljati projekcija izjave o nasprotju interesov. Vsak avtor se mora izjaviti glede nasprotja interesov ne glede na to, ali pri njem resnično obstaja.

TEHNIČNA OPREMA ZA PROJEKCIJE

Projektor (dataskop) za računalniško projekcijo (ločljivost do 1024 x 768 pik)
video projekcije samo na DVD-jih (regija 2)
Sprejeti bodo samo prispevki za projekcijo v programu MS Power Point, priporočamo verzijo 2007. Prosimo, da pred oddajo prispevka za referat preverite delovanje. Prispevek za predstavitev naj bo na CD-ju ali DVD-ju v obliki za branje na tujem računalniku ali na USB-pomnilniku.

DRUŽABNI PROGRAM

Udeležence in spremljevalce vabimo na naslednje dogodke (vključeno v ceno kotizacije):

ČETRTEK, 9. junij 2016
19.30–20.30 Otvoritveni sprejem

PETEK, 11. junij 2016
20.30–24.00 Večerja

REGISTRACIJSKI PULT

Registracijski pult v preddverju Hotela Slovenije bo odprt v:
četrtek, 9. 6. 13.00–18.30
petek, 10. 6. 7.30–19.00
soboto, 11. 6. 8.00–13.00
Udeležence in spremljevalce prosimo, da se prijavijo pri registracijskem pultu, kjer bodo na voljo tudi vse dodatne informacije.

KOTIZACIJE

- Kotizacija za člane Združenja oftalmologov Slovenije (ZOS) **250 EUR**
- Kotizacija za nečlane ZOS **300 EUR**
- Kotizacija za specializante, člane ZOS **100 EUR**
- Kotizacija za specializante, nečlane ZOS **135 EUR**

Zneski vključujejo DDV.

Plačana kotizacija (katera koli) vključuje:
- imensko priponko
- vstop na vsa predavanja
- postrežbo med odmori
- programsko knjižico z izvlečki
- otvoritveni sprejem
- večerja

INFORMATION FOR SPEAKERS

DISCLOSURE — CONFLICT OF INTEREST

All presenters (invited and abstract submitters) must declare any potential conflict of interest. Oral presenters also have to incorporate a disclosure slide in their presentation. Disclosure is mandatory for all presenters, whether they have a conflict of interest to disclose or not.

TIME OF PRESENTATIONS

Free papers: 7 minutes will be allotted to a longer presentation with maximum of 20 slides, and 3 min to; to a short presentation.

Invited and introductory presentations: Fifteen minutes will be allotted for presentation (12 minutes and 3 minutes for discussion), with maximum of 30 slides. The time is strictly limited so the presentation will be automatically turned off after the lapse of the appointed time. We are kindly asking you to check the time of your presentation.

PROJECTION FACILITIES FOR PRESENTATIONS

DATA projectors (DATASCOPE) for computer presentation (resolution up to 1024 x 768 pixels)
Video on DVD (Region 2)
Notebook or PC with Windows XP operating system and Microsoft Office 2007.
Please note: Projection from a personal notebook will not be permitted, slide and overhead projector will not be available.

SOCIAL PROGRAMME

Social programme is included in the registration fee for participants.

THURSDAY, June 9, 2016
19.30–20.30 Welcome reception

FRIDAY, June 10, 2016
20.30–24.00 Congress dinner

REGISTRATION AND INFORMATION DESK

The registration desk, to be located in the Foyer of Faculty of Medicine, opens as follows:

Thursday, 9 June	13.00–18.30
Friday, 10 June	7.30–19.00
Saturday, 11 June	8.00–13.00

REGISTRATION FEE

- Registration fee for the member of the Slovenian Ophthalmology Association **250 EUR**
- Registration fee for the non-member of the Slovenian Ophthalmology Association **300 EUR**
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- Book of abstracts
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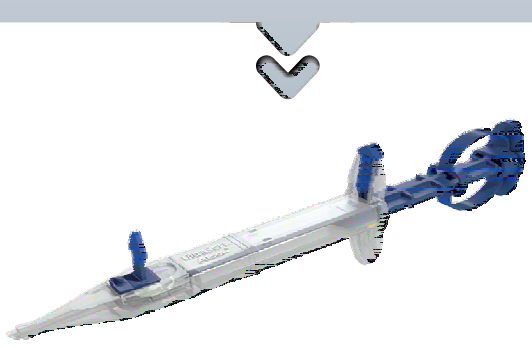
NOVO!

UltraSert®

Pre-loaded Delivery System

(sistem za implantacijo predvstavljenih intraokularnih leč)

Injektor za enkratno uporabo, za večji nadzor.[1-4]



Kombinacija sistema manualne implantacije s prednostmi injektorja s predvstavljeno lečo, sistem UltraSert® omogoča:

- **Enostaven izstis** – potisni bat TensionGilde™ omogoča gladko in enakomerno enoročno potiskanje bata [*1-3]
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*22 out of 42 cataract surgeons who tried UltraSert® System prototypes in an artificial setting spontaneously used "smooth" to describe the advancement of the plunger.

1. AcrySof® IQ UltraSert™ Preloaded Delivery System Directions for Use. 2. UltraSert® Delivery System Prototype Human Factor Testing, 4 June 2015. 3. UltraSert® Message Research Results Presentation.
4. Comparative Assessment of IOL Delivery Systems. Alcon internal technical report: TDOC-0018957. Effective Date 19 May 2015.

NOVO! AcrySof® IQ PanOptix®

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ENLIGHTEN (**EN**hanced **LIGHT EN**ergy) je optična tehnologija, ki imitira funkcijo zdrave intraokularne leče, zato je AcrySof® IQ PanOptix® IOL naravni izbor za korekcijo napredovane presbiopije:

- **Optimizirana izkoriščenost svetlobe v IOL za korekcijo presbiopije**
  Prepušča 88% svetlobe, kar omogoča optimalno vidno ostrino na vseh razdaljah.[1,2]
- **Boljša ostrina srednjega vida in vida na bližino.**
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- **Manjša odvisnost od velikosti zenice.**
  Difraktivna cona širine 4,5 mm je oblikovana za optimalno delovanje pri različnih svetlobnih pogojih. [3]

Več informacij o intraokularnih lečah za korekcijo presbiopije z AcrySof® IQ PanOptix® lahko dobite pri predstavnikih podjetja Alcon.

1. AcrySof® IQ PanOptix® IOL Directions for Use. 2. Alcon Laboratory Notebook:14073:77-78. 3. PanOptix® Diffractive Optical Design. Alcon internal technical report: TDOC-0018723. Effective date 19 Dec 2014. 4. Charness N, Dijkstra K, Jastrzembski T, et al. Monitor viewing distance for younger and older workers. Proceedings of the Human Factors and Ergonomics Society 52nd Annual Meeting, 2008. http://www.academia.edu/477435/Monitor_Viewing_Distance_for_Younger_and_Older_Workers. Accessed April 9, 2015. 5. Average of American OSHA, Canadian OSHA and American Optometric Association Recommendations for Computer Monitor Distances.

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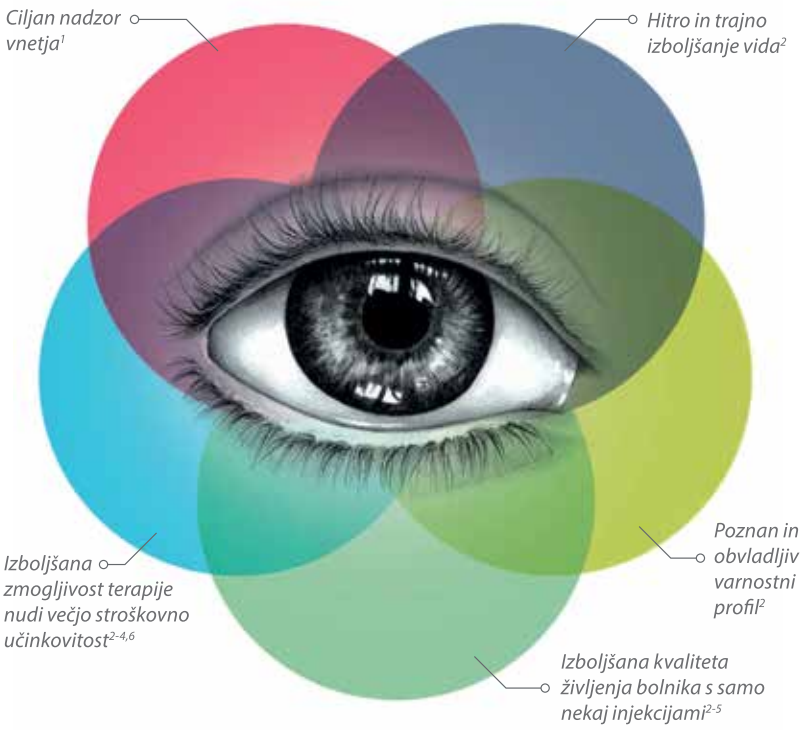

POGLEJTE SI RAZLIKO PRI 360° TERAPIJI

OZURDEX® 700 mikrogramov intravitrealni vsadek v aplikatorju, deksametazon: za zdravljenje odraslih bolnikov z okvaro vida zaradi diabetičnega makularnega edema (DME), ki imajo psevdofakijo ali se slabše odzivajo ali niso primerni za zdravljenje brez kortikosteroidov in za zdravljenje odraslih bolnikov z makularnim edemom po okluziji veje retinalne vene (BRVO) ali okluziji centralne retinalne vene (CRVO) ter za zdravljenje odraslih bolnikov z vnetjem posteriornega dela očesa, ki se kaže kot nenalezljivi uveitis.

Ozurdex®
(700 mikrogramov intravitrealni vsadek, deksametazon)

OZURDEX 700 mikrogramov intravitrealni vsadek v aplikatorju

Kakovostna in količinska sestava: En vsadek vsebuje 700 mikrogramov deksametazona. **Terapevtske indikacije:** Zdravilo OZURDEX je indicirano za zdravljenje odraslih bolnikov z: okvaro vida zaradi diabetičnega makularnega edema (DME), ki imajo psevdofakijo ali se slabše odzivajo ali niso primerni za zdravljenje brez kortikosteroidov; makularnim edemom po okluziji veje retinalne vene (BRVO) ali okluziji centralne retinalne vene (CRVO); vnetjem posteriornega dela očesa, ki se kaže kot nenalezljivi uveitis. **Odmerjanje in način uporabe:** Zdravilo OZURDEX mora injicirati usposobljen oftalmolog z izkušnjami z intravitrealnim injiciranjem. Odmerjanje: Priporočeni odmerek je en vsadek zdravila OZURDEX v prizadeto oko. Sočasno injiciranje v obe očesi ni priporočljivo. *DME:* Pri bolnikih, zdravljenih z zdravilom OZURDEX, ki so se odzvali na prvo zdravljenje in za katere zdravnik meni, da bi jim ponovno zdravljenje koristilo, ne da bi bili pri tem izpostavljeni znatnemu tveganju, se lahko izvede ponovno zdravljenje. Ponovno zdravljenje se lahko izvede po približno šestih mesecih, če se bolniku poslabša vid in/ali odebeli mrežnica zaradi ponavljajočega ali poslabšanega stanja diabetičnega makularnega edema. Na področju zdravljenja DME zaenkrat ni izkušenj o učinkovitosti ali varnosti večkratnega odmerjanja pri več kot 7 vsadkih. *RVO in uveitis:* O ponovnem odmerjanju je treba razmisliti, kadar se bolnik odzove na zdravljenje, nato pa se mu ostrina vida zmanjša, pri tem pa ponovno zdravljenje po mnenju zdravnika lahko koristi bolniku, ne da bi bil ta izpostavljen znatnemu tveganju. Bolnikov, pri katerih pride do izboljšanega vida in se ta vzdržuje, ne smete ponovno zdraviti. Bolnikov, pri katerih se pojavi poslabšanje vida, ki ga zdravilo OZURDEX ne ustavi, ne smete ponovno zdraviti. Podatki o ponovnem odmerjanju v presledku, krajšem od 6 mesecev, so zelo omejeni. Trenutno ni izkušenj z večkratnim odmerjanjem pri nenalezljivem posteriornem uveitisu ali z odmerjanjem več kot 2 vsadkov pri okluziji retinalne vene. *Posebne populacije: Starejši bolniki (≥ 65 let):* Pri starejših bolnikih ni potrebno prilagajanje odmerka. *Okvara delovanja ledvic in delovanja jeter:* Zdravila OZURDEX niso preučevali pri bolnikih z okvaro delovanja ledvic in jeter, vendar pa pri tej populaciji ni potrebna posebna previdnost. *Pediatrična populacija:* Zdravilo OZURDEX ni primerno za uporabo pri pediatrični populaciji za indikacije: diabetični makularni edem in makularni edem po okluziji veje retinalne vene (BRVO) ali okluziji centralne retinalne vene (CRVO). Varnost in učinkovitost zdravila OZURDEX pri pediatrični populaciji z uveitisom še nista bili dokazani. Način uporabe: Zdravilo OZURDEX je intravitrealni vsadek v aplikatorju za enkratno uporabo, samo za intravitrealno uporabo. En aplikator se lahko uporabi samo za zdravljenje enega očesa. Postopek intravitrealnega injiciranja je treba opraviti pri nadzorovanih aseptičnih pogojih, ki vključujejo uporabo sterilnih rokavic, sterilnega pregrinjala in sterilnega očesnega spekuluma (ali drugega ustreznega instrumenta). Bolnik si mora 3 dni pred vsakim injiciranjem in po njem v oko dajati širokospektralne antibiotične kapljice. Pred injiciranjem je treba razkužiti kožo okoli oči, veko in površino očesa (na primer z nanosom kapljic 5-odstotne raztopine povidonjodida na očesno veznico, kot je bilo to narejeno med kliničnimi preskušanji za dobritev zdravila OZURDEX) ter uporabiti zadostno lokalno anestezijo. Iz škatle vzemite mošnjiček iz folije in preglejte morebitne poškodbe na njem. Potem mošnjiček iz folije odprite na sterilnem polju in aplikator nežno položite na sterilni pladenj. Z aplikatorja previdno odstranite pokrovček. Aplikator je treba uporabiti takoj, ko odprete mošnjiček iz folije. Z eno roko primite aplikator in z njega naravnost povlecite varnostni zavihek. Zavihka ne obračajte ali upogibajte. Medtem ko poševni del igle držite stran od beločnice, jo potisnite približno 1 mm v beločnico, potem pa spremenite smer proti središču očesa v vitrealno votlino in potiskajte, dokler silikonski tulec ne pride v stik z očesno veznico. Počasi potiskajte sprožilni gumb, dokler ne zaslišite klika. Preden izvlečete aplikator iz očesa, se prepričajte, da je sprožilni gumb popolnoma pritisnjen in je poravnan v zaklenjenem položaju s površino aplikatorja. Iglo odstranite v isti smeri, kot ste jo uporabili za uvajanje v steklovino. Takoj po injiciranju zdravila OZURDEX uporabite indirektno oftalmoskopijo v kvadrantu injiciranja, da potrdite uspešno vstavljanje vsadka. V veliki večini primerov je vsadek viden. Kadar ne vidite vsadka, uporabite sterilno vatno blazinico in nežno pritisnite na mesto injiciranja, da vsadek postane viden. Po intravitrealnem injiciranju je treba pri bolnikih nadaljevati zdravljenje s širokospektralnim antibiotikom. **Kontraindikacije:** Preobčutljivost na zdravilno učinkovino ali katero koli pomožno snov; aktivna očesna ali obočesna okužba ali sum nanjo, vključno z večino virusnih bolezni roženice in očesne veznice, kot so aktivni epitelijski herpesni keratitis (dendritični keratitis), vakcinija, norice, mikobakterijske okužbe in glivične bolezni; napredovani glavkom, ki ga ni mogoče zadostno nadzorovati samo z zdravili; afakično oko z raztrgano posteriorno kapsulo leče; oko z umetno lečo v sprednjem prekatu (ACIOL), s pritrjeno umetno lečo na šarenico ali skozi beločnico in raztrgano posteriorno kapsulo leče. **Povzetek posebnih opozoril in previdnostnih ukrepov:** Intravitrealna injiciranja so lahko povezana z endoftalmitisom, intraokularnim vnetjem, zvišanim očesnim tlakom in odstopom mrežnice. Vedno je treba uporabljati ustrezne aseptične tehnike injiciranja. Po injiciranju je treba bolnike spremljati, da se lahko uvede zgodnje zdravljenje, če se pojavi okužba ali zvišan očesni tlak. Bolnikom je treba naročiti, naj takoj poročajo o kakršnih koli simptomih, ki kažejo na endoftalmitis, ali o katerih koli zgoraj omenjenih dogodkih. Pri bolnikih z raztrgano posteriorno kapsulo leče, na primer bolnikih s posteriorno lečo (na primer zaradi operacije katarakte), in/ali bolnikih z odprtino šarenice proti steklovini (npr. zaradi iridektomije) z vitrektomijo v anamnezi ali brez nje, obstaja tveganje, da se vsadek premakne v sprednji prekat. Premik vsadka v sprednji prekat lahko povzroči edem roženice. Trdovratna huda oblika edema roženice se lahko stopnjuje, tako da je treba roženico presaditi. Pri kontraindiciranih bolnikih se zdravilo OZURDEX ne sme uporabljati, pri ostalih pa ga je treba uporabljati previdno in samo po temeljiti oceni tveganj in koristi. Take bolnike je treba skrbno spremljati, da se omogoči zgodnja diagnoza in obvladovanje morebitnega premika pripomočka. Uporaba kortikosteroidov lahko povzroči nastanek katarakt (vključno s posteriornimi subkapsularnimi katarakatami), zvišan očesni tlak, glavkom, ki ga povzročajo steroidi, in sekundarne očesne okužbe. Pri bolnikih z anamnezo očesne virusne okužbe (npr. herpes simpleks) je treba kortikosteroide uporabljati previdno, pri bolnikih z aktivno okužbo očesa s herpesom simpleksom pa se sploh ne smejo uporabljati. Zdravila OZURDEX niso preučevali pri bolnikih z makularnim edemom, ki je posledica okluzije retinalne vene z obsežno retinalno ishemijo, zato se pri njih uporaba zdravila OZURDEX ne priporoča. Zdravilo OZURDEX je treba previdno uporabljati pri bolnikih, ki jemljejo antikoagulante ali antitrombotike. **Medsebojno delovanje z drugimi zdravili in druge oblike interakcij:** Sistemska absorpcija je minimalna, zato se ne pričakuje medsebojno delovanje z drugimi zdravili. **Plodnost, nosečnost in dojenje:** Nosečnost: Čeprav se pričakuje, da bo sistemska izpostavitev deksametazonu po lokalnem, intraokularnem zdravljenju z zdravilom OZURDEX zelo majhna, se ne priporoča med nosečnostjo, razen če morebitna korist upravičí morebitno tveganje za plod. Dojenje: Deksametazon se izloča v materino mleko. Zaradi poti uporabe in posledičnih sistemskih ravni se ne pričakujejo učinki na otroka, vendar pa se zdravilo OZURDEX med dojenjem ne priporoča, razen če je to nujno potrebno. Plodnost: Ni podatkov o učinkih na plodnost. **Vpliv na sposobnost vožnje in upravljanja s stroji:** Zdravilo OZURDEX lahko zmerno vpliva na sposobnost vožnje in upravljanja s stroji. Pri bolnikih se lahko po intravitrealnem injiciranju zdravila OZURDEX pojavi začasno poslabšanje vida. Dokler se to stanje ne popravi, bolniki ne smejo voziti in upravljati s stroji. **Neželeni učinki:** Zelo pogosti: zvišan očesni tlak, katarakta, krvavitev očesne veznice. Pogosti: glavobol, očesna hipertenzija, subkapsularna katarakta, vitrealna krvavitev, zmanjšana ostrina vida, okvara vida/motnje vida, odstop steklovine, plavajoče motnjave v steklovini, motnjave v steklovini, blefaritis, bolečine v očesu, fotopsija, edem očesne veznice, hiperemija veznice. Občasni: migrena, nekrotizirajoči retinitis, endoftalmitis, glavkom, odstop očesne mrežnice, raztrganina očesne mrežnice, hipotonija očesa, vnetje sprednjega prekata, celice/bleščava v sprednjem prekatu, nenormalni občutek v očesu, srbenje vek, hiperemija beločnice, premik pripomočka (vsadka) z ali brez edema roženice, zapleti pri vstavljanju pripomočka (napačna vstavitev).
Pred predpisovanjem in uporabo, prosimo, preberite celoten Povzetek glavnih značilnosti zdravila.
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Reference: 1. Nehme A, Edelman J. Dexamethasone inhibits high glucose-, TNF-alpha-, and IL-1 beta-induced secretion of inflammatory and angiogenic mediators from retinal microvascular pericytes. Invest Ophthalmol Vis Sci. 2008; 49 (5) 2030-38. **2.** Boyer DS et al. Three-Year, Randomized, Sham-Controlled Trial of Dexamethasone Intravitreal Implant in Patients with Diabetic Macular Oedema. Ophthalmology. 2014 doi: 10.1016/j.ophtho 20 14.04.024. **3.** Mitchell P et al. The RESTORE study: ranibizumab monotherapy or combined with laser versus laser monotherapy for diabetic macular oedema. Ophthalmology 2011; 118:615-25. **4.** Brown DM et al. Long-term Outcomes of Ranibizumab Therapy for Diabetic Macular Oedema: The 36-Month Results from Two Phase III Trials Opthalmol 2013;120 (18) 2013-22. **5.** INCITE market research, data on file 2014. **6.** Appiah A. An Emerging option to Treat DME Two case studies using micropulse laser therapy Available at http://www.iridex.com/Portals/O/dme/Appiah·532·MPLT·Retinal-physician-2013.pdf (Accessed July 16 2014)

SAMO ZA STROKOVNO JAVNOST. Datum priprave: april 2016. SI.16.OZURDEX.07

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ZBORNIK POVZETKOV
BOOK OF ABSTRACTS

KRAJ / VENUE
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STRABIZEM
STRABISMUS

Moderatorici / Moderators: DRAGICA KOSEC, MIRJANA BJELOŠ

MOŽGANSKA OKVARA VIDA
CEREBRAL VISUAL IMPAIRMENT

Dragica Kosec, Ingrid Rahne
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

NAMEN: Prikazati želimo možnosti in uspešnost rehabilitacije vida po ishemični okvari in po toksični možganski okvari.
METODE: Prikazana sta dva primera uspešne obnove vida: moškega z zastojem srca pri sindromu Brugada in po naključni zastrupitvi z metadonom.
REZULTATI: V obeh primerih se je po pleoptičnih in ortoptičnih vajah vid bistveno izboljšal. V prvem primeru se je izboljšalo vidno polje in tudi vidna ostrina, v drugem pa vidna ostrina in binokularna funkcija vida.
ZAKLJUČEK: Pleoptične in ortoptične vaje v lahko občutno izboljšajo vidno funkcijo pri pacientih s kortikalno okvaro vida.

PURPOSE: We wish to show possibilities and effectiveness of vision rehabilitation after ischaemic failure and toxic brain damage.
METHODS: Two cases of successful vision improvement are presented: after cardiac arrest and successful reanimation of a male with Brugada syndrome and in a case of accidental poisoning by methadone.
RESULTS: In both cases the pleoptic and orthoptic vision exercises significantly improved vision. In the first case, the field of vision and visual acuity, and – in the second case – visual acuity and binocular vision function were improved.
CONCLUSION: Pleoptic and orthoptic exercises can significantly improve visual function in patients with cortical visual impairment.

ZAGREBŠKI PROTOKOL PRESEJANJA PREDŠOLSKIH OTROK ZA SLABOVIDNOST – NOVI PROTOKOL PRESEJANJA ZA SLABOVIDNOST, VPELJAN NA HRVAŠKEM

ZAGREB AMBLYOPIA PRESCHOOL SCREENING – NEW AMBLYOPIA SCREENING PROTOCOL IMPLEMENTED IN CROATIA

Mladen Bušić[1], Mirjana Bjeloš[1], Damir Bosnar[1], Biljana Kuzmanović Elabjer[1], Daliborka Miletić[1], Senad Ramić[1], Mladen Petrovečki[2]

[1]*University Eye Clinic Sveti Duh Zagreb and Faculty of Medicine University of Osijek, Croatia*

[2]*Dubrava University Hospital Zagreb, Zagreb, Croatia*

PURPOSE: To present new amblyopia screening protocol implemented in Croatia for preschool children.

METHODS: Zagreb Amblyopia Preschool Screening (ZAPS) study protocol tested near- and distance visual acuity (VA) using Lea Symbols in lines test. Between September 2011 and June 2014 a total of 15,648 children aged 48–54 months attending kindergartens in the City of Zagreb were screened for amblyopia. The pass cut-off level was defined to ≤ 0.1 logMAR. If VA in either eye was > 0.1 logMAR, the child was re-tested; if failed at re-test, the child was referred to comprehensive eye examination at the Eye Clinic. The study aimed to determine the threshold of age-specific and chart-specific visual acuity normative, testability and diagnostic accuracy of the ZAPS protocol and prevalence of amblyopia in the City of Zagreb County.

RESULTS: 78.04% passed the screening with the cut-off level ≤ 0.1 logMAR in both eyes tested at near and distance, setting the age-specific normative threshold for determining abnormal monocular VA in preschool children aged 48–54 months using Lea Symbols in lines chart to > 0.1 logMAR. The prevalence of amblyopia was 8.08%. Testability rate using ZAPS study protocol was 99.19%, with sensitivity and specificity rates of 100.00% and 96.68%, respectively.

CONCLUSIONS: The ZAPS study protocol satisfies the prerequisites of high testability, high sensitivity, and high specificity which makes it an efficient screening test. The pass level defined at ≤ 0.1 logMAR for 4-year-old children, using Lea Symbols in lines missed no amblyopia cases, advocating that both near and distance VA testing using in lines chart should be performed when screening for amblyopia. The ZAPS study changed the national recommendations for health surveillance in Croatia in favour of VA assessment of 4-year-old children. From June 1st 2015, vision screening of all 4-year-old children performed in ophthalmologists' practices is introduced as a national health policy.

"ZDRAVNICA, ZAKAJ MOJ OTROK SLABŠE VIDI?"
"DOCTOR, WHY DOES MY CHILD NOT SEE PROPERLY?"

Helena Skačej Friedrich[1], Dragica Kosec[2]
[1]*Zdravstveni dom dr. Adolfa Drolca Maribor, Maribor, Slovenija*
[2]*Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija*

NAMEN: Prikazati raznolikost vzrokov za slabši vid pri mladih.
METODE: Predstavitev 9 kliničnih primerov z različnih oftalmoloških področij.
REZULTATI: Večina izmed 3700 bolnikov starosti med 6 in 26 let, ki letno obišče Očesno šolsko ambulanto Zdravstvenega doma dr. Adolfa Drolca Maribor, toži zaradi slabšega vida. Vzroki za to so v prikazanih primerih bili naslednji: nekorigirana kratkovidnost, ambliopija ob anizometropiji, keratokonus, keratitis, katarakta, distrofija mrežnice, uvealni kolobom, optični nevritis in psihogeni dejavnik.
ZAKLJUČEK: Slabši vid pri mladi in večinoma zdravi populaciji je lahko posledica različnih stanj. Ta so včasih hitro ter preprosto rešljiva, med njimi pa so tudi nekatera resnejša in diagnostično zahtevnejša.

PURPOSE: To show the diversity of conditions leading to the reduced vision in youngsters.
METHODS: Nine case reports from different fields of ophthalmology are presented.
RESULTS: The majority of 3700 patients aged 6 to 26 years, who visit the outpatients department for school children and students at the Public Health Service Maribor every year, complain about the reduced vision. In the cases studied the reasons for vision reduction were the following: uncorrected myopia, anisometropic amblyopia, keratoconus, keratitis, cataract, retinal dystrophy, uveal coloboma, optic neuritis, and psychogenic factor.
CONCLUSIONS: Reduced vision in a young, mostly healthy population can result from various conditions. Sometimes, these may be quickly and easily solved. However, some of them are quite serious and nontrivial to diagnose.

REHABILITACIJA VIDA PRI POLITRAVMATIZIRANEM BOLNIKU – PRIKAZ PRIMERA

VISION RESTORATION IN A POLYTRAUMATIZED PATIENT – A CASE REPORT

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NAMEN: Ocena vida pri politravmatiziranem bolniku je kompleksna, ker so večinoma nezavestni, hemodinamsko nestabilni in potrebujejo multidisciplinarni pristop. Življenjsko ogrožajoča stanja imajo prednost pred oceno vida. Primer kaže pomembnost intenzivne oftalmološke obravnave in zdravljenja rekonstrukcije vida.
METODE: Prikaz primera 14-letnega fanta s politravmo po obsežni poškodbi, ko ga je kot smučarja povozil teptalec snega. Številni zlomi kosti, difuzna poškodba možganov, mehkega tkiva, epiduralni hematom in možganski edem so otežili oceno vidne funkcije v prvih dveh mesecih po poškodbi. Osem mesecev kasneje je bil prvič pregledan na našem oddelku; vidna ostrina desno je bila gib roke 2 m, levo dojem svetlobe, obojestransko omejena gibljivost navzgor, blaga ptoza leve zgornje veke, odklanjanje levega očesa (Hirschberg -10°), na očesnem ozadju sta bili vidni bledi papili, bolj levo in pozitiven RAPD. Elektrofiziološke preiskave so 11 mesecev po poškodbi pokazale abnormen izvid, z ohranjenostjo receptorskih sistemov mrežnice, na pa tudi ganglijskih celic. Redni kontrolni pregledi, elektrofiziološko testiranje in intenzivne pleoptične vaje so bile priporočene.
REZULTATI: V naslednjih letih smo predpisali očala zaradi miopne refrakcije. Po pleoptičnih vajah se je vidna ostrina desno popravila na 0,6 s korekcijo, levo zaradi atrofije optičnega živca ni bilo sprememb. Pleoptične vaje smo ponavljali vsakih 6 mesecev. Pet let po nesreči se je vidna ostrina desno popravila na 1,0 s korekcijo, levo je ostala nespremenjena. Vidno polje se je desno praktično v celoti popravilo, levo je ostal otoček vida periferno nazalno. Elektrofiziološko testiranje po pet letih je pokazalo rezultate VEP in ERG znotraj normalnih vrednosti na desnem očesu, na levem so bili v soglasju z optično atrofijo.
ZAKLJUČEK: Predstavljeni primer kaže, da dolgotrajno oftalmološko in pleoptično zdravljenje pomaga vzpostaviti vid pri bolniku po obsežni poškodbi glave kljub začetnemu slabemu vidu in slabim rezultatom testiranj. Pleoptične vaje izboljšajo vidno funkcijo, vidno polje in subjektivno dojemanje sveta. Pomembno je spodbujati bolnika in izboljšati njegovo koncentracijo vidnih zaznav.

PURPOSE: Clinical assessment of vision in polytraumatized patients is complicated, since they are mostly unconscious, hemodynamically unstable, requiring a multispecialty team approach. This case report shows the relevance of an intensive ophthalmological assessment and treatment after primary rehabilitation to restore loss of vision.
METHODS: A case report of a 14-year-old boy with polytrauma after being run over by snow-cat as a skier. Multiple bone fractures, diffuse brain and soft tissue injuries, epidural haematoma and brain edema made the diagnosis of visual acuity (VA) very complicated in the first two months after the injury. Eight months after first visit in our department, VA of his right eye (RE) was hand movement at 2 m, left eye (LE) light perception, motility impairment in up-gaze, mild ptosis on his left eye, squinting with his left eye (Hirschberg -10°); fundoscopy showed pale discs, more on the left side, and positive RAPD. Results of electrophysiologic tests were abnormal. Regular check-ups, electrophysiologic testing, and intensive pleoptic treatment were recommended.
RESULTS: In years after the accident, myopic refraction was measured and glasses prescribed. After pleoptic treatments, VA improved to 0.6 cc in RE, no changes on LE due to optic atrophy. Pleoptic treatment was repeated every 6 months. Five years after the accident, VA in RE improved to 1.0 cc, while in the LE, it stayed unchanged. Visual field in his RE improved. Electrophysiology testing after 5 years showed VEP and ERG results within normal limits in his RE, while in the LE results were in accordance with the optic atrophy.
CONCLUSIONS: The case presented demonstrates that despite low initial VA and poor initial test results, long term intensive ophthalmological and pleoptic treatment can help restore vision in patients suffering severe brain trauma. Vision restoration with pleoptic treatment can improve visual acuity, enlarge visual field and subjective perception of place around the patient. It is important to stimulate patients and improve their concentration in visual perception.

BOLEZENSKE SPREMEMBE ZUNAJOČESNIH MIŠIC
EXTRAOCULAR MUSCLES – CHANGES IN DISEASE

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NAMEN: Prikazati posebnosti zgradbe ekstraokularnih mišic (EOM), ki so zaradi izjemnih funkcijskih zahtev med najhitrejšimi in najmanj utrudljivimi skeletnimi mišicami. Odziv EOM na bolezen in manipulacijo je zato specifičen, prav tako njihova regeneracija.
METODE: Predstavljeni so tipi mišičnih vlaken EOM, njihov histokemični profil z miozinskimi težkimi verigami (MyHC) in inervacija. Eksperimentalna denervacija EOM je bila povzročena z botulinom A, degeneracija pa z 0,5-odstotnim anestetikom Marcain. Na podganjih EOM je bila v mesečnem, polletnem, letnem, dveletnem sledenju analizirana njihova regeneracija. Prikazana so dosedanja spoznanja vloge in sprememb EOM pri strabizmu, tiroidni oftalmopatiji, nekaterih mišičnih distrofijah in nevroloških boleznih.
REZULTATI: Botulin okvari vlakna EOM in ima dolgotrajen učinek s pomikom MyHC k počasnejšim izooblikam, po injiciranju anestetika pa po popolni degeneraciji EOM ta postopno regenerirajo s pojavom hitrejših izooblik MyHC. Pri strabizmu imajo pomembno vlogo enojno inervirana mišična vlakna v orbitalnem mišičnem sloju (OL), ki imajo vlogo pri poravnavi vidne osi. Primerjava avtopsijskih EOM brez strabizma in biopsijskih EOM med operacijo zaradi strabizma ni pokazala sprememb v histokemičnem profilu EOM, razlike mest insercij pa so bile očitne. Pri mišičnih distrofijah so EOM relativno ohranjene, sledi pa specifičen odziv mišičnih vlaken, kot je to poznano pri progresivni eksterni oftalmoplegiji, miasteniji gravis, amiotrofični lateralni sklerozi, distiroidni oftalmopatiji.
ZAKLJUČEK: Zgradba EOM z vplivom na funkcijo in regeneracijo še vedno ostaja nepojasnjena.

PURPOSE: To demonstrate unique structure of extraocular muscles (EOM) which are, due to their extraordinary functional demands, the fastest and the most fatigue resistant skeletal muscles. Their response to disease and manipulation is very specific, as well as their regeneration.
METHODS: EOM fibre types with histochemical profile, myosin heavy chain isoforms (MyHC), and innervation are presented. Experimental chemical denervation was performed with botulinum A, while 0.5% Marcaine has been used for EOM degeneration. Rat EOM regeneration has been followed-up for one and six months, a year and two years. Today's knowledge of the EOM connected with strabismus, dysthyroid ophthalmopathy, muscle dystrophies, and some neurologic diseases is also presented.
RESULTS: Botulinum toxin affects EOM fibres. It has a long-term effect and causes a shift toward slower MyHC isoforms, while Marcaine caused EOM degeneration follows regeneration with predominantly fast muscle fibres. In strabismus, singly innervated fibres in the orbital muscle layer (OL) seem to be the most important in ocular alignment. The anatomy of the EOM and associated connective tissue may be connected with strabismus; compared autopsy normal EOM and EOM in strabismus demonstrated some differences in insertion distances, but not the histochemical profile of their fibre types. EOM are relatively spared in muscle dystrophies. However, there is a distinctive muscle fibre response, as known in progressive external ophthalmoplegia, myasthenia gravis, amyotrophic lateral sclerosis, and disthyroid ophthalmopathy.
CONCLUSIONS: Questions concerning EOM arrangement, its functional consequences, and regeneration still remain unanswered.

KONVERGENTNO ŠKILJENJE ZARADI HIPOPLAZIJE VIDNEGA ŽIVCA IN DE MORSIEJEVEGA SINDROMA PRI MAJHNI DEKLICI – PRIKAZ PRIMERA

CONVERGENT SQUINTING DUE TO OPTIC NERVE HYPOPLASIA AND DE MORSIER SYNDROME IN A YOUNG GIRL – A CASE REPORT

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NAMEN: Prikazati primer deklice, ki zaostaja v rasti, z levostransko slabovidnostjo in konvergentnim škiljenjem zaradi hipoplazije vidnega živca in De Morsiejevega sindroma.
METODE: Enoletna deklica je bila poslana k nam zaradi konvergentnega škiljenja, predvsem levega očesa. Vidna ostrina je bila 6/130 obojestransko. Izmerili smo refrakcijo v atropinu in predpisali očala (+ 2,0 Dsph). Optični mediji so bili čisti. Na očesnem ozadju desno ni bilo posebnosti, levo pa sta bila vidna manjši hipoplastičen vidni živec in normalna makula. Svetovali smo pokrivanje desnega očesa eno uro dnevno in vaje gibljivosti.
REZULTATI: V starosti dveh in pol let je bila vidna ostrina DO 0,5 cc, LO 0,05 cc. Še vedno je bilo zaznavno konvergentno škiljenje levega očesa. Deklica je zaostajala v rasti, zaradi česar je že bila obravnavana pri pediatrih gastroenterologih. OCT je pokazala vidno stanjšanje živčnih vlaken na papili levo. Elektrofiziološke preiskave so pokazale normalne odzive desnega očesa, nenormalen slikovni ERG (PERG) in normalne vidne evocirane potenciale (VEP) z levega očesa. Zaradi nizke rasti smo jo poslali k nevrologom in endokrinologom za izključitev septooptične displazije (De Morsiejevega sindroma). Nevrološki pregled je pokazal blago hipotonijo, MRI glave je pokazal atrofijo levega optičnega živca in kiazme. Endokrinologi so predlagali določitev vrednosti rastnega hormona in drugih hormonov ter genetsko testiranje za septooptično displazijo. Zaradi premajhnih vrednosti rastnega hormona so pri deklici začeli tega dodajati.
ZAKLJUČEK: Septo-optična displazija (De Morsiejev sindrom) sestoji iz triade znakov: prenizka rast, nistagmus, hipoplazija vidnega živca. Zanjo je značilen spektrum nepravilnosti v razvoju; 60 % bolnikov ima hipopituitarizem in premajhne vrednosti rastnega hormona. Oftalmologi smo prvi, ki lahko bolezen zgodaj odkrijemo in pošljemo bolnika naprej v obravnavo nevrologov in endokrinologov. Pomanjkanje hormonov lahko nadomestimo, z nadomeščanjem rastnega hormona lahko pri bolnikih dosežemo normalno rast.

PURPOSE: To report a case of a young girl of short stature, with left eye amblyopia and convergent squinting due to optic nerve hypoplasia and De Morsier syndrome.
METHODS: One year old girl was first referred to us because of convergent squinting, mostly of her left eye. Visual acuity was 6/130 bilaterally. Refraction was measured in atropine and glasses were prescribed (+ 2.0 Dsph). Optic media were clear. Fundoscopy showed normal optic nerve and macula in her right eye and small and grey optic nerve and normal macula in her left eye. One hour occlusion of the right eye and motility exercises were prescribed.
RESULTS: At the age of 2.5 years, visual acuity was: RE 0.5 cc, LE 0.05 cc; squinting of the left eye was still present. OCT showed atrophy of the retinal nerve fibre layers of the left optic nerve. Electrophysiologic tests were performed. The responses were normal in her right eye, while the results of the pattern electroretinography (ERG) and visual evoked potentials (VEP) in her left eye were abnormal. Due to short statue for her age she was sent to neurologists and endocrinologists to look for De Morsier syndrome (septo-optic dysplasia). Neurology exam showed mild hypotonia, MRI of the head showed atrophy of the left optic nerve and chiasm. Endocrinologists suggested growth hormone and other hormones measurements and genetic testing for septo-optic dysplasia. Growth hormone replacement was started due to low growth hormone levels.
CONCLUSION: Septo-optic dysplasia (De Morsier syndrome) consists of a triad: short statue, nystagmus and optic nerve hypoplasia. It is characterised by a spectrum of midline developmental anomalies, 60% of patients have hypopituitarism with low growth hormone levels. Ophthalmologists are the first to recognise the condition early. Hormone deficiency can be corrected and normal growth resumed.

TERAPIJA Z BOTULINOM ZA ZDRAVLJENJE DILOPIJE ZARADI PARALITIČNEGA STRABIZMA

BOTULINUM TOXIN THERAPY AS A TREATMENT OF DIPLOPIA CAUSED BY PARALYTIC STRABISMUS

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NAMEN: Namen je predstaviti zdravljenje z botulinom kot adjuvantno terapijo pri paralitičnem strabizmu, v našem primeru bolnika z meningitisom nejasne etiologije in parezo mišce abducens desnega očesa.
METODE: Terapija z botulinom pri strabizmu je uveljavljena že dalj časa. Večina avtorjev zagovarja aplikacijo s pomočjo elektromiogramske igle (EMG), saj je s tem aplikacija natančnejša, manjša je verjetnost stranskih učinkov toksina kot tudi iatrogenih poškodb. Učinek na škilni kot je bistveno manjši od operativnega zdravljenja strabizma, a kljub temu lahko povzroči dvojno sliko.
REZULTATI: Za bolečinami v vratu, nato pa za dvojno sliko je zbolel 31-letni specializant kirurgije. Bil je obravnavan na Nevrološki kliniki v Ljubljani, nato predstavljen na Očesni kliniki v Ljubljani. Po retropoziciji mišice desni notranji rektus je imel dvojno sliko v primarni poziciji samo pri gledanju v daljavo, in to bolj izraženo pri pogledu v desno zaradi omejene abdukcije. Nato je bil predstavljen še Kabinetu za ortoptiko in pleoptiko očesnega oddelka, Univerzitetni klinični center Maribor, kjer smo opravili aplikacijo botulina s pomočjo EMG-igle. Po posegu je bil zadovoljen z enojno sliko v primarni poziciji, ki je ostala tudi pri manjših abdukcijah levo in desno. Po več kot enem letu je stanje še vedno stabilno, pacient je zadovoljen s stanjem, ki je subjektivno praktično enako.
ZAKLJUČEK: Zdravljenje z botulinom je uporabno pri dvojnih slikah z majhnimi odkloni. V izogib poškodbam, za zvečanje končnega učinka in zmanjšanje stranskih učinkov je smiselno uporabljati EMG-igle, kar zveča varnost posega. Pri večini pacientov z majhnim odklonom pri paralitičnem strabizmu, kjer je v ospredju centralna etiologija, je zanimivo, da je učinek daljši, v nekaterih primerih je zadosti ena aplikacija.

PURPOSE: To present the botulinum toxin application as an adjuvant therapy in paralytic strabismus, in our case after meningitis of unclear aetiology with the abducens muscle paresis of the right eye.
METHODS: In strabismus, botulinum toxin application has since long been used as a therapy. The majority of authors advise the application led by EMG needle, what increases the precision of injection and also decreases the possibility of side effects and iatrogenic injury. The effect on the squint angle is less than of the surgical treatment, but can still cause diplopia.
RESULTS: A 31-year resident of the general surgery had neck pain and, later, diplopia. After assessment in the Neurology Clinic in Ljubljana, he was presented in the Department for strabismus of the Ljubljana Eye Clinic. After the retroposition of the right medial rectus, diplopia was still present in primary position at the gaze in distance, and at looking in the right direction. To minimize diplopia in primary position, the possibility of EMG needle-guided botulinum toxin therapy performed in the Eye Department in Maribor was presented. After the procedure, the patient was satisfied with the single vision in primary position and at minimal gaze to left and right. After more than 1 year, the condition of the patient is subjectively stable.
CONCLUSION: Botulinum therapy of strabismus is a useful treatment of in cases of diplopia with small angle deviation. To avoid injuries, increase the effect and safety of the procedure, and decrease side effects, it is advisable to use EMG needle. Interestingly, in our patients with paralytic strabismus with aetiology of impairment of the central nervous system, the botulinum therapy assured stable condition already after a single application.

KLINIČNE ZNAČILNOSTI, ETIOLOGIJA IN REZULTATI OPERACIJ PRI PAREZI ZARADI OKVARE TROHLEARNEGA ŽIVCA

CLINICAL FEATURES, AETIOLOGY AND OUTCOMES OF SURGICAL TREATMENT FOR TROCHLEAR NERVE PALSY

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NAMEN: Ocena kliničnih značilnosti, etiologije in rezultatov kirurške korekcije pareze trohlearnega živca.
METODE: Retrospektivni pregled primerov 31 bolnikov, pri katerih je bila narejena kirurška korekcija enostranske pareze trohlearnega živca v obdobju med letoma 2010 in 2015 na Očesni klinikl v Ljubljani. Zdravljeni so bili s kirurškim posegom na eni mišici, na spodnjem oblikvusu (transpozicija ali miektomija spodnjega oblikvusa). Za vsakega pacienta smo analizirali parametre: starost, etiologija, obstoj vertikalnega in horizontalnega škiljenja, dvojnega vida, nagiba glave/tortikolisa, binokularnega vida in subjektivno stanje.
REZULTATI: Skupaj smo analizirali 31 bolnikov, 7 otrok, 24 odraslih. Povprečna starost otrok ob operaciji je bila 9,5 let (6–16 let), odraslih 34,3 let (21–70 let). Pareza je bila prirojena (40 %), posledica poškodbe (30 %) ali pridobljena, a ne poškodbena (30 %). Najpogostejša težava je bil vertikalni odklon očesa (51 %), nagib glave/tortikolis (28 %), dvojni vid (21 %). Povprečni vertikalni odklon pred operacijo je bil 8,2 prizem dioptrije PD (0–20 PD) in se je zmanjšal na 4,7 PD pooperativno. Horizontalni odklon (eksotropija in ezotropija) je bil povprečno 4.6 PD pred operacijo in se je zmanjšal na 3,9 PD po operaciji. Binokularni vid je bil dokazan v 35 % primerov pred- in 52 % pooperativno. Subjektivno stanje je bilo zadovoljivo v 64,5 % (boljši položaj glave, enojni vid, izboljšan horizontalni in vertikalni odklon).
ZAKLJUČEK: Glavni razlogi pri parezi trohlearis, ki potrebujejo kirurški poseg, so vertikalni odklon, dvojni vid in nagib glave/tortikolis; najpogostejša etiologija je bila prirojeno stanje. Vertikalni odklon je mogoče uspešno zdraviti z enim kirurškim posegom na eni mišici. Večina bolnikov je bila zadovoljna z izidom operacije, čeprav tega objektivno vedno ni mogoče izmeriti.

PURPOSE: To evaluate the clinical features, aetiology and outcomes of surgical correction of trochlear nerve palsy.
METHODS: Retrospective review of 31 patients who underwent surgical correction of unilateral trochlear nerve palsy in the period between 2010 and 2015 in the Ljubljana Eye Clinic, treated with single muscle surgery; an inferior oblique weakening procedure (transposition of the inferior oblique muscle or inferior oblique myectomy). For each patient we analyzed the following parameters: age, aetiology, presence of vertical and horizontal deviation, diplopia, torticollis or head tilt, binocular vision, and subjective status.
RESULTS: Included were 31 patients, 7 children, 24 adults. The mean age at surgery for children was 9.5 years (range 6–16 years), for adults 34.3 years (range 21–70 years). Aetiologies of the palsy were congenital (40%), trauma (30%) and acquired/non-traumatic (30%). The most common complaint was vertical ocular deviation (51%), head tilt/torticollis (28%), diplopia (21%). The mean angle of preoperative vertical deviation in primary gaze was 8.2 prism diopters PD (range 0–20 PD), and was decreased to 4.7 PD postoperatively. Mean horizontal deviation (exotropia, esotropia) was 4.6 PD before the operation and decreased to 3.9 PD of horizontal deviation postoperatively. Binocular vision was detected in 35% pre- and 52% post-operatively. Subjective state was satisfactory in 64.5% (better head position, single vision, improved horizontal or vertical deviation).
CONCLUSIONS: The main reasons of trochlear palsy requiring surgical intervention were vertical ocular deviation, diplopia and head tilt or torticollis; the most common aetiology was congenital. Vertical deviation of the trochlear palsy can be successfully treated with a single surgical procedure. The majority of patients are satisfied after surgery, although this cannot be objectively measured.

IZOLIRANA OBLIKA MIOZITISA MIŠICE ZGORNJI OBLIKVUS – KLINIČNI PRIMER
ISOLATED SUPERIOR OBLIQUE MYOSITIS – A CASE REPORT

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NAMEN: Predstaviti klinični primer 47-letnega pacienta z nenadno nastalo oteklino desne zgornje veke in dvojnim vidom.
METODE: Klinični primer.
REZULTATI: Opisan je primer 47-letnega pacienta z nenadno nastalo oteklino desne zgornje veke in dvojnim vidom. Prej je bil povsem zdrav. S kliničnim in ultrazvočnim pregledom je bil postavljen sum na orbitalno lezijo. Z magnetnoresonančnim slikanjem in biopsijo orbite smo potrdili izolirano obliko idiopatskega miozitisa ***m. obliqus superior***. Pacient je bil zdravljen s kortikosteroidi, po katerih je klinična slika povsem izzvenela. Na kontrolnih pregledih dve leti po izbruhu klinične slike pri bolniku nismo zaznali poslabšanja.
ZAKLJUČEK: Idiopatska orbitalna vnetna bolezen je spekter ne-neoplastičnih, ne-infektivnih in ne-tumorskih bolezni, ki zajemajo eno ali več orbitalnih struktur. Prizadete so lahko zunajočesne mišice, solzna žleza, skleralno in episkleralno tkivo ter orbitalno maščevje. Orbitalni miozitis se najpogosteje izrazi z omejeno bulbomotoriko, diplopio, proptozo, ptozo, periokularnim edemom in konjunktivalno draženim zrklom. Za izključitev drugih lezij v orbiti so potrebne slikovna diagnostika, laboratorijske preiskave in – pogosto – biopsija. Izolirana oblika vnetja išice ***obliqus superior*** je izjemno redka. Prikazan je eden od 11 dokumentiranih primerov med letoma 1988 in 2015.

PURPOSE: To present a case of a 47-year old man with a sudden onset of the right upper eyelid swelling and diplopia.
METHODS: A case report.
RESULTS: This case report presents a 47-year old man with a sudden onset of the right upper eyelid swelling and diplopia. Until then he had had no health problems. After initial ophthalmologic workup and ultrasonography, an orbital mass was suspected. MRI and biopsy of the mass confirmed an isolated superior oblique muscle myositis. We treated him with systemic steroids. A good response and fast regression was observed. In two years of the follow-up, no recurrence was noted.
CONCLUSIONS: Idiopathic orbital inflammatory disease, previously referred to as orbital pseudotumour, is a non-neoplastic, non-infective disease. The inflammatory process can involve one or more orbital soft tissues; extraocular muscles, tear gland, scleral or episcleral tissue or orbital fat. Orbital myositis tipically presents with a sudden onset of restricted ocular motility, diplopia, congestive proptosis, eyelid ptosis, periocular swelling, and conjunctival hyperemia. A thorough workup is essential for ruling out other entities. Isolated superior oblique muscle myositis is extremely rare. This is one of the eleven documented cases between 1988 and 2015.

DUANOV SINDROM TIP III – PREDSTAVITEV PRIMERA PACIENTKE PO OPERATIVNI KOREKCIJI
DUANE SYNDROME TYPE III – CASE REPORT OF A PATIENT AFTER OPERATIVE CORRECTION

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NAMEN: Prikazati primer pacientke z nagibom glave in diplopijo v sklopu Duanovega sindroma tipa III, ki je bila zdravljena z operativnim posegom.
METODE: Pacientka je bila zdravljena operativno. Prikazujemo njeno stanje pred posegom in po njem.
REZULTATI: Po posegu pacientka laže gleda naravnost, v primarni poziciji pogleda nima več dvojnih slik. Ostaja še dvojni vid pri pogledu vstran.
ZAKLJUČEK: Pri pacientih z restriktivnim strabizmom po tipu Duane III lahko tortikolis s pravilno operativno korekcijo popravimo in s tem izboljšamo kvaliteto pogleda v primarnem položaju ter dolgoročno zmanjšamo tveganje za okvaro vratne hrbtenice zaradi nagiba glave.

PURPOSE: To present the case of a patient with Duane III syndrome who presented with head tilt and diplopia and was successfully treated with an operative procedure.
METHODS: Our patient underwent an operative correction. We present her case before and after the procedure.
RESULTS: After the surgery the patient has no head tilt and no diplopia in primary position of the eyes, while double vision persists when looking aside.
CONCLUSIONS: In a patient with torticollis due to restrictive strabismus, a proper operative procedure can improve quality of gaze in primary position and therefore reduce the risk of long-term damage to cervical spine because of the head tilt.

ZDRAVLJENJE DIPLOPIJE V PRIMARNI POZICIJI PRI ŠČITNIČNI ORBOTOPATIJI

DIPLOPIA TREATMENT IN PRIMARY POSITION OF GAZE IN THYROID ORBITOPATHY

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NAMEN: Namen prispevka je predstaviti rezultate zdravljenja diplopije pri bolnikih s ščitnično orbitopatijo (ŠO) iz ortoptičnega in strabološkega vidika na Oddelku za ortoptiko in strabologijo Očesne klinike Ljubljana.
METODE: Retrospektivna analiza bolnikov s ŠO, ki so jih zaradi težav z diplopijo začeli obravnavati na Oddelku za ortoptiko in strabologijo Očesne klinike Ljubljana v letih 2001–2016. Podatki so bili razdeljeni v podskupine glede na način zdravljenja bolnikov na kirurško, nekirurško ter kombinirano zdravljene. Statistična analiza je vključevala klinično oceno motnje v gibljivosti zrkel in škilnega kota (ob prvem pregledu in ob zadnjem opravljenem ambulantnem kontrolnem pregledu), analizo načinov zdravljenja in bolnikovo subjektivno oceno zmanjšanja diplopije po dosedanjem zdravljenju.
REZULTATI: Raziskava vključuje 33 bolnikov z diplopijo zaradi ŠO (29 žensk in 4 moške), trenutno starih od 40 do 78 let. Pred začetkom zdravljenja je imelo 14 bolnikov enostransko, 6 pa obojestransko zavrtost elevacije zrkel, 4 binokularno omejeno abdukcijo, 2 kombinacijo binokularne zavrtosti abdukcije in elevacije, 3 enostransko omejenost depresije zrkla in 1 zavrtost elevacije na enem in depresije na drugem očesu; 3 bolniki niso imeli klinično omejene bulbomotorike. Od 33 bolnikov jih je bilo 17 zdravljenih z operacijo, pri 9 bolnikih je za preprečevanje diplopije zadostovala zgolj prizmatska korekcija, preostalih 7 bolnikov je imelo druge načine zdravljenja ali so še predvideni za operativni poseg. Enojna slika v primarni poziciji je bila dosežena pri 78 % bolnikov s prizmatsko korekcijo ter pri 76,5 % kirurško zdravljenih bolnikov.
ZAKLJUČEK: Zdravljenje diplopije, ki je posledica ščitnične orbitopatije, je kompleksen in dolgotrajen proces, ki zahteva kombiniranje različnih načinov zdravljenja, izkušenost kirurga in individualno prilagajanje posameznemu bolniku.

PURPOSE: The purpose of this paper is to present the results of diplopia treatment in patients with thyroid orbitopathy (TO) from orthoptic and strabology perspective at the Department of orthoptics and strabology of the Eye Clinic, University Medical Centre Ljubljana.
METHODS: A retrospective analysis of patients with TO who began the treatment of diplopia in the Department of orthoptics and strabology of the Eye Clinic Ljubljana in the years between 2001 and 2016 was performed. The data were divided into subgroups according to the type of treatment: surgical, non-surgical and combined treatment. Statistical analysis included clinical assessment of the eyeball motility disturbances and the squint angle, the overview of methods of treatment and the patient's subjective estimation of diplopia improvement after the treatment.
RESULTS: The study includes 33 patients with diplopia due to TO (including 29 women and 4 men). Before the start of treatment 14 patients were afflicted with unilaterally suppressed elevation and 6 with binocularly suppressed elevation. Four patients had binocularly limited abduction, 2 had combined binocular abduction and elevation suppression, 3 patients had monocular suppression of the eyeball depression and, in 1 patient, elevation was suppressed in one eye while depression was suppressed in the other eye. Three patients had undisturbed ocular movements; 17 out of 33 patients were treated surgically, in 9 patients prismatic correction sufficed to prevent diplopia, and the remaining 7 patients had different type of treatment or are scheduled for future surgery; 78% of the patients treated with prism correction and 76.5% of surgically treated patients achieved binocular single vision in the primary position of gaze at the time of the last inspection.
CONCLUSION: Treatment of diplopia caused by TO is a complex and time-consuming process that mostly requires combination of different treatments, an experienced surgeon and personalized therapy for each patient.

BINOKULARNO VIDNO POLJE ENOJNEGA VIDA PRI BOLNIKIH S ŠČITNIČNO ORBITOPATIJO
BINOCULAR VISUAL FIELD OF SINGLE VISION IN PATIENTS WITH THYROID ORBITOPATHY

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NAMEN: Ščitnična orbitopatija (ŠO) je glavna in najpogostejša neščitnična manifestacija avtoimunske bolezni ščitnice. Pri ŠO so lahko zunanje očesne mišice neenakomerno prizadete, kar vodi v omejeno gibljivost oči in pojav binokularnega dvojnega vida. Naš namen je bil prikazati preiskavo binokularnega vidnega polja enojnega vida in njen pomen pri spremljanju učinkov zdravljenja bolnikov s ŠO.
METODE: Binokularno vidno polje enojnega vida smo določali z Goldmannovim perimetrom. Primerjali smo velikost (ploščino) binokularnega vidnega polja enojnega vida bolnikov s ŠO pred nekirurškim zdravljenjem dvojnega vida in po njem.
REZULTATI: Normalna velikost binokularnega vidnega polja enojnega vida je navzgor 50 stopinj, navzdol 60 stopinj in v obeh lateralnih smereh 60 stopinj. Pri bolnikih s ŠO se je binokularno vidno polje enojnega vida zmanjšalo, opazen pa je bil tudi pomik središča vidnega polja. Spremembe so bile odvisne od stopnje prizadetostih posameznih zunajočesnih mišic. Po intenzivnem zdravljenju bolnikov z aktivno ŠO, ki so imeli dvojni vid, z intravenskimi kortikosteroidi ali v kombinaciji z retrobulbarnim obsevanjem, se je binokularno vidno polje enojnega vida zvečalo. Učinek zdravljenja na binokularni dvojni vid smo tudi kvantificirali s primerjavo velikosti oz. ploščine vidnega polja pred zdravljenjem in po njem.
ZAKLJUČEK: Preiskava binokularnega vidnega polja enojnega vida je preprosta metoda za spremljanje učinka zdravljenja dvojnega vida pri bolnikih z aktivno ščitnično orbitopatijo. Učinek lahko ovrednotimo tudi kvantitativno.

PURPOSE: Thyroid-associated orbitopathy (TAO) is the main and most common extrathyroidal manifestation of autoimmune thyroid diseases. In patients with TAO, extraocular muscles are unevenly affected, which results in binocular double vision. The purpose was to present the method of the binocular single vision and its use its applicability in monitoring the effect of the treatment for patients with TAO.
METHODS: The binocular double vision was determined with the Goldmann perimeter. The size (area) of the binocular single vision field of patients with TAO was compared before and after non-surgical treatment.
RESULTS: The normal binocular single vision field is limited to 50° in superior axis, 60° in inferior axis and 60° in both lateral axes. In patients with TAO the binocular single vision filed was decreased and the centre of the vision field was displaced depending on the impairment level of individual extra-ocular muscles. After intensive treatment of patients with active TAO who suffer from double vision, with intravenous corticosteroids or in combination with retrobulbar radiation, the binocular vision field of single vision increased. The effect of the treatment on the binocular single vision field can also be quantified by the area of single vision.
CONCLUSIONS: The binocular single vision field is a simple method that can be used to evaluate the effectiveness of treatment in patients with active TAO. It also allows the quantification of the treatment effect.

NAPOTITVE NA ODDELEK ZA ORTOPTIKO IN STRABOLOGIJO
REFFERALS TO THE DEPARTMENT FOR ORTHOPTICS AND STRABOLOGY

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NAMEN: Oddelek za ortoptiko in strabologijo obravnava otroke s slabovidnostjo in škiljenjem in odrasle z motnjami vida, dvojnim vidom in škiljenjem. K nam jih napotijo oftalmologi sekundarne ravni, ki že opravijo osnovno obravnavo. Pri vseh pacientih je potrebna osnovna anamneza, včasih tudi usmerjena. Osnovna obravnava pri otroku obsega: vidno ostrino, refrakcijo v cikloplegiji, predpis očal, osnovno ortoptično zdravljenje z okluzijo, če je indicirana, in vaje dukcije za popravo škiljenja, če je to indicirano. Osnovna obravnava pri odraslem obsega: vidno ostrino, določitev korekcije po pravilih optometrije, predpis očal, če je potreben, vaje dukcije za poravnavo odklona in izboljšanje gibljivosti zrkel, če je potrebno. Pri vseh je potreben tudi osnovni oftalmološki pregled.
MATERIAL: Pregled napotitev od februarja 2015 do januarja 2016.
REZULTATI: Pogosto so opažene pomanjkljivosti pri predloženi dokumentaciji ob napotitvah. Pacienti so razvrščeni glede na starost, vzrok napotitve in popolnost potrebnih podatkov.
ZAKLJUČEK: Za lažjo razvrstitev v čakalni seznam so potrebni natančni podatki o zdravljenju pred napotitvijo. Le tako lahko zagotovimo strokovni oceno nujnosti pregleda in razvrstitev na čakalni seznam.

PURPOSE: At the Department of orthoptics and strabology, children with strabismus and amblyopia, and adults with visual impairments, double vision, and strabismus are treated. They are referred to us by the secondary level ophthalmologists who have completed the initial treatment. In all patients, basic history is required, while directed history, only if needed. The basic treatment in children consists of: visual acuity, cicloplegic refraction, refractive error prescription, basic orthoptics and pleoptic treatment with occlusion, if it is indicated, and duction exercises to help correcting strabismus, if indicated. The basic treatment for an adult involves: visual acuity, determining the refractive correction by rules of optometry, prescribe glasses, if needed, duction exercises for the settlement of deviation and improve the flexibility of the eyeballs, if necessary. Basic eye examination is also needed in all patients.
MATERIALS: Analysis of referrals from February 2015 to January 2016.
RESULTS: Deficiencies in the referring documentation are rather often. Patients were grouped according to age, cause of referral and completeness of the required data.
CONCLUSION: In order to facilitate the classification of the waiting list is needed accurate information about the treatment before posting. Only in this way can we ensure professional criterion on the need to review and classification on a waiting list.

RETROSPEKTIVNA ANALIZA KIRUŠKEGA ZDRAVLJENJA ODRASLIH BOLNIKOV S ŠKILJENJEM, OPERIRANIH V OBDOBJU 2012–2015

RETROSPECTIVE ANALYSIS OF SURGERY FOR STRABISMUS IN ADULTS IN THE PERIOD 2012–2015

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NAMEN: Predstaviti osnovne značilnosti odraslih bolnikov, ki so bili operirani zaradi škiljenja.
METODE: Retrospektivna analiza zaporednih bolnikov, starih 18 ali več let, ki sta jih zaradi škiljenja operirali dve od avtoric na Očesni kliniki v Ljubljani v obdobju 2012–2015.
REZULTATI: Operiranih je bilo 241 bolnikov, 117 moških (48,5 %) in 124 žensk (51,5 %). Njihova povprečna starost je bila 39,4 ± 13,2 let. Večina je imela divergentno škiljenje (125 bolnikov; 51,9 %); pri 53 bolnikih (22,0 %) je šlo za paralitično škiljenje. Dvojni vid je imelo 52 bolnikov (21,6 %). Škiljenje je bilo posledica ščitnične orbitopatije pri 14 bolnikih (5,8 %). Šest bolnikov (2,5 %) je nagibalo glavo pred operacijo.
ZAKLJUČEK: Divergentno škiljenje je najpogostejša oblika škiljenja pri odraslem. Etiološko je škiljenje pri odraslem lahko posledica paralitične motnje; lahko imajo stalno dvojni vid. Z operativnim posegom ponovno vzpostavimo poravnanost zrkel in s tem odpravimo dvojni vid.

PURPOSE: To report basic characteristics of adult patients with strabismus who had surgery.
METHODS: Retrospective analysis of consecutive patients at least 18 years old, who had strabismus surgery (by two of the authors) in the Ljubljana Eye hospital in the period 2012–2015.
RESULTS: In total, 241 patients were operated, 117 men (48.5%) and 124 women (51.5%). The mean age of patients was 39.4 ± 13.2 years. The majority had divergent strabismus (125 patients; 51.9%), 53 patients (22.0%) had paralytic strabismus. Diplopia was presented in 52 patients (21.6%). There were 14 patients (5.8%) who had thyroid orbitopathy and strabismus. Six patients (2.5%) had abnormal head posture before surgery.
CONCLUSION: Divergent strabismus is the most common form of adult strabismus. Paralytic disorder can be the cause for adult strabismus and patients can have constant diplopia. In addition to anatomical realignment of the eyes, surgical treatment of adult patients also restores proper vision.

ROŽENICA
CORNEA

Moderatorja / Moderators: VLADIMIR PFEIFER, PETRA SCHOLLMAYER

LAMELARNA TRANSPLANTACIJA ROŽENICE – *DMEK* IN *DALK*
LAMELLAR CORNEAL SURGERY – *DMEK* AND *DALK*

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PURPOSE: To introduce and discuss new techniques in corneal transplant surgery.
METHODS: In the last decade, there was trend to the lamellar keratoplasty. New techniques were developed. In the direction to minimal invasive surgery, the lamellar techniques induce les trauma and provide quicker rehabilitation, preservation of normal corneal topography, preservation of the tectonic strength of the eye and greater predictability of refractive outcome from triple procedures. The surgical outcome of lamellar surgery is comparable to penetrating keratoplasty regarding visual acuity, the rehabilitation is quicker, and some of these surgeries can be repeated. Techniques like Deep Anterior Lamellar Keratoplasty (*DALK*) were introduced. Anwar's Big Bubble technique will be shown. All kinds of posterior lamellar surgeries will be mentioned and some of them will be shown (*DLEK, DSEK, DSAEK*). Melles Descemet Membrane Endothelial Keratoplasty (*DMEK*) will also be presented. In lamellar keratoplasty, the rehabilitation time is shorter, surgically induced astigmatism is lower, procedures can be repeated with less trauma, and penetrating keratoplasty (*PKP*) is always an option. Possibilities of transplanting artificial corneas will be discussed.
RESULTS: New minimally invasive keratoplasty techniques provide good results: visual acuity is comparable to PKP, there is less induced astigmatism.
CONCLUSION: The new lamellar techniques of corneal transplantation are excellent alternative to *PKP*, provide shorter rehabilitation, les induced astigmatism and some of them are procedures that need to be performed only once in a lifetime like *DALK*. In complicated cases with high rejection risk, artificial cornea can be used.

ZGODNJI REZULTATI ENDOTELIJSKE PRESADITVE PRI FUCHSOVI ENDOTELIJSKI ROŽENIČNI DISTROFIJI

SHORT-TERM RESULTS OF DESCEMET'S MEMBRANE ENDOTHELIAL KERATOPLASTY IN FUCHS' ENDOTHELIAL CORNEAL DYSTROPHY

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NAMEN: Oceniti zgodnje klinične rezultate serije bolnikov po endotelijski keratoplastiki s presaditvijo Descemetove membrane (DMEK).
METODE: V retrospektivni analizi primerov smo ocenjevali rezultate prvih 6 zaporednih DMEK na 5 očeh pri 5 bolnikih s Fuchsovo endotelisko roženično distrofijo in začetno bulozno keratopatijo (pri 4 od 5 bolnikov) v obdobju med julijem in decembrom 2015. Pregledali smo dokumentacijo in zabeležili intraoperativne ter pooperativne zaplete, korigirano preoperativno in pooperativno vidno ostrino (BCVA), pahimetrijo (centralno debelino roženice, CCT), prileganje presadka na OCT roženice, gostoto endotelijskih celic (ECD) darovalca ter pooperativno.
REZULTATI: Bolnike smo povprečno spremljali 5 mesecev (2–7 mesecev). DMEK je bil uspešen pri 4 bolnikih, neuspešen le v prvem primeru. Intraoperativni zapleti so bili: težave z insercijo presadka pri 2 bolnikih ter narobe obrnjen presadek pri eni bolnici, pri kateri je bilo potrebno ponoviti DMEK, ki je bil tokrat uspešen. Injekcija plina v sprednji prekat (rebubbling) je bila potrebna v enem primeru zaradi delnega odstopa presadka, ki se je po intervenciji prilegal. V času sledenja ni bilo nobene zavrnitvene reakcije. BCVA se je po operaciji izboljšala pri vseh bolnikih, vključno z bolnico z vztrajajočimi buloznimi spremembami. Povprečna BCVA pred DMEK je znašala 0,28. Povprečna pooperativna BCVA vseh bolnikov je znašala 0,5, oziroma 0,9, če smo izključili 2 bolnici z drugo očesno patologijo. Povprečna CCT se je zmanjšala s 675 µm pred operacijo na 549 µm že 1 mesec po DMEK. Povprečna vrednost ECD darovalcev je bila 2845. Po DMEK smo zabeležili znižanje povprečne ECD za 34 % (na 1883) v prvem mesecu, zatem pa le za nadaljnjih 7 % (na 1670) do konca sledenja.
ZAKLJUČEK: DMEK je uspešna kirurška tehnika s hitro vidno rehabilitacijo. V primeru endotelijske odpovedi lahko postopek ponovimo.

PURPOSE: To evaluate the short-term clinical results of consecutive cases after Descemet's membrane endothelial keratoplasty (DMEK).
SUBJECTS AND METHODS: In retrospective case series, the outcomes of the first 6 consecutive DMEK procedures in 5 eyes of 5 patients with Fuchs' endothelial corneal dystrophy and postoperative bullous keratopathy (in 4 of 5 patients) during the period July 2015 to December 2015 were investigated. Medical records were reviewed to obtain intraoperative and postoperative complications, preoperative and postoperative best corrected visual acuity (BCVA), pachymetry (central corneal thickness, CCT), graft attachment assessed by anterior segment OCT, donor endothelial cell density (ECD), and postoperative ECD.
RESULTS: The mean follow-up was 5 months (range 2–7months). DMEK was successful in 4 patients, while it resulted in persistent bullous keratopathy in the first case. Apart from difficulties in graft inserting in 2 patients and upside down graft in 1 patient, that needed repeated DMEK, no other intraoperative complications were noted. Rebubbling was necessary in one patient with partial graft detachment, the graft attached after intervention. There was no graft rejection. BCVA improved in all patients postoperatively. Mean preoperative BCVA was 0.28, mean postoperative BCVA was 0.5 when including and 0.9 when excluding 2 eyes with ocular co-morbidities, respectively. Mean CCT decreased from 675 µm preoperatively to 549 µm at 1 month. Mean donor ECD was 2845, decreased by 34% to mean ECD 1883 at 1 month and for only further 7% (1670) until the end of the follow-up.
CONCLUSIONS: Our case series shows that DMEK is a safe procedure with fast visual recovery. DMEK can be repeated in case of the endothelial failure.

UČINEK PENETRANTNE KERATOPLASTIKE IN IMPLANTACIJE ROŽENIČNE PROTEZE NA ZADAJŠNJI OČESNI SEGMENT

EFFECT OF PENETRATING KERATOPLASTY AND KERATOPROSTHESIS IMPLANTATION ON THE POSTERIOR SEGMENT OF THE EYE

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CILJ: Primerjati kronično vnetje v roženici po singenski in alogenski presaditvi roženice in vsaditvi miniaturne roženice (m-KPro) in določiti obseg poškodbe mrežnice in vidnega živca.
METODE: Roženice BALB/c (singenske) ali C57BL/6 (alogenske) smo presadili na prejemniške miške BALB/c kot del presaditve roženice ali vsaditve m-KPro. Z meritvami frekvenc levkocitov CD45+, T-celic CD4+, dendritičnih celic CD11b+ in granulocitov/monocitov Gr-1+ s pretočno citometrijo smo izmerili roženično vnetje. V roženici in mrežnici smo določili ekpresijo provnetnih citokinov TNFα in IL-1β z Real-Time qPCR osem tednov po presaditvi/vsaditvi. Miške smo zdravili s protitelesi anti-TNFa ali anti-IL-1b, nato pa smo 10 tednov po operaciji izmerili izgubo aksonov v vidnem živcu.
REZULTATI: Frekvence celic so bile višje v singenski in alogenski skupini m-KPro kot v singenski in alogenski skupini PK. Ekspresije TNFA so bile večje v skupinah sinKPro, aloPK, in aloKPro kot v skupini z naivnimi miškami in v skupini sinPK. Ekspresija IL-1B je bila signifikantno večja v obeh skupinah m-KPro kot v skupinah PK. Degeneracijo aksonov v vidnem živcu smo zaznali v alogenskih skupinah PK in m-KPro. Blokada TNFa je zmanjšala degeneracijo aksonov za 35 %.
ZAKLJUČEK: Alogenske implantacije PK in m-KPro z alogensko nosilno roženico povzročajo kronično vnetje zadnjega očesnega segmenta in degeneracijo vidnega živca. Blokada s TNFa je zmanjšala degeneracijo aksonov vidnega živca v našem predkliničnem modelu.

PURPOSE: To compare the effects of post-penetrating keratoplasty (PK) and post-Keratoprosthesis (KPro) surgery-related inflammation on the posterior segment of the eye and to assess inhibition of tumour necrosis factor alpha (TNFα) and interleukin 1 beta (IL-1B) on these effects.
METHODS: BALB/C (syngeneic) or C57BL/6 (allogeneic) corneas were transplanted onto BALB/C host beds as part of PK or miniature KPro (m-KPro) implantation. Intraocular pressure (IOP) was measured via an intracameral pressure sensor; tissues were harvested and analyzed 8 weeks after surgery. Expression of TNFA and IL-1B in the retina were analyzed using Real-Time qPCR. Optic nerve degeneration (axon count, circularity and area) was assessed quantitatively using ImageJ software. After m-KPro implantation mice were treated with saline, anti-TNFA or anti-IL-1B antibody, and axonal loss was assessed after 10 weeks.
RESULTS: Mean IOP was within normal limits in the operated and fellow eyes in all groups. The mRNA expression of TNFA and IL-1B was highest in m-KPro groups with either syngeneic or an allogeneic carrier. We observed optic nerve degeneration in both allogeneic PK and m-KPro implanted eyes with an allogeneic carrier. However, TNFA blockade significantly reduced axonal loss by 35%.
CONCLUSIONS: Allogeneic PK and m-KPro implants with an allogeneic carrier lead to chronic inflammation in the posterior segment of the eye, resulting in optic nerve degeneration. In addition, blockade of TNFA prevents axonal degeneration in this preclinical model of alloKPro implantation.

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PREDPRIPRAVLJENA TKIVA ZA *DSAEK* IN *MEK* – NOVOST V ENDOTELIJSKI KERATOPLASTIKI

PRE-LOADING *DSAEK* AND *MEK* TISSUES: INNOVATION IN ENDOTHELIAL KERATOPLASTY

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Eye banks have always been collecting, evaluating and storing suitable donor corneas and ocular tissues for surgical use. Now, an additional role is to process tissues for advanced techniques of endothelial keratoplasty (EK), such as the preparation of pre-loaded lenticules for (UT)DSAEK, and pre-stripped membranes for DMEK. These tissues can be prepared in eye banks using specific expertise and dedicated instruments in order to provide a wider range of services to surgeons.

Using a new technology (3D printing), we developed a simple device to ensure the preservation and the safe delivery of the posterior endothelial lenticule (Descemet's and corneal stroma), in order to facilitate its handling in the operating theatre.

Furthermore, eye banks have also started the preparation and shipment of pre-stripped tissue for DMEK surgery where the membrane has been partially peeled out from its original site.

Both these tissue preparations reduce the efforts, time and cost in the surgery room, and also help to transplant a validated tissue which means the possibility to evaluate the morphology and functionality of the corneal endothelium, thus improving the quality and the safety of the procedure.

ZNAČILNOSTI CELIC LIMBALNE NIŠE PRI GOJENJU LIMBALNEGA EKSPLANTATA *EX-VIVO* NA AMNIJSKI MEMBRANI

CHARACTERISTICS OF LIMBAL NICHE CELLS FROM *EX-VIVO* LIMBAL EXPLANT CULTURED ON AMNIOTIC MEMBRANE

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NAMEN: Želeli smo proučiti vpliv gojenja limbalnega eksplantata na amnijski membrani (AM) na proliferacijo epitelijskih in mezenhimskih matičnih celic, ki se nahajajo v limbalni niši. AM omogoča ustrezno mikrookolje migrirajočim matičnim celicam. Matične celice lahko posredno identificiramo s pomočjo domnevnih pozitivnih in negativnih označevalcev.

METODE: Človeški kadaverski korneoskleralni obroč smo razdelili na 2 mm^2 limbalne biopsije – eksplantate. Limbalne eksplantate smo nato gojili na dveh podlagah: amnijski membrani na epitelijski ali stromalni strani, ali na plastičnih celičnih gojiščih (primerjalna skupina) v hranilnem mediju, kateremu smo dodali le humani AB-serum. S pomočjo pretočne citometrije smo določili izražanje mezenhimskih matičnih označevalcev (CD73/CD90/CD105), proliferacijskih in domnevnih pluripotentnih limbalnih epitelijskih označevalcev (CD184 in CD117) ter epitelijskih označevalcev (CK7 in MUC). S pomočjo imunohistokemije smo določili izražanje epiteliskega pluripotentnega označevalca p63, označevalca proliferacije Ki67 in pancitokeratina.

REZULTATI: Morfološko in imuno-fenotipsko smo dokazali dve populaciji matičnih celic. Delež mezenhimskih matičnih in CD184 pozitivnih celic je bil statistično pomembno večji ($p < 0,05$) v kulturah, gojenih brez amnijske membrane, medtem ko delež pozitivnih celic CD117 ni bil statistično pomembno drugačen. Na obeh straneh AM smo imunohistokemično dokazali epitelijsko rast, posamezne celice so bile pozitivne tudi za markerja Ki67 in p63.

ZAKLJUČEK: Limbalne celice, gojene na AM, so manj izražale markerje za mezenhimske matične celice kot celice, gojene na plastičnih krovnikih, zato AM preferenčno omogoča rast epitelijskih matičnih celic limbalne niše. S pomočjo histologije smo identificirali epitelijsko rast na obeh straneh AM, brez morfoloških razlik ali pozitivnosti za p63 in Ki67. Epitelijska in stromalna stran sta omogočili rast epitelijskih limbalnih matičnih celic.

PURPOSE: To analyze the effect of intact amniotic membrane (AM) orientation (epithelial/ stromal side up) on the viability, proliferation and differentiation potential of cultured limbal cells from limbal explants. AM enables limbal explant culturing without the need of a supportive fibroblast feeder layer. Putative positive and negative molecular markers can identify different stem cells.

METHODS: The preserved cadaveric human corneoscleral rim was cut into 2 mm^2 sized explant samples. Each limbal explant was cultured on or without AM using only human AB-serum supplemented culturing medium. Intact AM was positioned with either AM intact epithelial side up or the AM stromal side up. The expression of mesenchymal stem cell markers (CD73, CD90, CD105), proliferation and putative progenitor limbal epithelial stem cell markers (CD184, CD117), epithelial markers (MUC, CK7) was determined by flow cytometry. Immunohistology staining was tested for pancytokeratin, epithelial progenitor cell marker p63, and proliferation marker Ki67.

RESULTS: Morphological and immunostaining analyses revealed two stem cell population types, which could be identified over prolonged culturing time periods. Expression of limbal mesenchymal stem cell markers and CD184 was significantly higher ($p < 0.05$) in cultures cultivated without AM. However, no statistically significant difference was observed in CD117 expression. The cells cultivated on AM retained an epithelial cell

structure, which was further confirmed by histology examination. Histology revealed limbal epithelial growth and p63, Ki67 positive cells on both sides of AM.

CONCLUSIONS: Limbal cells cultivated on AM exhibited a lower expression profile of limbal mesenchymal stem cells as limbal cells cultivated on plastic culture plates, therefore AM preferentially enables epithelial cell growth. Histology confirmed limbal epithelial cell growth on both sides of AM, with no morphological differences, or positivity of cells for p63 and Ki67. Epithelial and stromal side of AM enabled culturing of limbal epithelial stem cells.

CROSS-LINKING PLUS: KOMBINIRANO ZDRAVLJENJE KERATOKONUSA
CROSS-LINKING PLUS: COMBINATION TREATMENT FOR KERATOCONUS

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NAMEN: Predstaviti protokol in rezultate kombiniranega zdravljenja keratokonusa z lasersko ablacijo (PRK) in metodo križnega povezovanja kolagenskih vlaken roženice (***cross-linking***) ter primerjati rezultate z objavljenimi rezultati drugih raziskav.
METODE: Retrospektivna analiza pacientov, zdravljenih s topografsko vodeno lasersko ablacijo (1000-herčnim laserjem Ivis excimer ali 200-herčnim Alconovim laserjem WaveLight) in obsevanih z metodo križne vezave kolagenskih vlaken (CSO 365 nm, 3 mW/cm^2). Predoperativno vidno ostrino, keratometrijo in pahimetrijo smo primerjali z rezultati ob zadnjem kontrolnem pregledu ter z objavljenimi rezultati drugih raziskav.
REZULTATI: Rezultati kombiniranega zdravljenja keratokonusa so primerljivi z objavljenimi rezultati drugih raziskav. Kažejo na varno in uspešno zdravljenje, ki preprečuje napredovanje bolezni, in s popravljanjem roženične površine izboljša vidno ostrino.
ZAKLJUČEK: Keratokonus je degenerativna, progresivna, asimetrična bolezen roženice, za katero je značilno tanjšanje in posledično bočenje roženice z iregularnim astigmatizmom in hudo kratkovidnostjo, kar povzroča nepredvidljivo in slabo vidno ostrino. Kombinirano zdravljenje bistveno bolj izboljša vidno rehabilitacijo, kot sama metoda križnega povezovanja kolagenskih vezi.

PURPOSE: To present our protocol and clinical results of simultaneous photorefractive keratectomy (PRK) followed by corneal collagen cross-linking (CLX) and compare our results with published data.
METHODS: Keratoconic patients were treated with customised topography guided PRK with the ***Ivis*** 1000 Hz excimer laser or Alcon/***WaveLight*** 200 Hz followed by collagen cross-linking with 3 mW/cm^2 UVA irradiation using the CSO 365 nm. Retrospectively evaluated data for preoperative visual acuity, keratometry and pachymetry were compared with the results at the last clinical visit and with the results from published studies.
RESULTS: Our clinical data of combine treatment demonstrates improved corneal regularity and visual acuity, safe and effective option for keratoconus management comparable to other studies.
CONCLUSIONS: Keratoconus is a degenerative, progressive, unpredictable, asymmetrical disorder characterized by tinning and bulging of cornea producing irregular astigmatism with unpredictable visual acuity. Corneal cross-linking with laser regularisation not only arrests keratectasia progression but improves visual rehabilitation to a step beyond that a simple cross-linking procedure would provide.

PREČNO POVEZOVANJE KOLAGENSKIH VLAKEN PRI PACIENTIH Z BULOZNO KERATOPATIJO – PRIKAZ KLINIČNEGA PRIMERA

CORNEAL COLLAGEN CROSSLINKING IN PATIENTS WITH BULLOUS KERATOPATHY – A CLINICAL CASE PRESENTATION

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NAMEN: Predstaviti primer pacienta z bulozno keratopatijo, pri katerem so se subjektivne težave z bolečino zmanjšale po zdravljenju s prečnim povezovanjem kolagenskih vlaken roženice (***Corneal collagen cross-linking, CXL***).
METODE: Oseminpetdesetltni pacient z bulozno keratopatijo je prišel v našo ambulanto, ker ni več želel nositi terapevtske kontaktne leče. Na desnem očesu je pred leti utrpel penetrantno poškodbo, kasneje pa je bila opravljena tudi vitrektomija. Po posegu je bulozna keratopatija, ki jo je sicer imel že pred posegom, napredovala s pogostimi ponavljajočimi se erozijami roženice, kar je močno zmanjšalo pacientovo kakovost življenja. Najboljša korigirana vidna ostrina je bila gib roke in sicer pred operacijo in po njej. Decembra 2014 smo naredili standardni CXL na desnem očesu. Po posegu smo pacientovo stanje redno spremljali v naši ambulanti, ob čemer smo vsakič opravili slikanje sprednjih delov, optično koherentno tomografijo roženice in ocenili bolečino po VAS.
REZULTATI: Pacient je bil subjektivno brez solzenja in bolečin skoraj 8 mesecev po CXL. V tem obdobju smo na biomikroskopu opazili zmanjšanje motnjav roženice, sprva rahlo in nato izrazito zmanjšanje edema in naposled izginotje buloznih sprememb. Po 6 do 8 mesecih pa so se spremembe postopoma ponovno pojavile. Tudi simptomi so se ponovili neposredno po prebolelem akutnem konjunktivitisu. Vidna ostrina je bila ves čas gib roke pred očesom. Predlagali smo mu keratoplastiko kot simptomatsko zdravljenje, vendar zaenkrat pacient poseg zavrača. Vseeno pravi, da se mu je kakovost življenja bistveno izboljšala, čeprav ponovno nosi terapevtsko kontaktno lečo.
ZAKLJUČEK: CXL je obetajoče dopolnilno zdravljenje pacientov z bulozno keratopatijo s subjektivnimi simptomi, posebej tistih, ki čakajo na keratoplastiko. V skladu z dostopno literaturo pa so koristni učinki prehodni. Kljub temu je našemu bolniku poseg subjektivno izboljšal kakovost življenja.

PURPOSE: To report a case of pain relief after corneal collagen cross-linking with UV-A and riboflavin (CXL) in a patient with bullous keratopathy and discuss the role of CXL in the treatment of such patients.
METHODS: A 58-year old man with bullous keratopathy presented to our unit asking for an alternative solution to bandage contact lens which he found impractical. He developed bullous keratopathy with recurrent corneal erosions in his right eye following penetrating injury to the eye and vitrectomy, leading to severely decreased quality of life. BCVA was hand movement. We performed standard CXL on his right eye in December 2014. After the procedure we followed-up his condition regularly in our unit performing anterior segment optical coherence tomography, photo documentation, and assessing the pain with VAS score.
RESULTS: Patient reported alleviation of pain and tearing lasting for almost 8 months after CXL, while he was completely pain-free. During this period we noticed a decrease of overall corneal haze and slight decrease of edema, followed by marked decrease and finally disappearance of bullous changes with gradual recurrence after 6 to 8 months. Symptoms also recurred following an episode of acute conjunctivitis. BCVA remained hand movement throughout. Eventually he was offered keratoplasty as a symptomatic treatment, but so far has refused the procedure. His status is still being followed-up in our unit. The patient reports marked increase in quality of life, although he is once again wearing the therapeutical contact lenses.
CONCLUSIONS: CXL is promising as an adjunctive treatment for symptomatic patients with bullous keratopathy, especially in those who are awaiting keratoplasty. In accordance with available literature we conclude that the beneficial effects seem to be transient. However, in our case, it significantly increased patient's reported quality of life.

KERATOKONUS PRI OTROCIH
KERATOCONUS IN CHILDREN

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NAMEN: Keratokonus je nevnetna ektazija roženice, kjer se centralni in paracentralni del roženice progresivno tanjšata, rezultat je nastanek strme stožčaste izbokline, ki povzroča iregularni astigmatizem in tako precejšnjo omejitev vida. Značilnost iregularnega astigmatizma je, da zaradi nepravilnosti površine roženice principalna meridiana nista v medsebojnem razmerju 90° in ga popolnoma ni možno korigirati s cilindričnimi očalnimi lečami. Namen raziskave je ugotavljanje načina zgodnjega odkrivanja keratokonusa pri otrocih in vpliva keratokonusa na vidno ostrino.
METODE: Retrospektivni pregled podatkov pacientov, mlajših od 15 let, v letih 2014 in 2015 v ambulanti za kontaktne leče, katerih vidna ostrina se ni izboljšala z očali.
REZULTATI: Skupno je bilo vključenih 28 pacientov. Po starosti ob prvem pregledu sta bila 2 v skupini 0–5 let, 16 pacientov je bilo starih 6–10 let in 10 11–15 let. Roženico, debelo < 500 µm, imelo 7 pacientov. En pacient je imel opravljen ***cross-linking*** obojestransko, 22 jih je uporabljalo kontaktne leče (5 pacientov kontaktnih leč ni uporabljalo zaradi strahu ali drugih osebnih razlogov). Pri 1 pacientu je bila z ERG ugotovljena distrofija paličnic in čepnic.
ZAKLJUČEK: V kolikor se ambliopija ne popravlja, imamo visoke astigmatizme ali pogoste spremembe dioptrije moramo pomisliti na keratokonus ali iregularni astigmatizem.

PURPOSE: Keratoconus is a non-inflammatory ectasia of the cornea, in which the central and paracentral part of the cornea become progressively thinner, causing a cone-like bulge, resulting in irregular astigmatism and visual impairment. In irregular astigmatism usually because of an irregularity of the corneal surface, the principal meridians are not 90° apart, and can therefore not be completely corrected with spectacle cylinders. The purpose is to establish the manner of early detection of keratoconus and its effect on visual acuity.
METHODS: A retrospective overview of patients younger than 15 ears in years 2014–2015, whose visual acuity did not improve with the use of spectacles.
RESULTS: There were 28 patients included in the study; 2 patients from 0–5 years of age, 16 patients from 6–10 years of age and 10 patients from 11–15 years of age. 7 patients had a corneal thickness < 500 microns. 1 patient had already had crosslinking performed on both eyes. 22 patients were using contact lenses as a therapeutic option. 5 patients did not use contact lenses due to fear or other personal reasons. In 1 patient cone-rod dystrophy was discovered with ERG.
CONCLUSIONS: In cases when amblyopia is not improving, we have high degrees of astigmatism or rapidly changing eyeglass prescription, we have to think about keratoconus or irregular astigmatism as diagnostic options.

ZDRAVLJENJE PELUCIDNE MARGINALNE DEGENERACIJE S PREČNIM POVEZOVANJEM KOLAGENSKIH VLAKEN ROŽENICE – PRIKAZ KLINIČNEGA PRIMERA

COLLAGEN CROSS-LINKING IN THE TREATMENT OF PELLUCID MARGINAL DEGENERATION – A CASE REPORT

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NAMEN: Pelucidna marginalna degeneracija (PMD) je redka bolezen s spodnjim perifernim stanjšanjem roženice, za katero je značilen nepravilen astigmatizem, ki lahko z leti počasi napreduje. Pri bolniku s PMD smo ovrednotili spremembe na zdravljenem in nezdravljenem očesu.
METODE: Štiriintridesetletnega moškega z bilateralno PMD smo zdravili po standardnem postopku s prečnim povezovanjem kolagenskih vlaken roženice (***corneal collagen cross-linking*** – CXL) z UV-A in riboflavinom na enem očesu. Opazovali smo vidno ostrino brez korekcije in z najboljšo korekcijo na daljavo, sferični ekvivalent in cilindrično refrakcijo, spremembe, ugotovljene s pregledom z biomikroskopom, tonometrijo in debelino roženice. Pred operacijo in 11 mesecev po njej smo spremljali vrednosti keratometrije in tomografskih indeksov roženice ter spremembe endotelijskih celic. Ovrednotili smo slike optične koherentne tomografije sprednjega segmenta in fotografije roženice z biomikroskopom.
REZULTATI: Vidna ostrina brez korekcije in z najboljšo korekcijo na daljavo sta ostali stabilni na obeh očeh. Keratometrične vednosti in tomografski indeksi so se na zdravljenem očesu nekoliko izboljšali, medtem ko so se na nezdravljenem očesu poslabšali. Meritve roženične debeline s tomografom in s spekularno mikroskopijo so se zmanjšale tako na zdravljenem kot na nezdravljenem očesu. Število endotelijskih celic se je nekoliko zmanjšalo samo na zdravljenem očesu.
ZAKLJUČEK: CXL lahko pri bolnikih s PMD odloži ali odpravi potrebo po roženični transplantaciji. O etiologiji, patofiziologiji, epidemiologiji in genetiki te bolezni je za zdaj malo znanega. Dostopnih je le malo podatkov o zdravljenju PMD s CXL, zato je potrebno še nadaljnje spremljanje.

PURPOSE: Pellucid marginal degeneration (PMD) is an uncommon disease of inferior peripheral corneal thinning, characterized by irregular astigmatism that may be slowly progressive over many years. We describe changes in the treated and the untreated eye of a patient affected by PMD.
METHODS: A 34-year-old man with bilateral PMD was treated by standard corneal collagen cross-linking with UV-A and riboflavin (CXL) in one eye. Uncorrected and best corrected distance visual acuity, spherical equivalent and cylinder refraction, slit lamp examinations, tonometry, and corneal thickness were observed. Simulated keratometric and tomographic index values were detected with corneal tomography. Endothelial cell counts were assessed at baseline and up to 11 months postoperatively. Anterior segment optical coherence tomography and photos of the cornea were evaluated.
RESULTS: After a follow-up, uncorrected and best corrected distance visual acuity remained stable in both eyes. Keratometric values and tomographic indexes slightly improved in the treated eye, while they increased in the untreated eye. The corneal thickness measurements observed with the instrument for the tomography of the anterior ocular segment and the specular microscopy decreased in the treated and the untreated eye. Endothelial cell count decreased slightly only in the treated eye.
CONCLUSIONS: CXL may postpone or eliminate the need of corneal transplantation in patients with PMD, although little is understood about the aetiology, pathophysiology, epidemiology, and genetics of this disease. Data are limited and long-term results are needed.

CORNEA VERTICILLATA PRI MLAJŠI BOLNICI – PRIKAZ PRIMERA

YOUNG WOMAN WITH CORNEA VERTICILLATA – A CASE REPORT

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NAMEN: Prikazati primer mlajše ženske z naključno najdbo sprememb na roženici. *Cornea verticillata* so epitelijski depoziti na roženici, ki jih najpogosteje vidimo pri pacientih, zdravljenih z amiodaronom in klorokvinom. Depoziti so običajno asimptomatski in po prenehanju terapije zbledijo. Podobne spremembe na roženici pa najdemo tudi pri redki, na kromosom X vezani presnovni bolezni, Fabryjevi bolezni, pri kateri zaradi pomanjkanja lizosomskega encima (α-galaktozidaze A) pride do kopičenja glikosfingolipidov v celicah. Poleg sprememb na roženici imajo pacienti s Fabryjevo boleznijo kožne angiokeratome, nevropatske bolečine v ekstremitetah, kasneje pa srčne in ledvične okvare.
METODE: Prikaz primera.
REZULTATI: Pri 30-letni bolnici so bile ob rutinskem oftalmološkem pregledu obojestransko ugotovljene spremembe na roženici, značilne za spremembe cornea verticillata. Bolnica je bila brez redne sistemske ali lokalne topične terapije. V osebni anamnezi je izstopala le nevropatska bolečina v nogah, ki se je pojavila v otroštvu, v zadnjih letih pa je bila manj izrazita. Družinska anamneza je bila nespecifična. Pri gospe je bil po oftalmološkem pregledu postavljen sum na Fabryjevo bolezen, ki smo ga s pomočjo referenčnega centra tudi potrdili.
ZAKLJUČEK: *Cornea verticillata* so spremembe na roženici na ravni epitelijskih celic. Najpogosteje nastanejo zaradi dolgotrajnega zdravljenja z amiodaronom ali klorokvinom, pomisliti pa je treba tudi na Fabryjevo bolezen.

PURPOSE: To present a case of a young woman with epithelial corneal deposits.
Cornea verticillata or vortex keratopathy manifests as a whorl-like pattern of golden brown or grey deposits in cornea. They are commonly seen in patients on treatment with amiodarone or chloroquine. The deposits are asymptomatic and usually disappear after cessation of treatment. Similar changes also occur in Fabry's disease, X-linked sphingolipidosis caused by impaired function of lysosomal enzyme α-galactosidase A. Systemic features of Fabry disease include neuropathic pain and angiokeratoma with later end organ complications of the heart and kidney.
METHODS: Case report.
RESULTS: A 30-year old patient attended routine ophthalmological exam where bilateral *cornea verticillata* was found. She did not take any drugs. In childhood, she suffered from neuropathic pain in lower extremities, but was otherwise healthy. Her family history was unremarkable. Clinical suspicion of Fabry disease was made and confirmed with the help of regional centre.
CONCLUSIONS: Cornea verticillata are asymptomatic whorled-like epithelial deposits that are most commonly due to amiodarone or chloroquine therapy. However, Fabry disease should also be differential diagnosis.

FABRYJEVA BOLEZEN — NOVI IZZIV ZA OFTALMOLOGE
FABRY DISEASE – A NEW CHALLENGE FOR OPHTHALMOLOGISTS

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PURPOSE: Fabry disease (FD) is a rare, X-linked disease caused by the deficient activity of lysosomal α-galactosidase (GAL). Patients with classic FD typically have GAL activity of less than 1% and display the characteristic neuropathic pain, angiokeratoma and cornea verticillata (CV) with childhood onset. Later in life end-organ complications of the kidney, heart and brain arise. Due to the X-linked nature of the disease, females are usually less severely affected. Screening for FD increasingly reveals individuals without characteristic features and with a variant of unknown significance (VUS) in the GLA gene. CV is one of the most frequent and characteristic signs of FD and assessment for CV may be a valuable diagnostic tool to assess if individuals with VUS have a non-classical phenotype or no FD at all.
METHODS: We performed a systematic review of literature to estimate the prevalence of CV in FD. Additionally, CV prevalence was assessed in the Slovenian FD cohort.
RESULTS: In the literature, CV was assessed in 21 cohorts (n = 753, 330 males). Pooled prevalence was 69% (74% males, 66% females). In 6 studies, 77 (19 males) individuals with a non-classical or uncertain diagnosis were identified. CV was present in 24% (n = 16, 2 males) and only in late-onset disease.
Thirty four (13 males, 21 females) confirmed FD patients from the Slovenian cohort were included from 12 families. All patients were classical and 79% (85% males and 76% females) had FD.
CONCLUSIONS: Due to numerous screenings for FD, many mutations were found, predominantly VUS. CV was found to be related to FD with a very high sensitivity in classical males. Thus, presence of CV in an individual with an uncertain diagnosis of FD indicates a pathogenic GLA variant, in the absence of medication that may induce CV; if CV is absent, FD cannot be excluded.

GLIVIČNI KERATITIS – PRIKAZ PRIMERA
FUNGAL KERATITIS – A CASE REPORT

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NAMEN: Glivične okužbe roženice so lahko vzrok pomembne izgube vida. Nevarnostni dejavniki so poškodbe roženice, topično zdravljenje, kirurški posegi na roženici in kronični keratitis. Diagnostika je težka, saj se običajno srečamo z bolnikom že v napredovali fazi obolenja. Zdravljenje je zahtevno zaradi slabe penetrance topičnih zdravil in njihove komercialne dostopnosti. Predstaviti želimo primer glivične okužbe roženice in perforirane roženične razjede, ki je bila prej zdravljena kot herpetični keratitis.
METODE: Prikazujemo primer 60-letne bolnice, ki je bila od maja 2015 zdravljena zaradi herpetičnega keratitisa na levem očesu. Po začetnem enomesečnem izboljšanju se je v avgustu 2015 ponovno pojavilo rdeče levo oko in stromalni infiltrat. Na mikološkem gojišču je iz skarifikata roženice porasla Candida Albicans. Stanje se je izboljšalo po zdravljenju s kapljicami 1-odstotnega vorikonazola in 2 injekcijama amfotericina B v sprednji prekat. Topično zdravljenje je nadaljevala v padajočem odmerku do decembra 2015. Tri tedne po prekinitvi zdravljenja se je keratitis ponovil in napredoval do roženične perforacije. Ponovno odvzeti vzorci roženice in prekatne vodke so bili negativni na glive, bakterije in viruse herpesa. Ob intenzivni antimikotični terapiji in dodatni terapiji za preprečevanje keratomalacije se je ulkus zacelil.
REZULTATI: Ob zadnjem kontrolnem pregledu marca 2016 ni bilo znakov recidiva, oko je bilo mirno, na roženici je bila vidna brazgotina, vidna ostrina s korekcijo pa je znašala 0,5.
ZAKLJUČEK: Na glivične okužbe roženice moramo pomisliti pri vztrajajočih keratitisih s slabim terapevtskim odzivom. Za preprečitev ponovitev je potrebno dolgotrajno zdravljenje z intenzivno topično antimikotično terapijo.

PURPOSE: Fungal corneal infection can be a cause of significant vision loss. Risk factors include trauma, topical medications, corneal surgery and chronic keratitis. The diagnosis is difficult to establish thus the infection is often advanced. The treatment is difficult due to poor corneal penetration of antifungal topical medications and poor commercial availability. We present a case of a patient with fungal corneal infection and perforated corneal ulcer that has been previously treated as herpetic keratitis.
METHODS: We present a case of a patient treated since May 2015 for herpetic keratitis of her left eye. After initial improvement she presented with red eye and white stromal infiltrate in August 2015. The corneal scraping was positive for Candida Albicans. She was successfully treated with topical voriconazole 1% nad 2 intracameral injections of amphotericin B. The topical antifungal therapy was slowly tapered and discontinued in December 2015. At the follow-up examination three weeks later she presented with recurrence of corneal ulcer that perforated. The repeated corneal and anterior chamber (AC) specimens were negative for fungi, bacteria and herpetic viruses. The ulcer closed with intense antifungal therapy, therapeutic contact lens and additional measures to prevent further corneal melting.
RESULTS: At the end of follow-up in March 2016, no signs of recurrence were noted, the eye was quiet with central corneal scar, BCVA was 0.5.
CONCLUSIONS: Fungal infection has to be considered in case of prolonged course of keratitis. The treatment of fungal keratitis is challenging, requiring prolonged and intensive topical antifungal treatment.

BOLEČE PORDELE OČI BOLNIKA S SINDROMOM STEVENS-JOHNSON IN SARKOIDOZO

PAINFUL RED EYES IN A PATIENT WITH STEVENS-JOHNSON SYNDROME AND SARCOIDOSIS

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PURPOSE: To present the case of a 49-year-old patient with a two week history of painful red eyes, reduced visual acuity, unexplained episodes of fever and mucocutaneous blisters all over the body which tend to be a result of combination of acute onset of Stevens-Johnson syndrome and sarcoidosis which was confirmed in 1994 by lung biopsy. Stevens-Johnson syndrome (SJS) is an acute blistering disease of the skin and mucous membranes, including ocular surface. It is caused by a hypersensitivity reaction, usually to drugs. Sarcoidosis is a multisystem immune-mediated granulomatous disorder that commonly affects the eyes, presenting typically as a bilateral granulomatous anterior uveitis.
METHODS: Our report is based on retrograde case-study of a patient who was hospitalized at the Department of Ophthalmology in UKC Maribor in November 2015 due to complaints of redness and pain in the eyes after being checked by specialist of internal medicine, infectologist and dermatologist. Broad spectrum of diagnostics was performed.
RESULTS: Biopsy and direct immunofluorescence of the skin have shown urticarial and mild interface dermatitis, suggesting SJS associated with overuse of paracetamol and naproxen. Ophthalmological examination revealed bilateral granulomatous anterior uveitis, maculopapular rash and pustules on the skin of the eyelids. Mucocutaneous blisters disappeared after parenteral treatment with methylprednisolone and amoxicylin with clavulanic acid and local treatment with betamethasone and zinc oxide ointment. Uveitis was treated successfully by intensive parabulbar applications of dexamethasone and local applications of atropine, timolol, dexamethasone and diclofenac. Visual acuity returned to normal.
CONCLUSIONS: SJS can cause severe damage to the lids, conjunctiva or cornea and can lead to complete blindness. Even though patient in our case had bilateral anterior uveitis caused by sarcoidosis without damage to conjuctiva or cornea due to SJS, early ophthalmological diagnosis and treatment play an important role to prevent irreversible eye damage. Such a case has never been reported.

PARINAUDEV OKULOGLANDULARNI SINDROM – PRIKAZ PRIMERA

PARINAUD OCULOGLANDULAR SYNDROM – A CASE PRESENTATION

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UVOD: Perinaudov okuloglandularni sindrom (POGS) je očesno granulomatozno vnetje, za katero je značilen enostranski folikularni bulbarni ali palpebralni konjunktivitis ter vnetje preavrikularnih in submandibularnih bezgavk na isti strani. Najpogosteje se pojavlja pri bolezni mačje opraskanine, ki jo povroča ***Bartonella henselae***, pleomorfni gram-negativni bacil. Redko lahko v sklopu te bolezni vidimo nevroretinitis, papilitis, optični nevritis in fokalni retinohoroiditis. Drugi možni povzročitelji POGS so ***Mycobacterium tuberculosis, Francisella tularensis, Yersinia pseudotuberculosis, Treponema pallidum***. Za diagnostiko bolezni so poleg epidemiološke anamneze (stik z mačkami) pomembni serološki testi, ena izmed možnosti je tudi biopsija veznice.
PRIMER: Devetinpetdesetletna gospa je bila sprejeta na Očesni oddelek Splošne bolnišnice Celje zaradi granulomatoznega konjunktivitisa levega očesa in vnetja leve obušesne slinavke. Dva tedna pred sprejemom je opažala postopno slabšanje vida na levem očesu, oteklino vek in solzenje, nekaj dni zatem se je na levi strani vratu pojavila boleča zatrdlina. Doma je bila v stiku z mačkami, vendar je zanikala upraskanino ali ugriz. V času hospitalizacije smo opravili krvne preiskave, rentgensko slikanje pljuč, CT orbit, ultrasonografsko vodeno citološko punkcijo bezgavk na vratu, serološke preiskave na sifilis, bakterije ***Bartonella henselae, Toxoplasma gondii***, EBV in CMV in test QuantiFERON. Glede na pozitiven serološki izvid na bakterijo Bartonella hensellae smo po navodilu infektologa kot terapijo uvedli azitromicin peroralno. Dan po uvedbi antibiotične terapije je gospa postala febrilna, na dlaneh obeh rok se je pojavil eritem z manjšimi papulami. Gospo smo premestili na Oddelek za infekcijske bolezni, kjer so azitromicin ukinili in uvedli zdravljenje z rifampicinom in doksiciklinom. Ob tej terapiji se je stanje izboljšalo.
ZAKLJUČEK: Perinaudov okuloglandularni sindrom se pojavlja pri 5–10 % okužb z bakterijo Bartonella henselae, povzročiteljem bolezni mačje opraskanine. Bolezen je pogosto samoomejujoča, v hujših primerih pa jo zdravimo s sistemskimi antibiotiki. Prognoza bolezni je dobra.

INTRODUCTION: Parinaud oculoglandular syndrome (POGS) is an ocular granulomatous inflammatory condition characterized by unilateral follicular bulbar or palpebral conjunctivitis and is often associated with ipsilateral preauricular or submandibular lymphadenitis. Although POGS often presents as an atypical manifestation of cat scratch disease, other infectious and autoimmune aetiologies have been described. The mainstays of diagnosis are serologic testing by indirect immunofluorescence test (IFA) and various enzyme-linked immunoassays (ELISA).
CASE: Presentation of a 59-years old patient, who has been hospitalized in the Department of Ophthalmology in General hospital Celje because of granulomatous conjunctivitis and preauricular lymphadenitis. In the last two weeks she has noticed gradual impairment of vision in her left eye and a painful node in front of her left ear. The patient was asked about pets, and she volunteered that she has cats at home but denied any scratches. We have determined blood tests, lung X-ray, orbital computed tomography, ultrasonography-guided fine-needle aspiration cytology of a lymph node, serology for syphilis, *B. henselae, T. gondii*, EBV and CMV. Serology for *B. henselae* was strongly positive and the infectious disease team was consulted for what appeared to be cat-scratch disease (ocular bartonellosis). They recommended treatment with azithromycin. After one day of azithromycin therapy our patient got a fever and papular rash on her palms. The patient has been transferred to the Department for infectious diseases where she was treated her with rifampin and doxycycline.
CONCLUSIONS: Parinaud oculoglandular syndrome has been reported in up to 5–10% of cat scratch disease cases. Treatment can be supportive in mild cases and in more severe cases, systemic antibiotics are considered. The outcome of the disease is good.

SUHOST OČI IN MENOPAVZA
DRY EYES AND MENOPAUSE

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NAMEN: Preučiti suhost oči (objektivni in subjektivni znaki) pred menopavzo, v perimenopavznem obdobju ter po menopavzi.
METODE: V raziskavo smo vključili 3 skupine žensk, starih med 47 in 53 let. V prvi skupini so bile ženske pred perimenopavzo, v drugi ženske v perimenopavznem obdobju, v tretji pa ženske po menopavzi. Vsaka skupina je štela 20 žensk. Sodelujoče smo prosili, naj izpolnijo vprašalnik Indeksa bolezni očesne površine (OSDI), ki je standardiziran za oceno simptomov suhega očesa. Sestavljen je iz 12 vprašanj o simptomih suhega očesa, dejavnostih, ki povzročajo suhe oči ter sprožilnih dejavnikih iz okolja. Od objektivnih metod smo opravili Schirmerjev test in fluorescinski čas razpoka solznega filma (TBUT). Schirmerjev test nam poda kvantitativno oceno količine solz. S testom TBUT določimo stabilnost solznega filma.
REZULTATI: Ženske v postmenopavznem obdobju so imele najnižje vrednosti Schirmerjevega testa in flourescinskega časa razpoka solznega filma. Najvišje vrednosti objektivnih testov ter najmanj simptomov po vprašalniku OSDI so imele ženske pred perimenopavzo.
ZAKLJUČEK: Ugotovili smo, da imajo ženske po menopavzi bolj suhe oči kot tiste pred perimenopavzo.

PURPOSE: To examine objective and subjective dry eye tests in women before, during perimenopause and after menopause.
METHODS: In this study women (47–53 years old) were divided in three groups. Women in the first group were before perimenopause, in the second during perimenopause and in third women after menopause. In each group there were 20 women. Firstly, we asked the women to fill out the dry eye ocular surface disease index questionnaire (OSDI), which is a standardized instrument for dry eye symptoms evaluation. OSDI questionnaire is made of 12 questions about dry eye symptoms, activities that cause dry eyes and triggering factors in the environment, that contribute to dry eyes symptoms. Objective dry eyes signs were assessed by Schirmer test and fluorescein tear film break-up time (TBUT). Schirmer test is a quantitative assessment of tear production. TBUT gives us an objective measurement of relative stability of the precorneal tear film.
RESULTS: Women after menopause had lowest values of Schirmer test and tear break up time test. Women before perimenopause had highest values of Schirmer test in tear break up time test and were least symptomatic (OSDI questionnaire).
CONCLUSIONS: Our study showed that women after menopause have drier eyes then women before perimenopause.

SONDIRANJE PRI DISFUNKCIJI MEIBOMOVIH ŽLEZ
MEIBOMIAN GLAND PROBING FOR OBSTRUCTIVE DYSFUNCTION

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NAMEN: bolezen Meibomovih žlez (MGD) je najpogostejši vzrok suhega očesa in je velik iziv za terapijo. S pomočjo klasične terapije pogosto ni trajnih izboljšanj bolezni. Sondiranje Meibomovih žlez je nova kirurška tehnika v terapiji pacientov s kronično MGD in posledično suhim očesom.
METODA: Sondiranje se lahko opravi na biomikroskopu ali v operacijski sobi pod mikroskopom. S pomočjo posebnih kanil za enkratno uporabo, ki so različnih dolžin, sondiramo intraduktalni del Meibomovih žlez. Tako dosežemo hitro in dolgotrajno izboljšanje znakov vnetja.
REZULTATI: Zmanjšanje simptomov se pojavi takoj po sondiranju pri večini pacietov.
ZAKLJUČEK: Postopek je relativno preprost, lahko ga izvajamo tudi brez operacijske dvorane in operacijskega mikroskopa. Je opcija v zdravljenju pacientov s kronično suhim očesom in MGD, ko kapljice in druga terapija niso zadostne.

PURPOSE: Meibomian gland disease (MGD) is the most common cause of dry eye and has been most challenging to treat. Traditional therapies failed to consistently provide effective long-term results. Intraductal Meibomian gland probing is a new surgical option for patients with chronically MGD and dry eye.
METHODS: The procedure is performed at slit lamp or in the operating room. By using disposable cannulas of various lengths for probing of intraductal Meibomain glands we provide quick and lasting relief from inflammation symptoms.
RESULTS: Immediately post probing an improvement of symptoms is seen in most of the patients
CONCLUSIONS: The procedure is easy to perform. There is no need for the operating room or some special equipment. It could be an option for chronic dry eye and MGD patient when meds are not enough.

Na povabilo družbe / Invited by Thea

TREHALOZA – SODOBNI PRISTOP K ZAŠČITI POVRŠINE SUHEGA OČESA
TREHALOSE – MODERN APPROCH TO PROTECTION OF THE DRY EYE

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Bolezen suhega očesa prizadene 5–34 % populacije. Gre za kompleksno bolezen očesne površine, ki vodi do nestabilnega solznega filma, elektrolitskega neravnovesja, neravnovesja proteinov, mucinov, trajne okvare roženičnih in vezničnih epitelijskih celic ter živčnih končičev.
Različni vzroki suhega očesa potrebujejo različne vrste zdravljenja; zdravimo nestabilnost solznega filma, hiperozmolarnost, apoptozo in vnetje oziroma kombinacijo vsega naštetega.
V zadnjem času je najbolj izpostavljena hiperozmolarnost kot osrednji dogodek v patologiji suhega očesa. Trehaloza je naravni ozmoprotektor, ki preide v celico, obnovi celični volumen in tako stabilizira proteine ter membranske lipide v celici.

Dry eye disease affects 5–34% of the population. It is a complex disease of the eye surface, which leads to unstable tear film, electrolyte imbalance, imbalance of protiens, mucins and permanent damage to the corneal and conjunctival epithelial cells and nerve endings .
Various causes of dry eye need different types of treatment: we can treat instability of tear film, hyperosmolarity, apoptosis and inflammation or any combination of these.
Recently, the most exposed is hyperosmolarity as a central event in the pathology of dry eye. Trehalose is a naturally occurring osmoprotector that passes into the cell, reconstructa the cell volume and thus stabilises cell proteins and membrane lipids.

Na povabilo družbe / Invited by Optimed

NOVI MATERIALI IN DIZAJNI KONTAKTNIH LEČ
NEW CONTACT LENS MATERIALS AND DESIGNS

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V zadnjih dveh letih je prišlo do precejšnjega napredka pri materialih kontaktnih leč. Na trg so prišle leče ***SiH*** z biomimetičnim hidrogelskim ovojem, ki močno zvečajo udobje nošenja kontaktnih leč, in individualne, stružene kontaktne leče ***SiH***. Novi so tudi nekateri dizajni, recimo ***RoseK Soft***, in pa pakiranje brez blistra in saline, ***Miru 1-day***.
Pogledali bomo še, kako vsebnost vode in pogosto pozabljeni parameter, modulus, vplivata na lastnosti kontaktnih leč ***SiH***.

In the last couple of years we have experienced significant development in contact lens materials. ***SiH*** lenses with a biomimetic hydrogel coating, which vastly improves the wearing comfort, have been launched. So have individually made, lathe-cut ***SiH*** lenses. There are also some new designs, like ***RoseK Soft*** and innovative new packaging without blister and saline, ***Miru 1-day***.
We will also show how water content and the frequently overlooked parameter, modulus, affect the properties of ***SiH*** contact lenses.

MREŽNICA I
RETINA I

Moderatorici / Moderators: POLONA JAKI MEKJAVIĆ, NATAŠA VIDOVIĆ VALENTINČIČ

IDIOPATSKA TELANGIEKTAZIJA OB CENTRALNI FOVEI MREŽNICE
IDIOPATHIC JUXTAFOVEAL RETINAL TELANGIECTASIA

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PURPOSE: A 57-year-old female presented with decreased vision and a central scotoma OD for the past 6 and OL 2 years, which has been getting slowly but progressively worse.
METHODS: A case report.
RESULTS: Dilated fundus exam: The optic nerves have a cup-to-disc ratio of 0.3 OU. The macula of both eyes have a greyish sheen with superficial crystals. Fluorescein angiography (FA) demonstrates telangiectatic vessels surrounding the fovea more prominent nasally DO and temporally LO with leakage OU.
CONCLUSIONS: A group of retinal disorders first described by Gass and Oyakawa in 1982, characterized by incompetence, ectasia and microaneurysmal and saccular dilation of capillaries in the juxtafoveal area in one or both eyes idiopathic perifoveal retinal telangiectasia.

TELANGIEKTAZIJA RUMENE PEGE TIP 2
MACULAR TELANGIECTASIA TYPE 2

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Macular telangiectasia leads to abnormalities of capillaries of the fovea or perifoveal region. Idiopathic macualr teleangiectasia is usually divided into 3 main groups. The most common form of the three types is Type 2. Macular telangiectasia type 2 (MacTel 2) is acquired and bilateral. Usually found in middle-aged or older patients. In this paper I will show classic case off MacTel 2 as well as some early and late cases that sometimes are the difficult to recognize. Differential diagnosis of retinal capillary telangiectasia includes branch retinal vein occlusion, diabetic retinopathy, and in cases of neovascularization, age-related macular degeneration. Unfortunately, there is no clear therapy to slow the progression and treatment of the disease.

VIDNA OSTRINA PO ZDRAVLJENJU NEOVASKULARNE STAROSTNE DEGENERACIJE MAKULE Z ANTI-VEGF JE ODVISNA OD ZAČETNE VIDNE OSTRINE

VISUAL ACUITY AFTER ANTI-VEGF TREATMENT OF NEOVASCULAR AGE RELATED MACULAR DEGENERATION DEPENDS ON BASELINE VISUAL ACUITY

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NAMEN: Prikazati pomembnost začetne vidne ostrine (VO) za dosego boljše VO po enem letu zdravljenja neovaskularne starostne degeneracije makule (nSDM) z zdravili anti-VEGF.
METODE: Retrospektivna analiza zaporednih vključenih bolnikov v zdravljenje nSDM z bevacizumabom in/ali ranibizumabom med 1. januarjem in 30. junijem v letu 2007 (skupina A) ali v istem obdobju v letu 2012 (skupina B) na Očesni kliniki v Ljubljani. Na začetku zdravljenja so imeli vsi aktivno nSDM, vse smo spremljali vsaj eno leto.
REZULTATI: V skupini A je bilo 75 bolnikov (38,7 % moških; povprečna starost 77,9 ± 5,9 let) in v skupini B 79 bolnikov (38,0 % moških; povprečna starost 78,2 ± 8,8 let). Začetna povprečna VO v skupini A je bila 48,8 ± 18,5 črk, 13,3 % bolnikov je imelo začetno VO ≤ 29 črk in 50,7 % jih je imelo začetno VO ≥ 50 črk. V skupini B je bila začetna VO 58,5 ± 1,8 črk, ni pa bilo v tej skupini bolnikov, ki bi imeli začetno VO ≤ 29 črk, medtem ko je imelo 73,4 % bolnikov začetno VO ≥ 50 črk. V skupini A so bolniki prejeli v povprečju 4,8 ± 1,5 injekcij in v skupini B 6,3 ± 2,1 injekcij ($p < 0,05$). Eno leto po začetku zdravljenja se je v skupini A izboljšala povprečna VO za 2,8 črk, iz 48,8 ± 18,5 na 51,6 ± 18,5, v skupini B pa za 2,3 črke, iz 58,5 ± 11,8 na 60,9 ± 16,5 ($p = 0,001$). Število bolnikov z bralno VO (≥ 60 črk) se je zvečalo po enem letu zdravljenja s 16 na 21 v skupini A in z 28 na 37 v skupini B.
ZAKLJUČEK: Eno leto po zdravljenju nSDM z anti-VEGF je bila VA višja v letu 2012 (skupina B), ker je bila začetna VO višja, čeprav so v povprečju pridobili manj črk. Več bolnikov je tudi obdržalo ali doseglo bralno VO. Z rezultati potrjujemo pomembnost zgodnje diagnostike nSDM ter hitrega in intenzivnega zdravljenja z anti-VEGF injekcijami.

PURPOSE: To evaluate importance of baseline visual acuity (VA) of patients treated with anti-VEGF due to neovascular age related macular degeneration (nAMD) of VA after one year of treatment.
METHODS: Retrospective analysis of consecutive patients who started treatment with bevacizumab and/or ranibizumab due to nAMD between January 1 and June 30 in 2007 (group A), or in the same period in 2012 (group B) at the Eye hospital of UMC Ljubljana. At the beginning of treatment they all had active nAMD and were followed-up for at least one year.
RESULTS: Group A comprised 75 patients (38.7% men; age 77.9 ± 5.9 years), and group B 79 patients (38.0% men; age 78.2 ± 8.8 years). Baseline mean VA in group A was 48.8 ± 18.5 letters, 13.3% of patients had baseline VA ≤ 29 letters, and 50.7% had baseline VA ≥ 50 letters. In group B baseline VA was 58.5 ± 11.8, there were no patients with baseline VA values ≤ 29 letters, and 73.4% had baseline VA ≥ 50 letters. Group A received 4.8 ± 1.5 injections, and group B 6.3 ± 2.1 injections ($p < 0.05$).
After one year of treatment VA improved in group A by 2.8 letters, from 48.8 ± 18.5 to 51.6 ± 18.5, and in group B by 2.3 letters, from 58.5 ± 11.8 to 60.9 ± 16.5 ($p = 0.001$). The number of patients with reading VA (≥ 60 letters) increased after one year from 16 to 21 in group A, and from 28 to 37 in group B.
CONCLUSIONS: One year treatment of nAMD with anti-VEGF resulted in higher final VA in 2012 (group B), because VA at the beginning of the treatment was higher, despite lower gain of letters. More patients achieved or maintained their reading ability. This further supports the importance of early diagnosis of the disease and the need for prompt and intensive treatment.

KAKO PREPOZNATI BOLEZNI, KI SPOMINJAJO NA SUHO ALI VLAŽNO OBLIKO STAROSTNE DEGENERACIJE RUMENE PEGE?

HOW TO SPOT DISEASES THAT MIMIC DRY OR WET AGE RELATED MACULAR DEGENERATION?

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NAMEN: Starostna degeneracija makule (SDM) se klinično najpogosteje pokaže po 50. letu starosti. SDM je mogoče razdeliti v dve veliki podskupini: suho in vlažno obliko SDM. V prvem delu so prikazani primeri bolnikov z boleznimi, ki spominjajo na suho obliko SDM. V drugem delu so prikazani primeri bolnikov z boleznimi, ki spominjajo na vlažno obliko SDM, ter namigi kako razlikovati te bolezni od SDM.
METODE: Raziskava serije primerov bolnikov z različnimi boleznimi, ki spominjajo na SDM.
REZULTATI: Podobno klinično sliko kot suha oblika SDM imajo različne degenerativne bolezni mrežnice in distrofije RPE, pri katerih pride do kopičenja pigmenta ali lipofuscina. Pri razlikovanju so nam v pomoč avtofluorescenca (AF), družinska anamneza, včasih pa so potrebni tudi genetski testi. Predstavljeni so klinični primeri bolnikov s "pattern" distrofijo retinalnega pigmentnega epitelija (RPE), pozno obliko Stargardtove bolezni, centralno areolarno horoidalno distrofijo in foveomakularno viteliformno distrofijo z nastopom v odrasli dobi. Sekundarna CNV se lahko redko pojavi pri centralni serozni horioretinopatij in "pattern" distrofiji RPE. Pojavi se lahko tudi pri patološki kratkovidnosti, po poškodbi, pri angioidnih strijah ter različnih vnetnih boleznih, kot so idiopatski multifokalni horoiditis, punktatna notranja horoidopatija (PIC), serpiginozni horioretinitis in toksoplazmoza. Te bolezni običajno prizadenejo mlade, sicer zdrave ljudi. Pri starejših je lahko sekundarna CNV povezana tudi s tuberkuloznim horoidalnim granulomom. Horoidalni tumorji lahko prav tako spominjajo na vlažno obliko SDM. Predstavljeni so zanimivi klinični primeri bolnikov, kjer so nam AF, EDI-OCT (*angl. enhanced deep imaging-OCT*), fluoresceinska in indocianinska angiografija v pomoč pri razlikovanju od vlažne oblike SDM.
ZAKLJUČEK: Pri razlikovanju bolezni, ki posnemajo SDM, so nam v pomoč: starost nastopa bolezni, družinska anamneza, epidemiološki podatki, klinični znaki vnetja, vrsta AF, ter angiografske značilnosti.

PURPOSE: Age-related macular degenerative (ARMD) is most often clinically apparent after 50 years of age. There are currently different classifications for ARMD, and the condition can be divided into two large subcategories: dry and wet ARMD. This first part of case series reviews the conditions that mimic dry AMD and that may be difficult to differentiate from ARMD on a strictly clinical basis. The second part reviews cases that share characteristics of wet ARMD, and offers clues to make the correct diagnoses.
METHODS: A case series study of patients with different diseases that mimic AMD.
RESULTS: Variable degenerative and dystrophic diseases of the retina and RPE, in which pigmentary mobilization or lipofuscin accumulation are major findings, share fundamental clinical features with the dry form of the ARMD. Diagnostic tools such as fundus autofluorescence (AF), family history and sometimes even genetic tests are required to differentiate diseases that mimic dry ARMD. Peculiar clinical cases of patients with pattern dystrophies, late onset Stargardt's disease, central areolar choroidal dystrophy and adult onset foveomacular vitelliform dystrophy are presented. Secondary CNV may occur rarely in central serous chorioretinopathy and pattern dystrophies. It can also occur in pathologic myopia, trauma, angioid streaks and different chorioretinal diseases, including chorioretinitis and punctate inner choroidopathy. These conditions frequently affect young, otherwise healthy patients. In elderly patients secondary CNV can be associated with tubercular choroidal granuloma. Choroidal tumours can also mimic wet AMD. Challenging cases of patients are presented where AF, enhanced deep imaging OCT (EDI-OCT), fluorescein and indocyanine green angiography help in making the correct diagnosis.
CONCLUSIONS: Age of onset, family history, epidemiological data, clinical signs of inflammation, type of AF and angiographic features help in distinguishing diseases that mimic AMD.

POSTOPNO IZBOLJŠEVANJE MREŽNICE PRI BOLNIKIH, KI SO ZARADI MAKULARNEGA EDEMA PO ZAPORI CENTRALNE VENE MREŽNICE ZDRAVLJENI Z BEVACIZUMABOM

GRADUAL IMPROVEMENT OF RETINA TREATED WITH BAVACIZUMAB IN PATIENTS WITH MACULAR EDEMA SECONDARY TO CRVO

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NAMEN: Ugotoviti enoletni vpliv zdravljenja zapore centralne mrežnične vene (CRVO) z intravitrealnim bevacizumabom (IVB). Učinek zdravljenja smo spremljali tudi v odvisnosti od stanja prekrvitve mrežnice, prikazanega s fluoresceinsko angiografijo (FA).
METODE: Morfološki učinek zdravljenja smo sledili s pomočjo FA, CRT in TMV, merjenih s pomočjo optične koherentne tomografije (OCT). Funkcionalni učinek zdravljenja smo sledili s pomočjo VO, MS in treh elektrofizioloških preiskav: maksimalnim odzivom skotopične ERG, slikovno elektriretinografijo in fotopičnim negativnim odzivom. Vsi bolniki so v razmiku od 4 do 6 tednov prejeli 4 začetne injekcije IVB, v nadaljevanju pa na 4 do 6 tednov, v kolikor je bil na OCT ugotovljen makularni edem.
REZULTATI: Ugotovili smo hitro morfološko izboljšanje makule in hitro funkcionalno izboljšanje makule in paramakularnega dela ter zunanjih plasti mrežnic. Funkcija notranjih plasti celotne mrežnice se je izboljšala s časovnim zamikom. Z elektroretinografskimi kazalci smo pri neishemični podskupini ugotovili izboljšanje centralne in periferne mrežnice, medtem ko se je pri ishemični podskupini izboljšala le funkcija makule.
ZAKLJUČEK: Na podlagi naših rezultatov se pri celotni skupini nakazuje postopno izboljševanje funkcije mrežnice; po plasteh od zunanjih proti notranjim in od centralnega dela mrežnice proti periferiji. Pri ishemičnih podskupini je morfološko izboljšanje primerljivo s tistim pri neishemični, funkconalno pa je bolj počasno in zajema le centralni del mrežnice.

PURPOSE: To investigate the long-term effect of treatment of central retinal vein occlusion with intravitreal bevacizumab (IVB) after one year. The effect of treatment has also been studied depending on the fluorescein angiography (FA) based perfusion status of the retina.
METHODS: Morphological effect was followed with FA, CRT and TMV obtained with optical cocherence tomography (OCT), whereas functional with BCVA, mean sensitivity (MS) and 3 electrophysiological tests: combined rod-cone response of the standard full-field ERG (DA 3.0 ERG), pattern ERG (PERG) and photopic negative response (PhNR). All patients received initial loading dose of 4 injections of IVB separated by 4–6 weeks, after that treatment was continued in case of OCT-documented persistent or recurrent macular edema (ME).
RESULTS: An early morphological improvement of macular region and early functional improvement of macular and paramacular region was observed as well as outer retinal layers. The improvement of inner retinal layers was delayed. In the non-ischemic subgroup we observed the improvement of central and peripheral retina. In the ischemic subgroup, however, only the function of the central retina improved substantially.
CONCLUSIONS: According to our data a gradual functional and morphological improvement of the retina was observed; indicating improvement first in the outer than in the inner retinal layers, and also from the central toward the peripheral retina. Morphological improvement of ischemic subgroup was comparable to improvement in non-ischemic subgroup, functional improvement, however, was slower and evident only in the central part.

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ZDRAVLJENJE *SDM* Z AFLIBERCEPTOM V SLOVENIJI – DVELETNE IZKUŠNJE
TREATMENT OF *AMD* WITH AFLIBERCEPT IN SLOVENIA – A TWO YEARS EXPERIENCE

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IZHODIŠČE: Aflibercept v Sloveniji uporabljamo od jeseni 2013.
NAMEN: Prikazan bo retrospektivni pregled učinka zdravljenja bolnikov, ki so bili zaradi nSDM zdravljeni z afliberceptom v štirih centrih v Sloveniji: Očesna klinika v Ljubljani, Očesni oddelek SD Šempeter pri Novi Gorici, Očesni oddelek SB Novo mesto in Očesni oddelek SB Celje.
METODE: Vsi bolniki, vključeni v analizo, so bili zaporedno vključeni v zdravljenje, na začetku zdravljenja so imeli aktivno nSDM, zdravljenje z afliberceptom je bilo za njih prvo zdravljenje nSDM (t.i. *treatment naïve*). Opazovali smo spremembo vidne ostrine (VO) po enem in po dveh letih zdravljenja, število apliciranih injekcij za posameznega bolnika in neželene učinke.
REZULTATI: Rezultate naše analize smo primerjali z rezultati raziskave VIEW in s podatki iz klinične prakse drugih klinik.
ZAKLJUČEK: Slovenske izkušnje z zdravilom aflibercept za zdravljenje nSDM, tako enoletne kot dvoletne, so dobre. Aflibercept je učinkovito zdravilo za različne vrste nSDM, bolniki zdravilo dobro prenašajo in do sedaj smo imeli malo zapletov. Zdravilo aflibercept sedaj uporabljamo za zdravljenje nSDM v vseh sedmih centrih v Sloveniji.

Aflibercept has been used in Slovenia since autumn 2013. A retrospective analysis of treatment effects will be shown for the patients who have received aflibercept treatment for nAMD in four centres in Slovenia: Department of Ophthalmology, University Medical Centre Ljubljana, Department of Ophthalmology, Dr. Franc Derganc General Hospital Nova Gorica, Department of Ophtalmology, General Hospital Novo mesto and Department of Ophthalmology, General Hospital Celje. All the patients included in the analysis have been sequentially included in the treatment; at the start of the treatment they had active nAMD and and they were all treatment naïve. We observed changes in visual acuity (VA) after a year, after a year and a half, and after two years of treatment, as well as the number of the injections applied in each patient and adverse effects. The results of our analysis were compared with the results of VIEW study and the real-life data from other clinical departments.
Slovenian experience with aflibercept in nAMD treatment has been good in both the one-year period and the two-year period. Aflibercept is efficient therapy for various types of nAMD, it is well tolerated and there have been only a few complications so far. Aflibercept is now used to treat nAMD in all seven centres in Slovenia.

Na povabilo družbe / Invited by Novartis

DOLGOROČNI IZIDI ZDRAVLJENJA *SDM* IN *DME* Z ZDRAVILI ANTI-*VEGF*

LONG-TERM OUTCOMES OF ANTI-*VEGF* THERAPY FOR *AMD* AND *DME*

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REZULTATI ZDRAVLJENJA NEOVASKULARNE *SDM* Z ZDRAVILI ANTI-*VEGF* PRI BOLNIKIH, KI SO BILI SPREMLJANI 5 LET

OUTCOMES OF NEOVASCULAR TREATMENT OF *AMD* WITH ANTI-*VEGF* MEDICINES IN PATIENTS FOLLOWED-UP FOR 5 YEARS

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Zdravljenje neovaskularne starostne degeneracije makule (nSDM) z zdravili anti-VEGF je dramatično spremenilo potek te bolezni. Če nSDM prepustimo naravnemu poteku bolezni, se pri vseh bolnikih po enem letu vid pomembno poslabša, za več kot tri vrstice, in vodi v funkcionalno slepoto. S pravočasno in pravilno uporabo zdravil anti-VEGF pa lahko vid ohranimo, pri nekaterih bolnikih celo izboljšamo. Z uporabo zdravil anti-VEGF se je v nekaterih državah delež slepote zaradi nSDM zmanjšal za 50–60 %. Kljub temu pa dolgotrajni učinek zdravil anti-VEGF na vid ni pojasnjen. Pri spremljanju bolnikov z nSDM iz bazičnih kliničnih raziskav o učinkovitosti zdravil anti-VEGF, ***MARINA***, ***ANCHOR*** in ***HORIZON***, so ugotovili, da se je po sedmih letih pri tretjini bolnikov vidna ostrina poslabšala za 15 črk ali več, pri dveh tretjinah bolnikov je bila bolezen še vedno aktivna.
V vsakdanji klinični praksi so rezultati seveda lahko drugačni. Prikazali bomo rezultate zdravljenja tistih bolnikov, ki so bili na Očesni kliniki zdravljeni z zdravil anti-VEGF zaradi nSDM in spremljani vsaj štiri leta oz. pet let. Podrobneje bo predstavljena začetna klinična slika tistih bolnikov, pri katerih je še po štirih oz. petih letih ohranjena bralna vidna ostrina.

Introduction of anti-VEGF therapy dramatically changed the course of neovascular age related macular degeneration (nAMD). The natural course of nAMD leads to a significant reduction in visual acuity of more than three lines and ends with functional blindness. With timely and regular use of anti-VEGF visual function can be preserved, and in some cases improved. Introduction of anti-VEGF reduced legal blindness due to nAMD by 50–60% in some countries. Despite this, the long-term effect of anti-VEGF remains unresolved.
A 7-year follow-up of patients participating in the anti-VEGF clinical trials MARINA, ANCHOR and HORIZON, revealed that visual acuity was reduced by 15 letters (three lines) or more in one third of patients, and that in two third of patients the disease was still active.
In everyday clinical practice, the results could be different. Results of anti-VEGF treatment of nAMD patients, who were treated in the University Medical Center Ljubljana Eye Hospital and followed for at least four to five years, will be presented. In particular, baseline clinical picture of patients with good visual acuity after four and five years of treatment will be described.

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ZDRAVLJENJE Z OZURDEXOM® PRI UVEITISU
TREATMENT OF UVEITIS WITH OZURDEX®

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UVOD: Predstavitev naših izkušenj uporabe Ozurdexa® pri bolnikih z neinfekcijskim uveitisom.
METODE: Retrospektivni pregled dokumentacije.
REZULTATI: Sedem bolnikov (7 oči) z uveitisom je prejelo Ozurdex®. Spremljali smo jih od 1 meseca do 4 let. Beležili smo vidno ostrino, vnetnice v steklovini, očesni tlak in debelino mrežnice z optično koherentno tomografijo (OCT). Vidna ostrina se je popravila za več kot dve vrstici po Snellenu 5 bolnikom, pri vseh se je steklovinsko vnetje zmanjšalo, 3 po kriterijih SUN (Mednarodna skupina za nomenklaturo uveitisa). OCT je pokazal izboljšanje edema rumene pege pri vseh bolnikih. En bolnik je imel težave s povišanim očesnim tlakom, ki je odreagiral na konzervativno zdravljenje. Trije bolniki so potrebovali večkratno aplikacijo zdravila.
ZAKLJUČEK: Ozurdex® je ob rednem spremljanju in pravilno izbrani vrsti uveitisa varno in učinkovito zdravilo.

INTRODUCTION: Our experience with the use of Ozurdex® in patients with non-infectious uveitis.
METHODS: Retrospective review of documentation.
RESULTS: Seven patients (7 eyes) with uveitis received Ozurdex®. They were monitored from 1 month to 4 years. We recorded visual acuity, exudation in vitreous, intraocular pressure and retinal thickness by optical coherence tomography (OCT). Visual acuity improved for at least 2 lines of Snellen in 5 patients, vitreous exudation improved in 3 patients (Standardization of Uveitis Nomenclature Group – SUN criteria). OCT showed improvement in macular edema in all patients. One patient had problems with increased ocular pressure, which responded to conservative treatment. 3 patients required multiple applications of Ozurdex®.
CONCLUSION: Ozurdex® is a safe and effective drug for uveitis treatment. Proper indications had to be chosen and regular monitoring of side effects is required.

Na povabilo družbe / Invited by Allergan

ZDRAVLJENJE Z OZURDEXOM® PRI DIABETIČEM MAKULARNEM EDEMU

MANAGEMENT OF DIABETIC MACULAR EDEMA WITH OZURDEX®

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Diabetična retinopatija ima značilnosti subkliničnega kroničnega vnetja. Večja ekspresija vnetnih citokinov v mrežnici ter funkcionalne spremembe imunskih celic in tkivnih makrofagov porušijo krvno-mrežnično pregrado in privedejo do nastanka diabetičnega makularnega edema. Kortikosteroidi vplivajo na regulacijo vnetnih citokinov, stabilizirajo krvno-mrežnično pregrado, s posledičnim zmanjšanjem edema pa se lahko izboljša vid. Ugodne učinke kortikosteroidov v zdravljenju diabetičnega makularnega edema so ugotovili v večih raziskavah. Raziskava MEAD je potrdila, da je deksametazonski vsadek (Ozurdex®) učinkovit in varen za zdravljenje diabetičnega makularnega edema. Pri bolnikih, zdravljenih z Ozurdexom®, so dosegli statistično in klinično pomembno izboljšanje vidne ostrine s povprečno le 4 do 5 injekcijami vsadka v triletnem obdobju.

Diabetic retinopathy has features of chronic low-grade inflammation. Significant increases in pro-inflammatory cytokines within the retina and functional changes of immune cells and tissue macrophages lead to blood-retinal barrier breakdown and consequently to the development of diabetic macular edema. Corticosteroids interfere with the regulation of pro-inflammatory cytokines, stabilize the blood-retinal barrier and consequently help to reduce macular edema and improve vision. Several studies showed favourable results in treating diabetic macular edema with corticosteroids. ***MEAD*** Study demonstrated efficacy and favourable safety profile of dexamethason implant (Ozurdex®) in the treatment of diabetic macular edema. With an average of only 4 to 5 injections of over 3 years, patients treated with Ozurdex® achieved statistically significant and clinically meaningful visual improvements.

Na povabilo Združenja oftalmologov Slovenije / Invited by Slovenian Society of Ophthalmology

OPTIČNA KOHERENTNA ANGIOGRAFIJA: KAKO TOLMAČITI SLIKE

OCT-ANGIOGRAPHY: HOW TO INTERPRETE THE IMAGES

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VLOGA *OCT*-ANGIOGRAFIJE V DIAGNOSTIKI SUBRETINALNE NEOVASKULARIZACIJE PRI BOLNIKIH Z MAKULARNIMI TELANGIEKTAZIJAMI TIPA 2

OCT-ANGIOGRAPHY IN DIAGNOSTICS OF SUBRETINAL NEOVASCULARIZATION IN PATIENTS WITH MACULAR TELANGIECTASIA TYPE 2

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NAMEN: OCT-angiografija je nova diagnostična slikovna metoda, ki veliko obeta. Je neinvazivna, hitra metoda, s katero prikažemo retinalno in horoidalno žilje. Istočasno nam prikaže strukturne spremembe in pretok krvi. Z OCT in fluoresceinsko angiografijo včasih težko opredelimo subretinalno neovaskularizacijo pri bolniku z makularnimi telangiektazijami tipa 2. Z uporabo OCT-angiografije smo želeli natančneje opredeliti spremembe v makuli bolnikov z makularnimi telangiektazijami tipa 2.

METODE: Pri dveh bolnikih z makularnimi telangiektazijami tipa 2 smo opravili slikovno diagnostiko: OCT, fluoresceinsko angiografijo in OCT-angiografijo.

REZULTATI: OCT-angiografija nam jasno prikaže subretinalno neovaskularizacijo. Velikost in lokacijo subretinalne neovaskularizacije lahko z OCT-angiografijo boljše opredelimo kot s fluoresceinsko angiografijo.

ZAKLJUČEK: OCT-angiografija nam omogoča natančno opredelitev velikosti in lokacije subretinalne neovaskularizacije v makuli bolnikov z makularnimi telangiektazijami tipa 2. Z uporabo OCT-angiografije lahko natančneje ocenimo stanje in tako lažje načrtujemo zdravljenje.

PURPOSE: OCT-angiography is a new diagnostic method with great potential. It is non-invasive, fast method for visualizing retinal and choroidal vasculature. It shows structural and blood flow information at the same time. Sometimes it is difficult to diagnose subretinal neovascularization in a patient with macular telangiectasia type 2. We used OCT-angiography as an additional method for evaluation of macular changes in patients with macular telangiectasia type 2.

METHODS: OCT, fluorescein angiography and OCT-angiography were done in two patients with macular telangiectasia type 2 for diagnostic evaluation.

RESULTS: Subretinal neovascularization can be clearly seen with OCT-angiography. The size and location of subretinal neovascularization can be better defined with OCT-angiography in comparison with fluorescein angiography.

CONCLUSIONS: OCT-angiography provides accurate size and location of subretinal neovascularization in patients with macular telangiectasia type 2. Better evaluation of disease changes and better management of these patients is possible with the use of OCT-angiography.

POVEZAVA MED *OCT*-SPREMEMBAMI IN USPEŠNOSTJO ANTI-*VEGF* ZDRAVLJENJA PRI BOLNIKIH Z DIABETIČNIM MAKULARNIM EDEMOM

CORRELATION OF OCT CHANGES WITH ANTI-*VEGF* TREATMENT OUTCOMES IN PATIENTS WITH DIABETIC MACULAR EDEMA

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NAMEN: Pri bolnikih z diabetičnim makularnim edemom (DME) prepoznati morfološke spremembe, vidne z optično koherentno tomografijo (OCT), ki imajo napovedno vrednost za uspešnost zdravljenja z anti-VEGF zdravili.
METODE: Retrospektivno smo pregledali dokumentacijo 18 bolnikov (20 oči) z DME, ki so prejeli 3 injekcije ranibizumaba. Zabeležili smo začetno najboljšo korigirano vidno ostrino (VA0) in najboljšo korigirano vidno ostrino po 3 injekcijah ranibizumaba (VA3). Z analizo OCT-slik smo določili morfološki tip edema, debelino mrežnice v centralnem podpolju, volumen mrežnice v centralnem podpolju, število hiperreflektivnih vključkov, ohranjenost zunanje membrane limitans in elipsoidne cone.
REZULTATI: Povprečna VA0 je bila 60,13 ± 11,08 črk, povprečna VA3 pa 64,74 ± 12,66 črk. Difuzni edem smo zaznali v dveh očeh (10 %), cistični edem v 4 očeh (20 %), 14 oči je imelo tudi serozni odstop (70 %). VA3 je negativno korelirala s številom hipereflektivnih vključkov (povprečno število pred začetkom zdravljenja: 21,34 ± 4,43) ter prekinitvami v zunanji membrani limitans in elipsoidni coni ($p < 0,05$).
ZAKLJUČEK: Večje število hiperreflektivnih vključkov, prekinjena zunanja membrana limitans in prekinjena elipsoidna cona so neugodni napovedni dejavniki za izboljšanje vidne ostrine pri bolnikih z DME, ki jih zdravimo z anti-VEGF zdravili.

PURPOSE: To identify optical coherence tomographic (OCT) morphologic changes in patients with diabetic macular edema (DME) that could be predictive for anti-VEGF treatment outcomes.
METHODS: Retrospective data analysis of 18 patients (20 eyes) with DME who received three injections of ranibizumab. Best corrected visual acuity before treatment (VA0) and best corrected visual acuity after three ranibizumab injections (VA3) were recorded. Morphologic type of edema, central subfield retinal thickness, central subfield retinal volume, the number of hyperreflective foci, external limiting membrane disruption and ellipsoid zone disruption were recorded based on OCT image analysis.
RESULTS: Mean VA0 was 60.13 ± 11.08 letters, mean VA3 64.74 ± 12.66 letters. Diffuse edema was identified in 2 eyes (10%), cystic edema in 4 eyes (20%), 14 eyes had also serous retinal detachment (70%). VA3 negatively correlated with the number of hyperreflective foci (mean number before treatment: 21.34 ± 4.43) and disruption of external limiting membrane and ellipsoid zone ($p < 0.05$).
CONCLUSIONS: Higher number of hyperreflective foci, longer disruption of external limiting membrane and ellipsoid zone are negative predictive factors for visual acuity improvement after anti-VEGF treatment in patients with DME.

MIKROVASKULARNE SPREMEMBE IN FOVEALNA AVASKULARNA CONA PRI BOLNIKIH S SLADKORNO BOLEZNIJO, VIDNE S *OCT*-ANGIOGRAFIJO *SWEPT-SOURCE*

MICROVASCULAR CHANGES AND FOVEAL AVASCULAR ZONE IN PATIENTS WITH DIABETES USING *SWEPT-SOURCE* OPTICAL COHERENCE TOMOGRAPHY

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NAMEN: *Swept-source* OCT-angiografija (OCTA) je novejša neinvazivna slikovna tehnika, ki izvira iz optične koherentne tomografije (OCT). Z analizo velikega števila OCT slik prikaže gibanje znotraj žil in s tem, brez uporabe barvila, posredno pretok v žilah mrežnice in kapilarnega pleteža žilnice. Namen prispevka je ocena mikrovaskularnih sprememb v makuli pri bolnikih s sladkorno boleznijo z uporabo OCTA.
METODE: Prospektivna raziskava in analiza OCTA slik makule (DRI OCT *Triton Plus, Topcon*) pri bolnikih s sladkorno boleznijo, ki so bili pregledani na Očesnem oddelku SB Nova Gorica v trimesečnem obdobju v začetku leta 2016 in primerjava z OCTA-slikami makule primerjalne skupine starostno primerljivih zdravih oči.
REZULTATI: V analizi OCTA-slik makul smo opazovali mikrovaskularne spremembe, kot so zapore kapilar, mikroanevrizme, zvijuganost žil in venske nepravilnosti. Izmerili in ocenjevali smo velikost in nepravilnost fovealne avaskularne cone (FAZ) v površinskem in globokem kapilarnem pletežu. Nepravilnosti FAZ in zapore kapilar so bile pogostejše pri bolnikih s sladkorno boleznijo kot v primerjalni skupini. FAZ je bila zvečana pri bolnikih s sladkorno boleznijo, ne glede na diabetičneo retinopatijo. Mikroanevrizme in žilne nepravilnosti smo bile našli v obeh skupinah. Pri interpretaciji OCTA-slik moramo biti pozorni na artefakte in te slike izključiti iz analize.
ZAKLJUČEK: OCTA je novejša slikovna diagnostična v oftalmologiji. Obseg in pomen klinične uporabnosti te metode se še ugotavljata, o njeni razsežnosti pa priča eksponentno naraščanje števila objav znanstvenih člankov v zadnjem letu. Oftalmologi se moramo še naučiti interpretirati OCTA, saj je le-ta drugačna od interpretacije slik klasične angiografije. OCTA prikaže mrežnične mikrovaskularne spremembe v makuli, ki niso vidne pri kliničnem pregledu očesnega ozadja bolnikov s sladkorno boleznijo, in sicer še pred pojavom retinopatije. OCTA bi verjetno lahko bila uporabna pri odkrivanju bolnikov, ki so bolj podvrženi k nastanku diabetične retinopatije ali makulopatije.

PURPOSE: Swept-source optical coherence tomography angiography (OCTA) is a new non-invasive imaging technique, originating from optical coherence tomography (OCT). Through the analysis of a great number of OCT images, movement in the vasculature is recorded without a dye and with that, the flow in the retinal and choriocapillary vessels. This study aims at evaluating macular microvascular changes in patients with *diabetes mellitus* using OCTA.
METHODS: Prospective observational study of patients with *diabetes mellitus* and control age-matched healthy subjects that received OCTA imaging (DRI OCT *Triton Plus, Topcon*) in a three month period in the beginning of 2016 at the Eye department of General Hospital Nova Gorica.
RESULTS: Microvascular changes in the macula were evaluated: capillary nonperfusion, microaneurysms, vessel beading and tortuosity. Foveal avascular zone (FAZ), its size and irregularity, were measured and evaluated in the superficial and deep plexus layers. FAZ remodelling and capillary non-perfusion was seen more often in diabetic than control eyes. Eyes of diabetic patients showed FAZ enlargement compared with the control group, regardless of the presence of retinopathy. Microaneurysms, venous beading and tortuous vessels were seen in both groups. Interpretation of OCTA can be affected by imaging artefacts. Therefore, those images have to be excluded from the analysis.

CONCLUSIONS: OCTA is a new method of ophthalmic imaging. The extent of its clinical applicability is yet to be determined in spite of the exponential growth of scientific publications in the last year. Interpretation of OCTA images differs from classic angiography. Ophthalmologists have to acquire knowledge and skills of OCTA interpretation. OCTA is able to image retinal microvascular changes in the macula that are not visible on clinical examination of diabetic eyes, even before retinopathy develops. OCTA could be useful to detect diabetic eyes at risk of developing diabetic retinopathy/maculopathy.

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EYLEA® V ZDRAVLJENJU DIABETIČNEGA MAKULARNEGA EDEMA

EYLEA® IN THE TREATMENT OF DIABETIC MACULAR EDEMA

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Diabetični makularni edem (DME) v večini primerov nastane kot posledica porušenja krvnomrežnične pregrade zaradi višjih ravni žilnega endotelijskega dejavnika (VEGF) in drugih dejavnikov vnetja v očesu bolnika z diabetično retinopatijo. Zdravila anti-VEGF zavirajo učinke VEGF in posledično zmanjšajo edem v rumeni pegi, z zmanjšanjem edema pa se vid lahko izboljša. Aflibercept (Eylea®) je rekombinantni fuzijski protein, ki veže VEGF in placentni rastni dejavnik (PlGF) z večjo afiniteto kot njihovi naravni receptorji, zato lahko zavira vezavo in aktivacijo sorodnih receptorjev. Tako VEGF kot PlGF sta pomembna v patogenezi DME, oba vplivata na prepustnost žilja in delujeta proangiogeno. Ključni raziskavi, ki sta utemeljili učinkovitost in varnost aflibercepta za zdravljenje DME, sta VISTA in VIVID. Rezultati teh raziskavah so pokazali, da se je vidna ostrina pri bolnikih, zdravljenih z afliberceptom, po 52 tednih v povprečju izboljšala za 10,5–12,5 črk. Pri primerjalni skupini, ki je bila zdravljena z lasersko fotokoagulacijo, je bilo izboljšanje vidne ostrine po 52 tednih le 0,3–1,2 črke. Tudi po 100 tednih zdravljenja je bilo povprečno izboljšanje vidne ostrine pri bolnikih, zdravljenih z afliberceptom, še vedno 9,4–11,5 črk boljše od začetne vidne ostrine, pri bolnikih, zdravljenih z lasersko fotokoagulacijo, pa je bilo izboljšanje vidne ostrine le za 0,7–0,9 črke. Pri več kot tretjini bolnikov, ki so bili zdravljeni z afliberceptom, se je vidna ostrina izboljšala za več kot tri vrstice. Naše izkušnje z afliberceptom v zdravljenju bolnikov z DME so skladne z rezultati omenjenih raziskav.

Diabetic macular edema (DME) in majority of cases results from blood-retina barrier breakdown due to higher levels of vascular endothelial growth factor (VEGF) and other cytokines in the eye of a patient with diabetic retinopathy. Anti-VEGF drugs through inhibition of VEGF reduce macular edema and improve visual acuity. Aflibercept (Eylea®) is a recombinant fusion protein which inhibits the activity of VEGF and placental growth factor (PlGF). Both VEGF and PlGF have a role in the pathogenesis of DME by increasing vascular permeability. They also stimulate angiogenesis. Main studies that demonstrated efficacy and safety of aflibercept in DME treatment are VIVID and VISTA. Mean visual acuity gains from baseline to week 52 in groups treated with aflibercept versus the laser group were 10,5–12,5 letters versus 0,3–1,2 letters in these studies. Mean visual acuity gains from baseline to week 100 in groups treated with aflibercept versus the laser group were 9,4–11,5 letters versus 0,7–0,9 letters. More than one third of patients treated with aflibercept gained more than 15 letters from baseline at week 100. Our results in treating DME patients with aflibercept are in concordance with the results of these studies.

MREŽNICA II
RETINA II

Moderatorja / Moderators: MOJCA URBANČIČ, KAJO BUĆAN

GENETSKO OZADJE NENAVADNE OBLIKE ZAPORE MREŽNIČNE VENE
UNUSUAL FORM OF THE RETINAL VEIN OCCLUSION – GENETIC BACKGROUND

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PURPOSE: To investigate the cause of hemicentral retinal vein occlusion and branch retinal vein occlusion in the same patients at two different times – literature review and case reports.
METHODS: To show cases of occlusion of the branch retinal vein and subsequent hemicentral retinal vein occlusion with the presentation of test results taken at unusual and specific cases of central vein thrombosis and/or its branch, including molecular analysis of genes for thrombophilia.
RESULTS: In our cases, molecular analysis has shown genetic polymorphism 4G/5G of plasminogen activator inhibitor-1 (PAI-1).
CONCLUSIONS: The risk factor for unusual occlusion of the central retinal vein at two different sites is found in genes polymorphism!

POSLABŠANJE VIDA PRI BOLNIKU S KLINIČNO SLIKO ZAPORE CENTRALNE MREŽNIČNE VENE IN EDEMOM PAPILE

VISUAL IMPAIRMENT IN A PATIENT WITH CLINICAL PICTURE OF CENTRAL RETINAL VEIN OCCLUSION AND EDEMA PAPILLAE

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NAMEN: Predstaviti primer bolnika z enostranskim poslabšanjem vida ob klinični sliki zapore centralne mrežnične vene in edemom papile.
METODE: Predstavitev primera.
REZULTATI: Devetnajstletni bolnik z znanim Raynaudovim fenomenom je bil sprejet na naš oddelek zaradi en mesec trajajočega postopnega slabšanja vidne ostrine desnega očesa v smislu meglenega vida. Sicer se je od starosti 3 let zdravil zaradi sindroma WPW. Opravljene so bile številne diagnostične preiskave. Bolnika smo predstavili revmatologu, ki je na podlagi opravljenih preiskav postavil sum na mešano bolezen vezivnega tkiva. Bolnika smo zdravili topično z nesteroidnim antirevmatikom in kortikosteroidom ter s sistemsko kortikosteroidno terapijo, po čemer je prišlo do postopnega izboljšanja vidne ostrine.
ZAKLJUČEK: Številne sistemske bolezni so lahko vzrok težavam z očmi ali vidom. Pri zdravljenju teh bolnikov je pomemben celosten pristop. Za čim uspešnejši končni izid zdravljenja je poleg zdravljenja očesne simptomatike potrebno tudi zdravljenje sistemske bolezni.

PURPOSE: To present a case of unilateral visual deterioration in a patient with clinical picture of central retinal vein occlusion and edema papillae.
METHODS: Case report.
RESULTS: A 19-year-old male with known Raynaud's phenomenon was admitted to our department because of progressive deterioration of visual acuity in his right eye. He complained of blurred vision, which had started one month earlier. The patient was treated for WPW syndrome. Numerous diagnostic investigations were performed. The patient was examined by a rheumatologist who suspected a mixed connective tissue disease. The patient was receiving topical corticosteroid and non-steroidal anti-inflammatory drugs and systemic corticosteroid therapy. Visual acuity of his right eye gradually improved.
CONCLUSIONS: There are many systemic diseases known to cause ocular or visual changes. In the treatment of patients with systemic disease and ocular or visual changes, a holistic approach is important. In an attempt to optimize the final outcome of the patient's treatment, both the ocular symptoms and systemic disease should be treated.

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AFLIBERCEPT: ZAGOTAVLJANJE UČINKOVITOSTI S PROAKTIVNO SHEMO ODMERJANJA *TREAT AND EXTEND*

AFLIBERCEPT: ASURING EFFECTIVENESS WITH PROACTIVE *TREAT AND EXTEND* SCHEME OF DOSING

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Namen zdravljenja zapore centralne mrežnične vene (CRVO) z zaviralci rastnega dejavnika za žilni endotelij (anti-VEGF) je doseg optimalnega izboljšanja vidne ostrine (VO) in morfologije makule ob minimalnem bremenu zdravljenja. Zaradi pogostih kontrolnih pregledov ima čezmerno zdravljenje lahko za posledico slabšo kvaliteto bolnikovega življenja. Ob tem se zvečajo: verjetnost stranskih učinkov, možnost zapletov in, po nepotrebnem, stroški zdravljenja. Po drugi strani pa nezadostno zdravljenje lahko privede do pomanjkljivega učinka s posledično slabo VO. Pogostost aplikacij zdravila je torej zelo pomembna.
Fiksni režim zdravljenja z aplikacijami zdravila v enomesečnih presledkih izvira iz standardne oblike randomiziranih kliničnih raziskav. Za posledico ima dobre rezultate, vendar pa dolgoročno lahko privede do znižanja kompliance in zvečanja stroškov zdravljenja. Posledično se v klinični praksi uporabljajo fleksibilni režimi kot sta režim "po potrebi" (***pro re nata*** – PRN), kjer se ob rednih kontrolnih pregledih zdravilo aplicira le v primeru poslabšanja VO in/ali morfologije makule, ter režim "zdravi in podaljšaj" (ZIP), kjer so do dosega klinične remisije (npr. stabilizacija VO in morfologije makule) intervali med dvema aplikacijama fiksni, nakar se lahko podaljšujejo.
V nasprotju s fiksnim in režimom PRN, se pri režimu ZIP z manjšim številom kontrolnih pregledov poskuša individualizirati pogostost aplikacij in zmanjšati breme zdravljenja. Pri dveh randomiziranih kliničnih raziskavah s primerjalno skupino – GALILEO in COPERNICUS – je bil po prvih 6 mesecih začetni fiksni režim zdravljenja zamenjan z režimom PRN. Klinično je prišlo v prvih 6 mesecih pri večini bolnikov do značilnega izboljšanja VO. To izboljšanje se je ohranilo tudi v obdobju PRN, ki je sledilo. Bolniki, razporejeni v skupino, ki so jo z afliberceptom zdravili že od samega začetka, so ohranili izboljšanje za vsaj 13 črk vse do 100. tedna zdravljenja, kolikor je trajalo sledenje.
Čeprav režima, ki sta bila uporabljena v omenjenih kliničnih raziskavah, nista prava režima ZIP, vendarle prikažeta rezultate zdravljenja, kjer so intervali med dvema aplikacijama podaljšani. Rezultati obeh raziskav nakazujejo, da je začetno fiksno zdravljenje z enomesečnimi presledki mogoče nadomestiti z režimom s podaljšanimi intervali zdravljenja, vendar pa je le-te treba izbirati pazljivo, na individualni ravni.
Pri zdravljenju makularnega edema zaradi CRVO z aflibercept se fiksni način zdravljenja na začetku, priporoča vse do stabilizacije VO in/ali morfologije makule v 3 zaporednih mesečnih kontrolnih pregledih, nakar se lahko pristopi k režimu ZIP.

The aim of anti-VEGF therapy in central retinal vein occlusion (CRVO) is optimal visual and anatomic outcome with minimal treatment burden. Due to frequent visits, over-treatment might have bad impact on quality of patient's life. It can also potentially increase the risk for side effects and adverse events and bring along unnecessary costs for treatment. Under-treatment, however, can result in a suboptimal efficacy with poor vision as a result. Accordingly, the frequency of dosing is very important.
Fixed approach with monthly doses has its origins in the standard design of randomized clinical studies and shows good results, but may reduce long-term compliance and significantly increase cost. Consequently, flexible dosing strategies are frequently being used in clinical practice. These include an as-needed (***pro re nata*** – PRN) approach which includes regular follow-ups with treatment determined mostly by recurrent macular fluid on optical coherence tomography (OCT) and/or deterioration of visual acuity (VA) and treat-and-extend regimen (TER), which means fixed treatment intervals until clinical remission (i.e. stable visual and anatomic outcomes), followed by increasing treatment intervals.
Compared with fixed monthly dosing or PRN dosing schedule, the TER attempts to individualize the dosing

regimen and reduce treatment burden which can result in fewer visits. During the GALILEO and COPERNICUS randomized sham-controlled trials, the initial fixed monthly dosing phase for the first 6 months was followed by PRN dosing. Clinically significant maximal visual gains were apparent within first 6 months in the majority of patients and these gains were subsequently maintained through the PRN period. Furthermore, patients that received initial treatment with aflibercept maintained gains of at least 13 letters up to week 100 of treatment.

Although schedules used in these two trials were not true TER schedules, they still illustrate outcomes using an extended dosing regimen. Findings suggest that the treatment interval can be extended after the initiation with monthly doses, however monitoring and treatment intervals should be chosen carefully on an individualized basis. The recommended posology for aflibercept in treating macular edema following CRVO involves initial fixed monthly dosing until visual and/or anatomical outcomes are stable for 3 monthly assessments, thereafter TER dosing regimens may be applied.

ZAPORA CENTRALNE RETINALNE ARTERIJE S TRAJNO IZGUBO VIDA ZARADI DISEKCIJE ARTERIJE CAROTIS INTERNE

CENTRAL RETINAL ARTERY OCCLUSION RESULTING IN PERMANENT MONOCULAR VISION LOSS DUE TO INTERNAL CAROTID ARTERY DISSECTION

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NAMEN: Opozoriti na pomen prepoznavanja disekcije arterije karotis interne (ACI) v diferencialni diagnostiki nenadne neboleče izgube vida. Disekcija ACI je zelo redko vzrok zapore centralne retinalne arterije, vendar pa je tveganje za možgansko kap pri eni tretjini pacientov, najpogosteje v prvem tednu.
METODE: Predstavitev kliničnega primera.
REZULTATI: V oftalmološko ambulanto je prišel 36-letni moški zaradi nenadne izgube vida na desnem očesu z ohranjenim nazalnim delom vidnega polja. Ob tem je navajal hud zobobol na desni strani. V anamnezi ni bilo podatka o poškodbi neposredno pred pojavom simptomov. Po usmerjenem spraševanju se je spomnil, da je pred nekaj dnevi 10-mesečni otrok padel iz stajice na njegov obraz. Pri očesnem pregledu smo izmerili (ugotovljena) vidno ostrino desnega očesa po Snellenu 0.1. Pregled očesnega ozadja je pokazal belino in edem mrežnice v makuli do žilnih lokov, razen v predelu papilomakularnega snopa. Žilnih strdkov ni bilo videti. Uvedli smo zdravljenje z acetilsalicilno kislino 100 mg enkrat dnevno. Pacienta smo napotili tudi na ultrasonografijo srca in vratnih žil. Pri nevrološkem pregledu po dveh dneh je nevrolog ugotovil vztrajajočo bolečino po desni strani vratu in zmanjšano občutljivost obraza po desni strani. Ultrasonografija vratnih žil ni pokazala posebnosti, vendar je bil distalni del ACI nepregleden. Zato so opravili tudi CT-angiografijo, ki je pokazala znake disekcije desne ACI 3 cm za bifurkacijo s sumom na obstenski tromb. Na kontrolni MRA vratnih arterij 4 mesece zatem je bila vidna sakularna anevrizma desne arterije karotis interne na prehodu v petrozni del.
ZAKLJUČEK: Pomembno je, da oftalmologi v diferencialni diagnostiki nenadne izgube vida pomislimo tudi na disekcijo ACI in, še posebej pri mladih ljudeh, aktivno iščemo podatke o drugih, neočesnih simptomih.

PURPOSE: To highlight the importance of recognizing ICAD (internal carotid artery dissection) in the differential diagnosis of sudden painless visual loss. Central retinal artery occlusion caused by ICAD is extremely rare, but carries a risk of hemispheric stroke in one-third of the patients, usually within the first week.
METHODS: A clinical case report.
RESULTS: A 36-year old male presented with sudden onset vision loss in his right eye, with spared nasal part of the visual field. Accompanying symptom was severe toothache on the right side. There was no history of immediate trauma. Further questioning revealed that a few days ago his 10-month old baby fell from the edge of a crib down to the patient's face without any significant following pain. Eye examination revealed vision acuity 0.1 in his right eye. Fundoscopic examination showed whiteness of the retina, cherry red spot and macular edema reaching up to vascular arches, with papillomacular sparing and no visible emboli. The patient was started on acetylsalicylic acid 100 mg and referred to cardiac and carotid artery ultrasonography. Neurologic examination after 2 days showed persisting pain along the right side of the neck, with decreased facial sensitivity on the right side. Carotid arteries ultrasonography was unremarkable, but the image of the internal portions was not obtainable due to their anatomical course. A subsequent CT angiography revealed right ICAD 3 cm from bifurcation with suspicion of paramural thrombus. After 4 months control MRA showed a formation of saccular aneurysm at the passage to the petrous portion of right internal carotid artery.
CONCLUSIONS: Ophthalmologists should remember to consider ICAD in the differential diagnosis of a sudden visual loss especially in young people and actively inquire about any extra-ocular symptoms.

Na povabilo Združenja oftalmologov Slovenije / Invited by Slovenian Society of Ophthalmology

TRENDI DIAGNOSTIKE IN ZDRAVLJENJA PRI CENTRALNI SEROZNI HORIORETINOPATIJI

TRENDS IN DIAGNOSIS AND TREATMENT OF CENTRAL SEROUS CHORIORETINOPATHY

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Central serous chorioretinopathy (CSC) is a retinal disorder mostly affecting young people, although occasionally can be seen also in older patients, with generally good visual prognosis. CSC is characterized by avascular focal leakage through the retinal pigment epithelium, resulting in serous detachment of the neurosensory retina. The course is usually self-limiting, with spontaneous resolution within a 3-month period, and visual acuity usually recovery to 20/30 or better. However, chronic CSC may develop as a consequence of recurrences or persistent neurosensory detachment, and can result in progressive retinal pigment epithelium damage and atrophy, with consequent permanent visual loss. A primary involvement of the retinal pigment epithelium and choroidal vascularization play a significant role in the pathogenesis of CSC and the current treatment options attempt to restore the functions of the retinal pigment epithelium and the normal permeability of the choroidal vascular network. Many treatment approaches have been suggested, including conventional and subthreshold laser treatment, photodynamic therapy with verteporfin, intravitreal anti-vascular endothelial growth factor injection, and oral mineralocorticoid receptor antagonists. Further studies are warranted in an attempt to tailor any treatment option to the specific clinical subforms of CSC in order to optimize the therapeutic effects.

PERFERNA EKSUDATIVNA HEMORAGIČNA HORIORETINOPATIJA
PERIPHERAL EXUDATIVE HAEMORRHAGIC CHORIORETINOPATHY

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NAMEN: Opisati klinične in ultrasonografske značilnosti oči s periferno eksudativno hemoragično horioretinopatijo (PEHCR).
METODE: Retrospektivni pregled medicinskih popisov 7 bolnikov s PEHCR. Beležili smo bolnikove demografske značilnosti, očesne in ultrasonografske ugotovitve ter končni vidni rezultat.
REZULTATI: Vključenih je bilo 7 bolnikov (8 oči), od tega 6 (86 %) žensk. Povprečna starost je bila 86 let. Najpogostejši simptom je bil megleni vid (63 %). PEHCR je bila obojestranska pri 1 (14 %) bolniku. Lezija je bila locirana temporalno pri 8 (100 %) očeh. Vsi bolniki so imeli hemoragične lezije brez lipofuscina. Pridružene očesne najdbe so bile krvavitev v steklovino (25 %), krvavitev pod mrežnico (100 %), spremembe retinalnega pigmentnega epitela (75 %), tekočina pod mrežnico (50 %), mrežnični eksudati (87 %), makularni edem (37 %). Vse oči (100 %) so imela znake starostne degeneracije rumene pege. Ultrasonografski B-sken je pokazal dvignjeno lezijo s povprečno bazo 7,4 mm in povprečno višino 1,8 mm. Oblika lezij je bila grbasta (75 %) ali kupolasta (25 %), s srednjo ali visoko reflektivnostjo.
ZAKLJUČKI: Eksudativna hemoragična horioretinopatija je degenerativen proces, ki prizadene starejše bolnike. Te benigne lezije se kažejo kot dvignjene spremembe na perifernem, običajno temporalnem očesnem ozadju in jih lahko zamenjamo za znotrajočesni tumor.

PURPOSE: To report the clinical and ultrasonographic characteristics of the eyes with peripheral exudative haemorrhagic chorioretinopathy (PEHCR).
METHODS: Retrospective medical record review of 7 patients with PEHCR. Patient demographics, ocular findings, ultrasonographic findings and visual outcomes were recorded.
RESULTS: There were 7 patients (8 eyes), and 6 (86%) were female. The mean age at the presentation was 86 years. Most common presenting symptom was blurred vision (63%). PEHCR was bilateral in 1 (14%) patient. The lesion was located temporally in 8 eyes (100%). All patients presented as haemorrhagic lesion and without presence of lipofuscin. Associated ocular features included vitreous haemorrhage (25%), subretinal haemorrhage (100%), retinal pigment epithelial changes (75%), subretinal fluid (50%), retinal exudates (87%), macular edema (37%). All eyes (100%) had signs of age-related macular degeneration. Ultrasonography B-scan showed elevated lesion with mean base 7.4 mm and mean height 1.8 mm. The shape of the lesion was multilobular (75%) or dome-shaped (25%), with medium or high internal reflectivity.
CONCLUSIONS: Exudative haemorrhagic choroiretinopathy is a degenerative condition that affects older patients. These benign lesions present as elevated in the peripheral, usually temporal fundus and may be misinterpreted as an intraocular tumour.

PERIPAPILARNA HOROIDALNA NEOVASKULARIZACIJA
PERIPAPILLARY CHOROIDAL NEOVASCULARIZATION

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NAMEN: Predstaviti klinične značilnosti bolnikov (oči) s peripapilarno horoidalno neovaskularizacijo (CNV) in uspešnost zdravljenja CNV.
METODE: Retrospektivni pregled dokumentacije 20 bolnikov z diagnosticirano peripapilarno CNV. Zabeležili smo starost in spol bolnika, bolezen, v sklopu katere je nastala CNV, način zdravljenja, vidno ostrino pred začetkom zdravljenja in ob koncu zdravljenja.
REZULTATI: Povprečna starost 20 bolnikov (5 moških, 15 žensk) s peripapilarno CNV je bila 67,8 ± 17,9 let. Vsi so imeli enostransko CNV. Pri 7 bolnikih (očeh) so bile spremembe v sklopu starostne degeneracije makule (35 %), pri 3 smo dokazali horoidalne polipe (15 %), pri 4 se je CNV razvila ob zagonu uveitisa (20 %), pri 6 bolnikih (očeh) pa nismo našli druge očesne patologije in smo CNV opredelili kot idiopatsko (30 %). Devet bolnikov smo zdravili z lasersko fotokoagulacijo (45 %), 10 z zdravili anti-VEGF (50 %), pri eni bolnici smo zdravljenje kombinirali (5 %). Pri 15 bolnikih se je vidna ostrina z zdravljenjem izboljšala (75 %), pri 4 je ostala enaka (20 %), pri eni bolnici se je kljub zdravljenju poslabšala (5 %).
ZAKLJUČEK: Peripapilarna horoidalna neovaskularizacija se lahko razvije v sklopu različnih očesnih bolezni, lahko pa je tudi idiopatska. Uspešnost zdravljenja je pogojena z osnovno boleznijo.

PURPOSE: To present clinical characteristics of patients (eyes) with peripapillary choroidal neovascularization (CNV) and treatment.
METHODS: Retrospective data analysis of 20 patients with peripapillary CNV. The age, gender, disease associated with the CNV development, treatment modality, visual acuity before and after treatment were recorded.
RESULTS: Mean age of 20 patients (5 males, 15 females) with peripapillary CNV was 67.8 ± 17.9 years. All patients had unilateral CNV. CNV was associated with age-related macular degeneration in 7 patients (35%), with polypoidal chorioidal vasculopathy in 3 patients (15%) and with uveitis in 4 patients (20%). Six patients had idiopathic CNV (30%). Nine patients were treated with laser photocoagulation (45%), 10 with anti-VEGF injections (50%), 1 patient had combined treatment (5%). Visual acuity improved after treatment in 15 patients (75%), remained the same in 4 patients (20%) and deteriorated despite treatment in 1 patient (5%).
CONCLUSIONS: Peripapillary choroidal neovascularization can develop in various pathologic conditions, but can be also idiopathic. Treatment results greatly depend on underlying pathology.

PAHIHOROIDALNI SPEKTER BOLEZNI
PACHYCHOROID SPECTRUM DISEASE

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NAMEN: Nove diagnostične metode omogočajo nov pogled na različne horioretinalne bolezni. Pahihoroidalne (***pahi-***: debel-) bolezni pomenijo nenormalno in stalno povečanje debeline žilnice z razširjenimi horoidalnimi žilami in drugimi strukturnimi spremembami žilnice. Specifične spremembe zadebeljene žilnice so bile prvo opisane na indocianinski angiografiji (ICGA) in EDI-OCT. Novejše metode, kot sta ***en face***-OCT in OCT-angiografija, so odkrile nove značilnosti bolezni. Namen je predstaviti štiri primere bolnikov z novim spektrom bolezni, ki imajo značilne horoidalne spremembe, vidne s pomočjo multimodalne slikovne diagnostike.
METODE: Bolniki so imeli opravljeno slikanje očesnega ozadja, avtofluorescenco, fluoresceinsko angiografijo (FAG), ICGA, OCT-EDI, ***en face***-OCT na Očesni kliniki v Ljubljani, ter OCT-angiografijo v Kirurškem Očesnem centru dr. Pfeifer v Ljubljani.
REZULTATI: Povprečna starost bolnikov (2 ženski in 2 moška) je bila 66 let (54–77). Pri vseh smo našli značilne klinične in anatomske spremembe: zadebeljeno žilnica s povprečno debelino 420 µm, patološko razširjene horoidalne žile v zunanjem sloju, stanjšanje horiokapilarisa in Sattlerjevega sloja žilnice, ter difuzno ali fokalno puščanje kontrasta na ICGA v intermediarni fazi. Pri štirih bolnikih je bila z OCT-angiografijo vidna velikost in oblika horoidalne neovakularizacije (CNV); pri dveh bolnikih CNV nismo potrdili s FAG ali ICGA.
ZAKLJUČEK: Pahihoroidalni spekter bolezni ima skupne značilnosti: razširjene horoidalne žile (***pachyvessels***), fokalne ali difuzne patološke spremembe so nad zadebeljenim delom žilnice.

PURPOSE: Rapid progress in retinal imaging has provided new insights into a variety of chorioretinal disorders. A "pachychoroid"(***pachy-***: thick-) is defined as an abnormal and permanent increase in choroidal thickness often showing dilated choroidal vessels and other structural alterations of the normal choroidal architecture. The specific features of a focal or diffuse increase in choroidal thickness, choroidal hyperpermeability, and dilated choroidal vessels were first described using indocyanine green angiography (ICGA) and spectral domain OCT (SD-OCT). More recently, en face imaging with swept source OCT (SS-OCT) and OCT angiography (OCT-A) have revealed new findings. The purpose is to report four cases of the new spectrum of diseases sharing similar choroidal findings seen with multimodal imaging.
METHODS: An observational case series of four patients who underwent comprehensive ophthalmic examination, fundus photography, fundus autofluorescence, spectral-domain optical coherence tomography, and enhanced depth imaging optical coherence tomography, fluorescein angiography, indocyanine green angiography at Eye Clinic Ljubljana and OCT-angiography at Eye Surgical Center dr. Pfeifer.
RESULTS: There are two female and two male patients, on the average 66 years (54–77 years) old. Clinical and anatomic features that were observed in all four patients were: increased choroidal thickness with average thickness of 420 µm, pathologically dilated outer choroidal vessels, thinning of choriocapillaris and Sattler vessels overlying pachyvessels and focal or diffuse leakage seen in intermediate phases of ICGA. The size and location of subretinal neovascularization can be clearly seen with OCT-angiography in four eyes of four patients, in two of the patients both fluorescein and indocyanine green angiography were non-contributory for diagnosing neovascularization.
CONCLUSIONS: The pachychoroid spectrum diseases share common choroidal findings: dilated choroidal vessels (***pachyvessels***), pathology overlies the thickest area of the choroid which can be focal or diffuse.

KRANIOFACIALNA LINERANA SKLERODERMA, POVEZANA Z MREŽNIČNO TELANGIEKTAZIJIO IN EKSUDATIVNIMI ODSTOPOM MREŽNICE

CRANIOFACIAL LINEAR SCLERODERMA ASSOCIATED WITH RETINAL TELANGIECTASIA AND EXUDATIVE RETINAL DETACHMENT

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PURPOSE: To describe the ophthalmic and neuroimaging features in a child with craniofacial linear scleroderma ('en coup de sabre').
METHODS: A detailed ophthalmological examination, external ocular and fundus photography, spectral-domain optical coherence tomography, fluorescein angiography and neuroimaging were performed.
RESULTS: A 5-year old boy was referred from rheumatology after being diagnosed with left linear scleroderma affecting the scalp, forehead, eyebrow and eyelashes. There was no ocular complaint and examination was unremarkable apart from left optic disc drusen. Two years later the child presented again with a 6-week history of decreased left visual acuity. An abnormal collection of episcleral vessels was observed in the left eye, and fundoscopy revealed a left exudative retinal detachment. Fluorescein angiography of the left eye showed fluorescein leakage from telangiectatic vessels and peripheral areas of capillary nonperfusion. His immunosuppressive treatment was modified and an intravitreal anti-VEGF injection was administered. Despite these, there was no significant improvement and the left visual acuity remained reduced at 1.3 LogMAR. As the patient was complaining of headaches, neuroimaging was performed; the findings were consistent with linear scleroderma and there was no evidence of active vasculitis on magnetic resonance angiography.
CONCLUSIONS: Children with craniofacial linear scleroderma are at risk of developing exudative vasculopathy and should have regular fundus examination. Multidisciplinary monitoring is required and neurological symptoms should be enquired about. Future studies will provide important insights into the optimal screening schedule, and the role of vascular ablation and anti-VEGF agents.

MREŽNICA III
RETINA III

Moderatorja / Moderators: DAVORIN SEVŠEK, MARTINA JARC VIDMAR

NAŠE IZKUŠNJE PRI ZDRAVLJENJU CENTRALNE SEROZNE HORIORETINOPATIJE Z DIODNIM MIKROPULZNIM LASERJEM

OUR EXPERIENCE IN TREATMENT OF CENTRAL SEROUS CHORIRETINOPATHY WITH SUBTHRESHOLD DIODE MICROPULSE LASER

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Centralna serozna horioretinopatija (CSH) je eksudativni odstop nevrosenzorične mrežnice. Najpogosteje se pojavlja pri moških, starih od 20 do 45 let. Pri pacientih nad 50 let vplivajo na nastanek CSH starostne degenerativne spremembe v makuli. Pacienti navajajo slabši vid, mikropsijo, metamorfopsijo, motnje barvnega vida in skotome. Za zdravljenje CSH ni na voljo dokazanega uspešnega medikamentnega zdravljenja, vendar se v klinični praksi še vedno uporablja acetazolamid za hitrejšo resorpcijo subretinalne tekočine. Avtorji so zdravili centralno CSH z mikropulznim laserjem (MPL) 577 nm. V raziskavo so bili vključeni bolniki, stari do 49 let, pri katerih je trajala CSH do 6 mesecev. Pri 95 % bolnikov je prišlo do občutnega zmanjšanja edema in izboljšanja vidne ostrine že po enem mesecu. Do popolnega zmanjšanja edema pa je prišlo v povprečju po treh ponovitvah terapij z MPL.

Central serous chorioretinopathy (CSC) is a disease characterized by an exudative detachment of the neurosensory retina. It is most common in male patients between the ages of 20 and 45. Age-related macular degeneration also plays a role in the development of CSH in patients older than 50 years. Patients usually report worsening of visual acuity, colour vision deficiency, micropsia, metamorphopsia and scotoma. Currently, there is no effective medicamentous treatment available for CSH, however in clinical praxis, acetazolamide is used for facilitating absorption of subretinal liquid collection. The authors have used micro pulse diode laser (MPL) 577 nm for treatment of CSH. Patients included in the study were up to 49 years old and had CSH for up to 6 months. After 1 month, 95% of patients showed a significant improvement of edema and visual acuity. On average, total remission of CSH was observed after of 3 therapies with MPL.

LASER *PASCAL* S 577 nm IN IZIDI PRI ZDRAVLJENJU RAZNIH OČESNIH BOLEZNI

577 nm *PASCAL* LASER AND END-POINT MANAGEMENT IN VARIOUS EYE DISEASES

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We would like to present preliminary experience and management with our new yellow 577 Pascal laser in various eye pathologies.

Na povabilo Združenja oftalmologov Slovenije / Invited by Slovenian Society of Ophthalmology

DISTROFIJE RUMENE PEGE Z VIDEZOM *SDM*
MACULAR DYSTROPHIES MIMICKING *AMD*

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Age-related macular degeneration (AMD) is a very common condition that is caused by a complex interplay of environmental and genetic factors. A wide range of inherited macular conditions share clinical features with AMD and the differential diagnosis can often be very challenging. Such disorders include pattern/vitelliform dystrophies, autosomal dominant drusen, CFH-related cuticular drusen, Sorsby fundus dystrophy, late-onset retinal degeneration (LORD) and pseudoxanthoma elasticum. Distinguishing these conditions from AMD is clinically relevant as it can have important implications for prognosis, counselling, management and inclusion in future gene-based therapeutic trials. A differential diagnostic approach will be discussed and multimodal imaging findings from different macular dystrophies mimicking AMD will be presented.

ELEKTROFIZIOLOŠKE ZNAČILNOSTI TOKSIČNE KLOROKVINSKE RETINOPATIJE
ELECTROPHYSIOLOGICAL FINDINGS IN PATIENTS WITH TOXIC CHOLOQUINE RETINOPATHY

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NAMEN: Multifokalna elektroretinografija (mfERG) je poleg avtofluorescence (AF) in optične koherentne tomografije (OCT) opisana kot ena izmed občutljivejših metod za zgodnje odkrivanje mrežničnih sprememb zaradi toksičnosti klorokvina. Namen raziskave je bil preučiti odstopanja mfERG v slovenski populaciji pacientov na terapiji s klorokvinom.
METODE: Retrospektivno smo analizirali mfERG-posnetke pacientov, spremljanih na Očesni kliniki med letoma 2009 in 2016. V analizo je bilo vključenih 33 pacientov z očesno simptomatiko ali brez nje, starih od 23 do 76 let (povprečna starost 51,7 let), ki so prejemali klorokvin od 0,5 leta do 23 let (v povprečju 6,6 let).
REZULTATI: Pri 14 pacientih mfERG ni pokazal patoloških odstopanj, vrednosti foveolarnega odziva (126,2 ± 25,0 nV) in ostalih področij centralne mrežnice so bile glede na referenčne vrednosti laboratorija normalne, normalno je bilo razmerje med foveolarnim in perifoveolarnim obročem (2,0 ± 0,3). Pacienti v tej skupini so imeli normalno ostrino vida (1,0 ± 0,1 po Snellenu). Pri 10 pacientih, katerih ostrina vida je bila prav tako še ohranjena (1,0 ± 0,1), se je kazal nižji odziv v foveolarnem področju (74,7 ± 22,5 nV), še izrazitejše pa je bilo znižanje odziva v perifoveolarnem področju, kar se je kazalo kot patološko razmerje med obroči (3,2 ± 1,1). Pri 9 pacientih s slabšo ostrino vida (0,4 ± 0,3) je bil odziv v foveolarnem področju in perifernejših področjih mfERG izrazito znižan (28,1 ± 16,6 nV), glede na patološki skotopični in fotopični ERG so se kazali znaki generalizirane mrežnične disfunkcije. V nadaljevanju raziskave bomo stopnjo elektrofizioloških sprememb korelirali s stopnjo sprememb pri OCT in AF.
ZAKLJUČEK: Elektrofiziološka odstopanja pacientov z retinopatijo zaradi terapije s klorokvinom so izrazita v napredovali fazi kot tudi v začetni fazi bolezni, ko je ostrina vida še ohranjena.

PURPOSE: Multifocal electroretinography (mfERG) has previously been shown a sensitive method for early detection of toxic chloroquine retinopathy. The aim of this study was to evaluate mfERG changes in Slovenian patients, treated with chloroquine.
METHODS: MfERG responses obtained at regular visits of the patients between the years 2009 and 2016 were retrospectively analyzed. Included were 33 patients, with or without visual disturbances, aged 23 to 76 years (mean age 51.7 years). They were receiving chloroquine therapy from 0.5 to 23 years (mean 6.6 years).
RESULTS: In 14 patients mfERG values were normal (according to the reference values) in the foveolar (126.2 ± 25.0 nV) and other regions of the central retina, normal was also the ratio between the foveolar and perifoveolar ring (2.0 ± 0.3). Visual acuity in this group of patients was normal (1.0 ± 0.1 according to Snellen). In 10 patients with preserved visual acuity (1.0 ± 0.1) there was a decrease in the foveolar region of the mfERG (74.7 ± 22.5 nV), while in the perifoveolar region there was even more severe abnormality, detected by pathologic ratio between the rings (3.2 ± 1.1). Nine patients with decreased visual acuity (0.4 ± 0.3) had a significant decrease of the response in the foveolar (28.1 ± 16.6 nV) and also other regions of the mfERG, due to pathologic full-field ERG their findings were in agreement with generalized retinal dysfunction. Additional analysis and correlation of electrophysiological findings with morphological abnormality, detected by optical coherence tomography and fundus autofluorescence will also be included.
CONCLUSIONS: Electrophysiological abnormality of the patients, treated with chloroquine, is significant already in early stages of the disease, when visual acuity is preserved.

STRUKTURNE, FUNKCIONALNE IN GENETSKE ZNAČILNOSTI DVOJNEGA HIPERAVTOFLUORESCENČNEGA OBROČA PRI BOLNIKIH Z *USH2A*

STRUCTURAL, FUNCTIONAL AND GENETIC CORRELATIONS OF DOUBLE HYPERAUTOFLUORESCENT RING IN *USH2A* PATIENTS

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NAMEN: Opredeliti strukturne in funkcionalne korelacije vzorca dvojnega hiperavtofluorescenčnega obroča pri treh USH2A bolnikih

METODE: Trije bolniki z bialelnimi mutacijami v USH2A (bolnika 1 in 2 z Usherjevim sindromom tip 2 in bolnica 3 z recesivno pigmentno retinopatijo, stari 44, 46 in 61 let), ki so imeli dvojni hiperavtofluorescenčni obroč na avtofluorescenci očesnega ozadja (FAF) so opravili preiskavo vidne ostrine, Goldmannovo perimetrijo, slikanje z optično koherentno tomografijo (OCT) in elektrofiziološke preiskave (ERG). Pri bolnikih 1 in 2 smo dodatno opravili še mikroperimetrijo (MP1) in preiskavo sluha z avdiometrijo. Kot primerjalno skupino smo vključili dvaindvajset bolnikov z USH2 z enojnim hiperavtofluorescenčnim obročem (povprečna starost 46 ± 13 let).

REZULTATI: OCT, Goldmannova perimetrija in mikroperimetrija so pokazali ohranjeno funkcijo in strukturo mrežnice v notranjosti notranjega obroča in periferno od zunanjega obroča. V primerjavi z bolniki z enojnim obročem ni bilo statistično značilnih razlik v starosti ali trajanju bolezni, bolniki z dvojnimi obroči pa so imeli statistično značilno višje odzive čepnic; bolnika s prizadetostjo sluha (USH2) sta imela blažjo prizadetost sluha (Mann-Whitney U test, $p < 0,05$). Bolniki z dvojnimi obroči so imeli mutacije p.R303H, p.R303H in p. G4032R, medtem ko so imeli bolniki z enojnimi obroči dve skrajševalni mutaciji v 64 % (14/22) primerov in druge drugačnopomenske mutacije v 36 % (8/22) primerov.

ZAKLJUČEK: Dvojni hiperavtofluorescenčni obroč je bil povezan z ohranjeno strukturo in funkcijo mrežnice znotraj notranjega in zunaj zunanjega obroča. Pomembna ohranjenost mrežnice v primerjavi z bolniki z enojnimi obroči in blažja prizadetost sluha nakazuje blažjo obliko bolezni, povezano s tem vzorcem, ki bi lahko bila povezana s specifičnim genotipom.

PURPOSE: Double hyperautofluorescent ring pattern is one of the less commonly observed patterns in patients with RP and its clinical significance has not been extensively studied. The purpose of our study was to characterize the structural and functional correlations of this pattern in three USH2A patients.

METHODS: The studied group consisted of three patients with biallelic mutations in USH2A (patients 1 and 2 with Usher syndrome type 2, and patient 3 with recessive RP, ages 44, 56 and 61), who exhibited double hyperautofluorescent rings on fundus autofluorescence (FAF) imaging. Patients underwent Snellen visual acuity, Goldmann perimetry, optical coherence tomography (OCT) and full-field ERG. Additionally, microperimetry (MP1, Nidek Technologies, Padua, Italy) was performed on the left eye of patient 1 and both eyes of patient 3 and audiograms were performed in patients 1 and 2. Twenty-two USH2A patients with a single ring (46 ± 13 years) were recruited for comparison.

RESULTS: OCT, Goldmann perimetry and MP1 showed preserved retinal structure and function inside and outside the inner and outer rings, respectively. Compared with single rings patients, the studied patients did not differ significantly in age or duration of nyctalopia, but had significantly larger cone ERG amplitudes and the two USH2 patients had lower degree of hearing loss (Mann-Whitney U test, $p < 0.05$). Patients with

double rings had mutations p.R303H, p.R303H and p.G4032R, respectively, while single ring patients had two stop mutations in 64% (14/22) cases and other missense variants in 36% (8/22).
CONCLUSIONS: Double hyperautofluorescent ring was associated with preserved retinal structure and function inside and outside of the inner and outer ring, respectively. Significant retinal preservation in comparison to similarly aged patients with single rings, as well as milder auditory phenotype, suggests a milder disease course associated with this pattern, which may be genotype specific.

MREŽNIČNI ODZIVI *RETeval* DONOŠENIH OTROK IN NEDONOŠENČKOV

RETeval RETINAL RESPONSES IN TERM AND PRE-TERM CHILDREN

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UVOD: Elektrofiziološka ocena delovanja očesne mrežnice je možna s pomočjo elektroretinografije (ERG), kar je zlati elektrofiziološki standard ocene vidne funkcije pri otrocih. Z novo prenosno ERG-napravo ***RETeval***, ki je bila primarno razvita za hitro oceno delovanja mrežnice pri odraslih z diabetesom, bi bilo vrednotenje delovanja mrežnice pri otrocih lahko hitrejše in lažje. V raziskavi nas predvsem zanima populacija nedonošenčkov, pri katerih je znano, da je delovanje mrežnice zaradi prezgodnjega rojstva lahko moteno. Namen raziskave je pridobiti bazo normalnih odzivov mrežnice zdravih otrok in jih nato primerjati z odzivi mrežnice skupine nedonošenčkov, ki imajo retinopatijo nedonošenčka ali pa ne.
METODE: V skupino nedonošenčkov so vključeni otroci, ki so bili rojeni pred dopolnjenim 31. tednom gestacijske starosti in so že dopolnili 5 let. Znotraj skupine smo jih nato razdelili v tiste, ki so imeli dokazano retinopatijo nedonošenčka (ROP+) in tiste, ki je niso imeli (ROP-). Skupina zdravih, ob roku rojenih otrok, se ujema s skupino nedonošenčkov po spolu in starosti. Pri vseh otrocih so posneti 30-herčni ERG-odzivi mrežnice s prenosno napravo ***RETeval***.
REZULTATI: Povprečna vrednost latence 30-herčnega ERG-odziva skupine donošenih otrok je trenutno 26,7 ± 0,4 ms, skupine nedonošenčkov pa 31,5 ± 0,9 ms, opazen je tudi trend daljših latenc pri otrocih, ki so bili izjemno nedonošeni (rojeni pred 27. tednom gestacijske starosti) in pri tistih s potrjeno eno izmed stopenj retinopatije nedonošenčka (ROP+). Povprečne vrednosti amplitude 30-herčnega ERG-odziva skupine donošenih otrok je trenutno 24,9 ± 9,7 ĐV, skupine nedonošenčkov pa 20,3 ± 4,9 ĐV.
ZAKLJUČKI: Preliminarni rezultati raziskave kažejo, da se 30-herčni ERG-odzivi mrežnice donošenih otrok in nedonošenčkov razlikujejo v latenci in amplitudi, nedonošenčki imajo odzive daljših latenc in nižjih amplitud.

INTRODUCTION: Electroretinography (ERG) represents the golden standard for electrophysiological evaluation of retina in children. ***RETeval*** is a portable device which was developed for ERG screening of adult diabetic patients, but due to its convenient use it could be very helpful also in children. The present study is focused on prematurely born children. It is well known that their retinal function can be disturbed due to their prematurity. The aim of the study is to compare responses from a group of term children with the ones from prematurely born children, with or without retinopathy of prematurity.
METHODS: Children who were born before the gestational week 31 and were at least 5 years old at the time of testing are included in the group of prematurely born children. Within this group, they are divided according to the presence of retinopathy of prematurity (ROP+) or its absence (ROP-). Their ERG responses are compared with a group of age and sex matched healthy term children. In all children 30-Hz flicker ERG responses were evaluated.
RESULTS: The average latency of the 30-Hz flicker ERG response in the normative group was 26.7 ± 0.4 ms, whereas it was 31.5 ± 0.9 ms in the prematurely born children group. The tendency of even longer latency of the response was observed also in the group of extreme premature children (born before the gestational week 27) and in the ROP+ children. The average amplitude of the 30-Hz flicker ERG response in the normative group was 24.9 ± 9.7 ĐV, whereas it was 20.3 ± 4.9 ĐV in the prematurely born children group.
CONCLUSIONS: The preliminary results of the present study show that 30-Hz ERG retinal responses differ between both groups. Prematurely born children show longer latency and smaller amplitude of the response.

STRUKTURA IN FUNKCIJA MREŽNICE 72 BOLNIKOV S STARGARDTOVO DISTROFIJO IN 13 RAZLIČNIMI ALELI *ABCA4*

RETINAL FUNCTION AND STRUCTURE OF 72 STARGARDT PATIENTS HARBORING 13 DISTINCT *ABCA4* ALLELES IN TRANS WITH NULL ALLELES

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NAMEN: Opredeliti učinek različnih ABCA4 mutacij na klinično sliko bolnikov s Stargardtovo distrofijo.
METODE: V raziskavo je bilo vključenih 72 bolnikov s 13 različnimi drugačnopomenskimi mutacijami ABCA4, 19 bolnikov z dvema ničelnimima mutacijama ter ERG-odzivi 165 zdravih preiskovancev. Razpona amplitud maksimalnega odziva bolnikov z dvema ničelnima mutacijama in zdravih preiskovancev (75 % in 95 % interval zaupanja, nCI) sta bila uporabljena za kategorizacijo mutacij. Avtofluorescenca in optična koherentna tomografija (FAF in OCT, *Spectralis*, Heidelberg, Nemčija) sta bili analizirani kvalitativno.
REZULTATI: Mutaciji p.G1961E (N = 20, 15–56 let) in p.R2030Q (n = 2, 64 in 49 let) sta bili povezani z normalnimi ERG-odzivi in kategorizirani kot 'blagi'. Večina bolnikov p.G1961E je imelo atrofično foveo in hiperavtofluorescenčne depozite lokalizirane blizu roba atrofije. Mutacije p.R24H, p.G863A or 863delG, p.P1380L, p.L2027F in c.5714+5G>A (n = 36, 9–75 let) so bile bile povezane z normalnimi (n = 18) ali patološkimi (n = 18) ERG-odzivi, zunaj 95-odstotnega nCI v 31/36 primerih, in so bile kategorizirane kot 'srednje hude'. Bolniki z normalnim odzivom ERG so bili mlajši kot tisti s patološkim (mediana starost 28 in 42 let, p < 0,005). Mutacije p.L541P/A1038V, p.E1022K, p.C1490Y, p.E1087K, p.T1526M in p.C2150Y (n = 14, 9–67 let) so bile povezane s patološkimi ERG-odzivi, podobnimi tistim od bolnikov z dvema ničelnima mutacijama (14/14, znotraj 95-odstotnega nCI), in so bile kategorizirane kot 'ničelne'. Večina bolnikov iz 'srednje hude' in 'ničelne' kategorije je imelo iregularno avtofluorescenco, segajočo iz žilnih lokov, pri čemer so bolniki s srednje hudimi mutacijami imeli večje hiperavtofluorescenčne depozite in manjša področja atrofije.
ZAKLJUČEK: V kombinaciji z ničelno mutacijo je bilo 2/13 mutacij ABCA4 povezanih z ohranjeno periferno funkcijo mrežnice, 5/13 z ohranjeno ali blago prizadeto funkcijo, slabšo pri starejših bolnikih; in 6/13 mutacij s hudo prizadeto funkcijo. Predvidevamo, da so razlike posledica različne stopnje ohranjenosti funkcije proteina ABCA4.

PURPOSE: To explore the phenotype of Stargardt patients with different ABCA4 alleles in trans with null alleles and thence determine the effect of specific alleles.
METHODS: Study included 72 patients harboring 13 different non-null alleles in trans with null alleles, 19 with two null alleles in trans and ERG values of 165 healthy controls. The dark adapted standard strong flash a-wave ERG amplitudes were compared with 75% and 95% confidence intervals of the double null patients (nCI) and 165 healthy controls. Fundus autofluorescence imaging and optical coherence tomography were assessed when available.
RESULTS: Alleles p.G1961E (N = 20, 15-56y) and p.R2030Q (N = 2, 64 and 49 y) were associated with normal ERG and were classified as "mild". Most p.G1961E patients had foveal atrophy with flecks localized at its border, while p.R2030Q patients had irregular autofluorescence, extending beyond vascular arcades, and small regions of perifoveal atrophy. Alleles p.R24H, p.G863A or 863delG, p.P1380L, p.L2027F and c.5714+5G>A (N = 36, 9-75y) were associated with normal (N = 18) or abnormal (N = 18) ERG, with

amplitudes outside the 95% nCI in 31/36 cases; classified as “intermediate”. The 18 cases with normal ERGs were younger than those with retinal dysfunction (median ages 28 and 42 years, $p < 0.005$). Alleles p.L541P/A1038V, p.E1022K, p.C1490Y, p.E1087K, p.T1526M, and p.C2150Y (N = 14, 9–67y) were associated with abnormal ERGs with amplitudes comparable to nullizygous patients (14/14 within the 95% nCI); classified as “null-like”. Patients from intermediate and null-like group had irregular FAF extending beyond the vascular arcades, with intermediate alleles often associated with larger flecks and smaller areas of atrophy.
CONCLUSIONS: In trans with null alleles, 2/13 ABCA4 variants were associated with preserved peripheral retinal function, 5/13 with either preserved or mildly abnormal retinal function, worse in older patients; and 6/13 behaved similarly to nulls. It is hypothesized that this represents distinct degrees of retained ABCA4 protein function.

LASERSKA VITREOLIZA
LASER VITREOLYSIS

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NAMEN: Predstaviti terapijo motnjav v steklovini z NdYAG-laserjem ***Ellex UltraQ***.
METODE: Predstavitev primera.
ZAKLJUČEK: Laserska vitreoliza je neinvazivna metoda zdravljena motnjav v steklovini, s katero lahko pričakujemo bistveno izboljšanje pri večini zdravljenih pacientov.

PURPOSE: To present treatment of vitreus floaters with ***Ellex UltraQ*** NdYAG laser
METHODS: Case report
CONCLUSIONS: Laser vitreolysis is a non-invasive treatement for vitreus floaters with great success in great majority of treated patients.

PRIPOROČILA ZA OFTALMOLOŠKO SLEDENJE BOLNIKOV ZDRAVLJENIH S KLOROKVINOM/ HIDROKSIKLOROKVINOM

RECOMMENDATIONS ON SCREENING FOR CHLOROQUINE AND HYDROXYCHLOROQUINE RETINOPATHY

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NAMEN: Predstaviti priporočila za oftalmološko sledenje bolnikov, ki se zdravijo s klorokvinom/ hidroksiklorokvinom.
METODE: Klorokvin (K) in hidroksiklorokvin (HK) se v revmatologiji in dermatologiji uporabljata za zdravljenje avtoimunskih bolezni. Zdravili sta varni in jih bolniki večinoma dobro prenašajo. Pomemben stranski učinek je nepovratna toksičnost za mrežnico. Če se zdravljenje pravočasno ne prekine, lahko vodi v resne okvare vida. Verjetnost razvoja toksične retinopatije je odvisna od dnevnega odmerka zdravila in trajanja zdravljena. Ostali nevarnostni dejavniki so pridružena bolezen ledvic in sočasna terapija s tamoksifenom. V priporočenih dnevnih odmerkih (≤ 5 mg/kg za HK in ≤ 2,3 mg/kg za K) je verjetnost toksičnosti v prvih 5 letih 1 %, naraste v prvih 10 letih na 2 %, in je skoraj 20 % po 20 letih jemanja.
REZULTATI: V prvem letu po uvedbi zdravljenja s K/HK je treba opraviti oftalmološki pregled, ki naj vključuje določitev najboljše ostrine vida, računalniško perimetrijo (makularni program), pregled sprednjega dela očesa in očesnega ozadja, SD-OCT makule. Po 5 letih prejemanja terapije priporočamo redno – enkrat letno – ponoviti pregled z zgoraj naštetimi preiskavami. V dvomljivih primerih sta nam v dodatno pomoč multifokalna elektroretinografija (mfERG), ki objektivno pokaže funkcionalne spremembe, in slikanje avtofluorescence očesnega ozadja (FAF), ki topografsko oceni okvaro.
ZAKLJUČEK: Okvara mrežnice zaradi K/HK je nepovratna, zanjo ni znanega zdravila. Redni pregledi, ki poleg splošnega oftalmoskopskega pregleda vsebujejo še preiskavo vidnega polja in slikanje s SD-OCT, nam pomagajo prepoznati okvare v zgodnji fazi, še pred funkcionalno okvaro.

PURPOSE: To present recommendations on screening for chloroquine and hydroxychloroquine retinopaty in Slovenia.
METHODS: Chloroquine (CQ) and Hydroxychloroquine (HCQ) are used in rheumatology and dermatology for treatment of autoimmune disease. Long term use can cause irreversible toxicity of retina. Progression of structural and functional deficits can occur even after cessation of drug therapy. Screening for identification of early HCQ toxicity is critical for the prevention of vision loss. The risk of toxicity is dependent on daily dose and duration of use. Other major risk factors are concomitant renal disease and use of tamoxifen. At recommended daily doses (≤ 5 mg/kg for HCQ in ≤ 2.3 mg/kg for CQ) the risk for toxicity up to 5 years is under 1% and up to 10 years it is under 2%, but is almost 20% after 20 years of treatment.
RESULTS: In the first year of treatment with CQ/HCQ, baseline ophthalmologic examination should include best corrected visual acuity, anterior segment and fundus examination, automated visual field and spectral-domain optic coherence tomography of macula (SD-OCT). Annual screening with the same set of tests should continue after 5 years of therapy for patients on recommended doses and without major risk factors. In doubtful cases, multifocal electroretinography (mfERG) and fundus autofluorescence (FAF) should be used.
CONCLUSIONS: CQ/HCQ retinal toxicity is irreversible and there is no therapy. A good screening program is necessary to detect early changes and prevent functional vision loss.

SATELITSKI SIMPOZIJ

SATELLITE SYMPOSIUM: START STRONG. STAY STRONG

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EYLEA® – MOČ PRI RAZLIČNIH INDIKACIJAH
EYLEA® – STRENGTH ACROSS INDICATIONS

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Aflibercept je rekombinantni fuzijski protein, ki zavira VEGF in PlGF. Tako kot VEGF je tudi PlGF v človeških membranah CNV. Še ena razločevalna lastnost aflibercepta je, da je vezavna afiniteta za VEGF 0,5 pM Kd, kar je znatno več kot pri ranibizumabu, bevacizumabu, ali naravnih receptorjih VEGF. To omogoča učinkovito blokiranje VEGF tudi v nizkih koncentracijah, kar lahko pomeni daljše delovanje in podaljšane intervale odmerjanja.
Uporabo pri različnih boleznih mrežnice in horoidalnih boleznih dokazujejo rezultati kliničnih preskušanj in klinična praksa.
Sledi predstavitev zadnjih rezultatov uporabe aflibercepta pri različnih boleznih.
Analizirali bomo zlasti ***Protocol T DRCRnet*** za diabetični makularni edem po dveh letih in opravili ***post hoc*** analizo raziskav ***View 1*** in 2 za zdravljenje horoidalnih neovaskularnih lezij.
Protocol T vsebuje zaključke študije ***DRCRnet***, da je bilo dveletno zdravljenje bolnikov s slabšo začetno ostrino vida z afliberceptom v povprečju uspešnejše kot zdravljenje z bevacizumabom, čeprav se je razlika zmanjšala v primerjavi z rezultati zdravljenja po prvem letu. Razlika glede izboljšanja ostrine vida med afliberceptom in ranibizumabom, ugotovljena po enem letu, se je po dveh letih zmanjšala in ni bila več statistično pomembna. Vendar so z afliberceptom vedno dosegli večje zmanjšanje debeline mrežnice.
Analiza ***post hoc*** študij ***View 1*** in ***2*** kaže, da je aflibercept učinkovitejši od drugih zdravil proti VEGF v primeru ločitve mrežnice od pigmentnega epitelija.

Aflibercept is a recombinant fusion protein which inhibits VEGF and PlGF. Like VEGF, PlGF is present in human CNV membranes. Another differentiating feature of aflibercept is that the binding affinity for VEGF is 0.5 pM Kd, which is considerably stronger than ranibizumab, bevacizumab, or native VEGF receptors. This allows for effective blocking of VEGF, even at low concentrations, which may translate into a longer duration of action and extended dosing intervals.
The use in different retinal and choroidal disease is demonstrated by the results of clinical trials and by the clinical practice.
The presentation will show the last results of Aflibercept in different diseases.
In particular will be analyzed the ***DRCRnet Protocol T*** for diabetic macular edema at two years and post hoc analysis of view 1 and 2 for the treatment of choroidal neovascular lesions.
In ***Protocol T***, the conclusions of the study by ***DRCRnet*** is that among eyes with worse baseline VA aflibercept, on average, had superior 2-year VA outcomes compared with bevacizumab, although the difference was diminished comparing to year 1. The VA difference between aflibercept and ranibizumab that was noted at 1 year had decreased at 2 years and was no longer statistically significant. However, the reduction of the thickness shows always a better effect with aflibercept.
In the ***post hoc*** analysis of ***View 1*** and ***2***, aflibercept seems to be more effective then other anti-VEGF in case of retinal pigment epithelium detachment.

PREDSTAVITEV PRVE ZBIRKE KLINIČNIH PRIMEROV Z AFLIBERCEPTOM
PRESENTATION OF FIRST COLLECTION OF CLINICAL CASES WITH AFLIBERCEPT

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Intravitrealna farmakoterapija z zaviralci rastnih dejavnikov za endotelij žil ali t.i. zdravili anti-VEGF je v zadnjih deset letih, odkar se rutinsko uporablja v oftalmologiji, temeljito spremenila izid zdravljenja neovaskularne oblike starostne degeneracije makule in tudi makularnega edema drugih etiologij. Aflibercept v Sloveniji uporabljamo od jeseni 2013 za zdravljenje bolnikov z neovaskularno starostno degeneracijo makule (nSDM), in sicer za različne fenotipske prezentacije te bolezni. Aflibercept vse več uporabljamo tudi za edem zaradi zapore centralne vene mrežnice (CRVO) in za diabetični makularni edem (DME). Za te tri indikacije namreč zdravstvena zavarovalnica (ZZZS) krije stroške zdravljenja. Aflibercept smo sprva uporabljali predvsem pri bolnikih, pri katerih z ostalimi zdravili anti-VEGF nismo dosegli želenega funkcionalnega in morfološkega učinka, sedaj pa ga vse pogosteje uporabljamo tudi kot prvo zdravilo izbire pri indikacijah, katerih zdravljenje z zdravili anti-VEGF krije ZZZS.
V knjižici so prikazani primeri bolnikov iz vsakdanje klinične prakse. Klinični primeri so razdeljeni v tri dele, po indikaciji za zdravljenje: nSDM, CRVO in DME. Vsak del ima uvod z opisom bolezenskega stanja, temu sledijo prikazi posameznih bolnikov, in sicer anamneza, klinična slika na začetku zdravljenja, potek zdravljenja ter morfološki in funkcionalni učinek zdravljenja. Predstavljeni so značilni klinični primeri za vsako indikacijo, tako tisti, pri katerih je bilo zdravilo aflibercept prvo zdravilo izbire, kot tudi tisti, ki so bili zdravljeni že prej.
Klinični primeri so iz vseh sedmih centrov v Sloveniji, v katerih sedaj izvajamo diagnostiko in zdravljenje z zdravili anti-VEGF, saj v vseh uporabljamo tudi aflibercept: Očesna klinika Univerzitetnega kliničnega centra (UKC) Ljubljana, Oddelek za očesne bolezni UKC Maribor, Očesni oddelek Splošne bolnišnice (SB) Novo mesto, Očesni oddelek SB Celje, Oddelek za okulistiko SB "dr. Franca Derganca" Nova Gorica, Očesni oddelek SB Murska Sobota in Očesni oddelek SB Izola.

Intravitreal pharmacotherapy with vascular endothelial growth factors or "anti-VEGF drugs" has radically changed the treatment outcome for neovascular age-related macular degeneration and macular edema of other aetiologies over the last ten years of routine use in ophthalmology. Aflibercept has been used in Slovenia since autumn 2013 to treat patients with neovascular age-related macular degeneration (nAMD) for various phenotypic presentations of the disease. Furthermore, aflibercept has been increasingly used to treat macular edema secondary to central retinal vein occlusion (CRVO) and diabetic macular edema (DME). The Health Insurance Institute (ZZZS) reimburses the cost of treatment for these three indications. In the beginning, aflibercept was mainly used if the desired functional and morphological outcome was not achieved with other anti-VEGF drugs; however, it is now increasingly used as the first therapy of choice for the indications if their anti-VEGF treatment is reimbursed by the ZZZS.
The cases from regular clinical practice are presented. Clinical cases are divided into three sections according to the indication for treatment: nAMD, CRVO and DME. Each section starts with a description of the disease; then, individual cases are described including medical history, clinical picture at the start of treatment, course of treatment, and morphological and functional treatment outcome. There are descriptions of typical clinical cases for each indication when aflibercept was the first therapy of choice or when patients had been treated before.
There are clinical cases from all seven centres in Slovenia where diagnostic procedures and anti-VEGF treatment are carried out because all of them also use aflibercept: Department of Ophthalmology at the University Medical Centre (UMC) Ljubljana, Department of Ophthalmology at the UMC Maribor, Department of Ophtalmology at the General Hospital (GH) Novo mesto, Department of Ophthalmology at the GH Celje, Department of Ophthalmology at the "Dr. Franc Derganc" GH Nova Gorica, Department of Ophthalmology at the GH Murska Sobota, and Department of Ophthalmology at the GH Izola.

VITREORETINALNA KIRURGIJA
VITREORETINAL SURGERY

Moderatorja / Moderators: MOJCA GLOBOČNIK PETROVIČ, ZORAN VATAVUK

OPERACIJA S HIBRIDNIM VTISNJENJEM BELOČNICE
HYBRID SCLERAL BUCKLING SURGERY

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PURPOSE: Surgical techniques for the repair of primary retinal detachment have changed significantly in the last 30 years, moving from dominantly extraocular to dominantly intraocular procedures. During this time, the skills necessary to successfully perform scleral buckle surgery, especially indirect ophthalmoscopy, have been slowly pushed into the background. Our aim is to reveal a surgical technique which obviates the need for indirect ophthalmoscopy and enables the key steps of the surgical procedure to be performed under the operating microscope.
METHODS: Twenty seven phakic patients with primary rhegmatogenous retinal detachment presenting at our Clinic were prospectively enrolled. In all patients we performed the following procedure under general anaesthesia: placement of a 2 mm scleral buckle (Type 40, ***D.O.R.C. International***, Netherlands), creation of a 23G ***pars plana*** sclerotomy for the light source, inspection of the retina using indirect wide field non-contact loupe (BIOM, ***Oculus Optikgeräte***, Wetzlar, Germany) and operating microscope, drainage of subretinal fluid, cryopexy of retinal break/s under the control of the operating microscope and injection of SF6 at the end of the procedure.
RESULTS: Primary success, defined as a completely attached retina, was achieved in 25/27 participants. In the remaining two participants retina was attached after additional procedure. The reasons for failure in those two participants were the development of PVR in one case and incorrectly positioned scleral buckle leading to "fish mouthing" of the retinal break in the second case. No complications related to the ***pars plana*** sclerotomy were noted.
CONCLUSIONS: The hybrid scleral buckling surgical technique, combining elements of both "worlds", eliminates the biggest disadvantage of indirect ophthalmoscopy, namely poor visualization of the retinal periphery during retinal break localization and subretinal fluid drainage.

GENSKI POLIMORFIZMI, POVEZANI S PROLIFERATIVNO VITREORETINOPATIJO, PRI SLOVENSKI IN EVROPSKI POPULACIJI

DIFFERENCES IN THE DISTRIBUTION OF GENOTYPES IN THE PROLIFERATIVE VITREORETINOPATHY *SNPs* IN SLOVENIAN AND OTHER EUROPEAN POPULATIONS

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NAMEN: Raziskati razlike v porazdelitvi genotipov med 36 polimorfizmov posameznih nukleotidov (SNP), povezanimi s proliferativno vitreoretinopatijo (PVR), v slovenski populaciji in porazdelitev genotipov primerjati s porazdelitvijo genotipov v nekaterih evropskih populacijah, katerih podatki so dostopni v sklopu projekta "1000 genomes project".
METODE: V raziskavo smo vključili 96 krvodajalcev in 113 bolnikov, pri katerih se je po operativnem posegu razvila PVR stopnje C1 ali več. Podatke o porazdelitvi genotipov 36 SNP-jev v evropski populaciji smo pridobili iz prosto dostopne baze podatkov ***Ensembl***, različica 83. Primerjavi porazdelitve genotipov pri 36 SNP-jih med slovensko in evropsko populacijo je sledila analiza tistih SNP-jev, pri katerih smo dokazali statistično pomembne razlike: slovensko populacijo smo nadalje primerjali s tremi evropskimi podskupinami: 99 prebivalci Zvezne ameriške države Utah, ki imajo prednike v Severni in Zahodni Evropi (CEU), 91 prebivalci Britanije, Anglije in Škotske (GBR) ter 107 Iberci v Španiji (IBS). Med seboj smo primerjali tudi GBR in IBS. Nadalje smo med 96 krvodajalci in 133 bolniki s PVR primerjali tudi porazdelitev genotipov treh SNP-jev, in sicer: rs17561 (IL1A), rs2069763 (IL2) in rs1800629 (TNF).
REZULTATI: Izmed 36 SNP-jev smo statistično pomembne razlike v porazdelitvi genotipov med slovensko in evropsko populacijo odkrili pri 6 SNP-jih: rs315952 (IL1RN) p = 0,0038, rs3024498 (IL10) p = 0,0055, rs3138045 (NFKB1A) p = 0,047, rs3138056 (NFKB1A) p = 0,0055, rs7656613 (PDGFRA) p = 0,012 in rs1891467 (TGFβ2) p = 0,038. Porazdelitev genotipov rs315952 (IL1RN) se je razlikovala med SLO in CEU (p = 0,037), SLO in GBR (p = 0,005) ter SLO in IBS (p = 0,0008), medtem ko razlik med GBR in IBS nismo odkrili. Porazdelitev genotipov rs1891467 (TGFβ2) se je razlikovala med SLO in CEU (p = 0,011), SLO in GBR (p = 0,001), med SLO in IBS (p = 0,022) ter med GBR in IBS (p = 0,0001). Pri rs3024498 (IL10) smo odkrili razlike v porazdelitvi genotipov med SLO in GBR (p = 0,0049), SLO in IBS (p = 0,013) ter med GBR in IBS (p = 0,0006). Razlike v porazdelitvi genotipov pri rs3138056 (NFKB1A) smo odkrili med SLO in CEU (p = 0,0075) ter med SLO in IBS (p = 0,0078). Pri SNP-ju rs3138045 (NFKB1A) smo odkrili razlike med SLO in IBS (p = 0,012) ter med GBR in IBS (p = 0.025), medtem ko smo pri rs7656613 (PDGFRA) odkrili razlike med SLO in CEU (p = 0,035) ter med SLO in GBR (p = 0,011). Dodatno smo z našo analizo pokazali, da so statistično pomembne razlike med porazdelitvijo genotipov med 96 krvodajalci in 113 bolniki s PVR pri rs17561 v genu IL1A (p = 0,036) ter rs1800629 v genu TNF (p = 0,027).
ZAKLJUČEK: Rezultati naše raziskave so pokazali, da se porazdelitev genotipov med evropskimi populacijami signifikantno razlikuje v relativno velikem deležu SNP-jev, v primerjavi z razlikami, ki jih najdemo v porazdelitvi genotipov med slovenskimi zdravimi primerjalnimi osebami in bolniki s PVR. V naši raziskavi smo potrdili povezavo le dveh SNP-jev s PVR: rs1800795 v genu IL6 in rs1800471 v genu TGFβ1. Izsledki naše raziskave potrjujejo, da je v primerih, ko genskih povezav polimorfizmov ne moremo ponovno dokazati pri določeni populaciji, potrebno preveriti tudi interakcije z drugimi polimorfizmi, še posebej kadar proučujemo klinične vzorce, ki smo jih pridobili iz skupine ljudi z različnim etničnim ozadjem ali iz različnih geografskih področij.

PURPOSE: To investigate the distribution of genotypes within 36 single nucleotide polymorphisms (SNPs) associated with proliferative vitreoretinopathy (PVR) in Slovenian population and compare genotype frequencies with frequencies published in some other European populations within 1000 genome project.

METHODS: A total of 96 healthy controls and 113 patients, who developed PVR grade C1 or more within three months after the surgery for rhegmatogenous retinal detachment were enrolled in our study. Data on genotype distributions of 36 SNPs from 503 European individuals was obtained from the Ensembl database, release 83. Firstly, genotype distributions of 36 SNPs were compared between 96 healthy Slovenian controls and 503 European individuals, followed by a more in-depth investigation for SNPs, which exhibited a statically significant difference in their distribution. Those SNPs were additionally evaluated on 3 European subpopulations: 99 Utah residents with Northern and western European ancestry (CEU), 91 residents from Britain in England and Scotland (GBR), and 107 Iberian residents from Spain (IBS) and between GBR and IBS, respectively. Finally, genotype distributions in 3 SNPs (rs17561 (IL1A), rs2069763 (IL2) and rs1800629 (TNF)) were compared between 96 healthy controls and 113 patients with PVR.
RESULTS: Among 36 SNPs investigated between Slovenian population and European population, significant differences in genotype distributions were found in 6 SNPs: rs315952 (IL1RN) p = 0.0038, rs3024498 (IL10) p = 0.0055, rs3138045 (NFKB1A) p = 0.047, rs3138056 (NFKB1A) p = 0.0055, rs7656613 (PDGFRA) p = 0.012 and rs1891467 (TGFβ2) p = 0.038. Distributions of genotype rs315952 (IL1RN) varied between SLO and CEU (p = 0.037), SLO and GBR (p = 0.005) and SLO and IBS (p = 0.0008), while the differences between GBR and IBS were not observed. Distributions of genotype rs1891467 (TGFβ2) varied between SLO and CEU (p = 0.011), SLO and GBR (p = 0.001) and SLO and IBS (p = 0.022), as well as between GBR and IBS (p = 0.0001). Differences in the distribution of genotypes for the SNP rs3024498 (IL10) were observed between SLO and GBR (p = 0.0049), SLO and IBS (p = 0.013) and between GBR and IBS (p = 0.0006). For the SNP rs3138056 (NFKB1A), differences between SLO and CEU (p = 0.0075) and between SLO and IBS (p = 0.0078) were observed. The differences in the distributions of genotypes for the SNP rs3138045 (NFKB1A) were observed between SLO and IBS (p = 0.012) and GBR and IBS (p = 0.025), while the distributions of genotypes for the SNP rs7656613 (PDGFRA) differed between populations of SLO and CEU (p = 0.035) and SLO and GBR (p = 0.011). In addition, our analysis showed statistically significant differences in genotype distributions between 96 healthy controls and 113 PVR patients in rs17561 of the IL1A gene (p = 0.036) and of the TNF gene (p = 0.027).
CONCLUSIONS: Our study revealed that genotype distributions in many of 36 investigated SNPs vary significantly among Europeans in comparison to genotype distributions among PVR patients and Slovenian healthy controls. We did replicate associations in only two of investigated PVR SNPs: rs1800795 of the IL-6 gene and rs1800471 of the TGF-β1. Polymorphisms that fail to replicate should be checked for interactions with other polymorphisms, particularly when samples are collected from groups with distinct ethnic backgrounds or different geographic regions.

ZDRAVLJENJE PRIMARNEGA REGMATOGENEGA ODSTOPA MREŽNICE Z VITREKTOMIJO *PARS PLANA*
PARS PLANA VITRECTOMY FOR PRIMARY RHEGMATOGENOUS RETINAL DETACHMENT

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NAMEN: Predstavitev klinične slike, funkcionalnega in anatomskega izida zdravljenja regmatogenega odstopa mrežnice z vitrektomijo *pars plana*.
METODE: Retrospektivna neprimerjalna raziskava zaporednih pacientov z regmatogenim odstopom mrežnice, ki so bili oskrbljenimi z vitrektomijo *pars plana* 23 gauge v obdobju med januarjem 2014 in decembrom 2015. Pregledali smo medicinsko dokumentacijo 80 pacientov (81 oči) s primarnim regmatogenim odstopom mrežnice. Pri vseh je bila napravljena primarna vitrektomija z zamenjavo tekočine z zrakom, tamponado s plinom ali silikonskim oljem in lasersko retinopeksijo. V analizo smo vključili naslednje podatke: starost, spol, trajanje simptomov, vzroke odstopa mrežnice, predoperativni klinični pregled, intraoperativne podatke (vrsta tamponade: plin ali silikonsko olje). Stanje bolnikov smo sledili po posegu še vsaj 6 mesecev. Primerjali smo predoperativno in pooperativno najboljšo korigirano vidno ostrino kot tudi anatomsko uspešnost zdravljenja.
REZULTATI: V raziskavo je vključenih 55 moških in 26 žensk (razmerje spolov: 2,1). Med spoloma ni bilo statistično značilne razlike v starosti (ženske: 60,3 ± 15,6; moški: 61,3 ± 10,9; p = 0,739), v trajanju simptomov (ženske: 7 (2–356), moški: 7 (1–712); p = 0,284), predoperativno vidno ostrino (ženske: 1,29 ± 1,07; moški: 1,3 ± 1,04; p = 0,996) in predoperativnim statusom proliferativne vitreoretinopatije (PVR) (ženske: 11,5 % PVR; moški: 12,7 % PVR; p = 0,88). Predoperativni status leče ni pokazal statistično pomembne razlike med moškimi (45,5 % psevdofakih) in ženskami (34,6 % psevdofakih) (p = 0,356). Ob koncu operacije so pacienti prejeli plinsko tamponado (n = 67; ženske: 96,2 %; moški: 76,4 %) ali tamponado s silikonskim oljem (n = 13; ženske: 3,8 %; moški: 21,8 %) (p = 0,038). Anatomski izid po najmanj 6 mesecih spremljanja je bil 96,3 % (ženske: 100 %; moški: 94,5 %; p = 0,228).
ZAKLJUČEK: S primarno vitrektomijo *pars plana* je bila dosežena visoka stopnja naleganja mrežnice tako s plinsko tamponado kot s tamponado s silikonskim oljem.

PURPOSE: To review the clinical features, functional and anatomical outcomes of primary rhegmatogenous retinal detachment (RRD) managed by *pars plana* vitrectomy (PPV).
METHODS: A retrospective non-comparative analysis of consecutive patients with RRD managed by 23 gauge PPV from January 2014 to December 2015. Chart data analysis revealed 81 eyes (80 patients) with primary RRD. All patients underwent primary vitrectomy with complete fluid air exchange, gas or silicone oil (SO) tamponade, and laser retinopexy. Data analyzed from medical records included: age, gender, duration of symptoms, causes of detachment, preoperative clinical examination, intraoperative data (intraocular tamponade agent: gas tamponade or SO tamponade). A minimum of 6 moths follow-up was performed. Preoperative and postoperative best corrected visual acuity (BCVA) will be compared. Retinal re-detachment rate will be revealed.
RESULTS: There were 55 male and 26 female patients (sex ratio: 2.1). Between the gender groups there was no statistically significant difference in terms of age (female: 60.3 ± 15.6; male: 61.3 ± 10.9; p = 0.739), median duration of symptoms (female: 7 (2–356), male: 7 (1–712); p = 0.284), preoperative BCVA (female: 1.29 ± 1.07; male: 1.3 ± 1.04; p = 0.996) and preoperative proliferative vitreoretinopathy (PVR) status (female: 11.5% PVR; male: 12.7% PVR; p = 0.88). The preoperative lens status showed a non-statistically significant difference between the male (45.5% pseudophakic) and female (34.6% pseudophakic) group (p = 0.356). At the end of the surgery patients received either gas (n = 67; female: 96.2%; male: 76.4%) or SO (n = 13; female: 3.8%; male: 21.8%) tamponade (p = 0.038). The anatomical success rate after primary PPV during the 6 months follow-up period was 96.3% (female: 100%; male: 94.5%; p = 0.228).
CONCLUSIONS: High anatomical success rate of primary vitrectomy for RRD was achieved with both gas and SO tamponade.

ZDRAVLJENJE VITREOMAKULARNE TRAKCIJE Z INTRAVITREALNO APLIKACIJA PLINA *C3F8*
INTRAVITREAL INJECTION OF *C3F8* GAS FOR THE TREATMENT OF VITREOMACULAR TRACTION

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NAMEN: Proučiti učinkovitost enkratne intravitrealne aplikacije ekspanzivnega plina za sprostitev vitreomakularne trakcije (VMT).
METODE: Doslej smo v 10 oči 9 pacientov s simptomatsko VMT z adhezijo velikosti 50–700 mĐ na optični koherentni tomografiji *spectral-domain* (SD OCT) enkratno aplicirali 0,3 ml 100-odstotnega perfluoropropana (C3F8) intravitrealno kot alternativo vitrektomiji *pars plana* (PPV). Primarni izid raziskave je število oči s popolno sprostitvijo VMT na OCT 1 mesec po aplikaciji. Sekundarni izid so sprememba vidne ostrine (V), kontura fovee in centralna debelina mrežnice (CRT) 1 mesec po aplikaciji in pa končna vidna ostrina.
REZULTATI: V 1 mesecu po aplikaciji je do popolne sprostitve VMT prišlo pri 6 od 8 oči (75 %), Pri ostalih 2 očeh, od katerih je imelo eno pridruženo epiretinalno membrano, se je velikost adhezije VMT zmanjšala. Vse oči (100 %) so imele zmanjšano CRT. Pri 2 očeh je intraoperativno plin prešel v sprednji prekat, zato sta bili iz raziskave izključeni. V raziskavo še vedno vključujemo nove bolnike, zato dokončni rezultati sledijo.
ZAKLJUČEK: Intravitrealna aplikacija C3F8 bi lahko predstavljala minimalno invazivno alternativo PPV pri pacientih s simptomatsko in persistentno VMT.

PURPOSE: To study the efficacy of a single intravitreal injection of expansive gas in releasing vitreomacular traction (VMT).
METHODS: So far, 10 eyes of 9 patients with symptomatic VMT of 50–700 mĐ on spectral-domain optical coherence tomography (SD OCT) received a single intravitreal injection of 0.3 mL 100% perfluoropropane (C3F8) as an alternative to *pars plana* vitrectomy (PPV). Primary outcome was the number of eyes with complete VMT release on OCT 1 month following treatment. Secondary outcomes included changes in visual acuity (VA), foveal contour and central retinal thickness (CRT), 1 month following treatment, and final VA.
RESULTS: One month after application there was complete release of VMT on OCT in 6 out of 8 eyes (75%). In the remaining 2 eyes, one of which also had an epiretinal membrane, VMT was diminished. All eyes (100%) had a decrease in CRT. In 2 eyes, gas shifted into the anterior chamber intraoperatively, hence they were excluded from the study. It is an ongoing study with more patients being included, so further results are awaited.
CONCLUSIONS: Intravitreal C3F8 injection could offer a minimally invasive alternative to PPV in patients with symptomatic and persistent VMT.

ZDRAVLJENJE PERZISTENTNEGA FORAMNA MAKULE
TREATMENT OF A PERSISTENT MACULAR HOLE

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NAMEN: Prikazati uspeh reoperacije pri perzistentnem idiopatskem foramnu makule po primarni vitrektomiji.
METODE: Retrospektivna raziskava 10 bolnikov s perzistentnim foramnom makule. Bolniki so imeli zaradi idiopatskega foramna makule narejeno vitrektomijo z luščenjem membrane limitans interne (MLI). Ker po posegu ni prišlo do zaprtja foramna, smo naredili sekundarno vitrektomijo: pri 4 s ponovno tamponado s plinom, pri 2 s silikonskim oljem, pri 4 pa translokacijo MLI s periferije v perzistentni foramen in plinsko tamponado. Pri vseh bolnikih smo naredili predoperativni in pooperativni OCT. Opazovali smo anatomsko zaprtje foramna in izboljšnje vidne ostrine.
REZULTATI: Razpravljali bomo o deležu anatomskega zaprtja foramna in izboljšanju vidne ostrine.
ZAKLJUČEK: Bolniki lahko z zaprtjem perzistentnega foramna po reoperaciji pridobijo vidno ostrino.

PURPOSE: To report on a series of cases and success rate of reoperation of idiopathic full-thickness macular hole remaining open after initial vitrectomy.
METHODS: In a retrospective case series, 10 patients with persistent macular hole after primary vitrectomy with internal limiting membrane (ILM) peeling and gas tamponade underwent a repeated surgery. A second vitrectomy was performed. Intravitreal gas tamponade was used in 4 cases and silicone oil tamponade in 2 cases. In 4 cases, ILM translocation from the periphery to persistent macular hole combined with gas tamponade was made. Preoperative and postoperative OCT was undertaken in all eyes. The main outcome measures were anatomical closure and improvement in best corrected visual acuity (BCVA).
RESULTS: The rate of anatomical closure and BCVA improvement will be discussed.
CONCLUSIONS: Patients could benefit from repeated surgery in terms of the macular hole closure and visual acuity improvement.

GLAVKOM
GLAUCOMA

Moderatorici / Moderators: BARBARA CVENKEL, KATIA NOVAK LAUŠ

IMPLANTACIJA AHMEDOVE VALVULE PRI NEODZIVNEM OTROŠKEM GLAVKOMU
AHMED VALVE IMPLANTATION IN REFRACTORY PAEDIATRIC GLAUCOMA

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AIM: To evaluate the efficacy of the ***Ahmed Glaucoma Valve*** implant in paediatric patients with refractory glaucoma.
METHODS: A retrospective chart review was conducted of 10 eyes from 9 consecutive paediatric patients (younger than 5 years) with refractory glaucoma treated with ***Ahmed Glaucoma Valve*** implant placement. The main outcome measured was time after surgery without failure. Success was defined as the intraocular pressure of 21 mmHg or less without visually devastating complications or additional glaucoma surgery (tube revision). In a subset of eyes, cycloablation, trabeculectomy, trabeculotomy or combined trabecuotomy with trabeculectomy procedure were performed previously.
RESULTS: Follow-up of patients was 3 to 32 months (mean 12.6 ± 7.8 months). Intraocular pressure was reduced from a preoperative mean values of 32.8 ± 4.2 mmHg to 18.7 ± 5.6 mmHg at 12 months postoperatively. Cumulative probabilities of success by Kaplan-Meier analysis were 100% at the same time. Five eyes (60%) required glaucoma medication after surgery. Corneal-tube contact as a complication occurred in two eyes (20%). There was not a case in which anterior chamber reformation was required. Suprachorioidal haemorrhage occurred in one aphakic eye intraoperatively.
CONCLUSIONS: Based on our experiences, the ***Ahmed Glaucoma Valve*** implantation is useful for the treatment of refractory paediatric glaucoma and shows success in intraocular pressure control. However, there is relatively high complication rate which limits overall success.

PNEVMATSKA TONOMETRIJA, NAPRAVLJENA PREK MEHKIH KONTAKTNIH LEČ
REBOUND TONOMETRY OVER SOFT CONTACT LENSES

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PURPOSE: To assess the accuracy of intraocular pressure (IOP) measurements using rebound tonometry over hydrogel and silicone hydrogel contact lenses (CLs) of different powers.
METHODS: This study included 100 patients, all habitual wearers of hydrogel and silicone hydrogel CLs, and none previously diagnosed with glaucoma, ocular hypertension or anterior surface disease. Five IOP measurements were taken over each eye using a rebound tonometer (*ICare*), with soft CLs *in situ* and then repeated without CLs. Lens powers ranged from -7.50D to +6.00D.
RESULTS: A good correlation was found between IOP measurements with and without CLs. The mean difference (+/- SD) between IOP measurements with (mean 16.00 ± 1.60 mmHg) and without (mean 16.10 ± 1.80 mmHg) CLs was found to be ± 0.87 mmHg ($p < 0.05$). Statistical analysis was performed using the paired t-test and a correlation coefficient was calculated.
CONCLUSIONS: We have shown good reliability of IOP measurements over CLs of different materials and thickness profiles while using rebound tonometer which makes it a feasible and accurate method for clinical purposes.

BAERVELDTOVA GLAVKOMSKA VALVULA KOT TERAPIJA IZBORA ZA ZDRAVLJENJE SEKUNDARNEGA GLAVKOMA PO ZGODNJI OPERACIJI PRIROJENE SIVE MRENE

MANAGEMENT OF SECONDARY GLAUCOMA AFTER CONGENITAL CATARACT SURGERY WITH BAERVELDT GLAUCOMA VALVE.

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UVOD: Pri otrocih, ki so bili v prvem letu starosti operirani zaradi prirojene sive mrene in je kasneje prišlo do sekundarnega glavkoma, ki je bil zdravljen z vstavitvijo Baerveldtove glavkomske valvule (BGV), smo ocenjevali očesni tlak (IOP), število zapletov, število potrebnih dodatnih posegov in dejavnike tveganja za slab izid posega.
METODE: V raziskavo so bili vključeni vsi otroci, ki so bili v obdobju med novembrom 2010 in decembrom 2015 na Očesni kliniki v Ljubljani operativno zdravljeni zaradi sekundarnega glavkoma po zgodnji operaciji prirojene sive mrene in jim je bila vstavljena 250 BGV. V raziskavo je bilo vključenih 15 oči 11 otrok. Razdelili smo jih v dve skupini: afaki (4) in psevdofaki (11). Kirurška tehnika je bila primerljiva pri vseh očeh in je vključevala skleralni tunel, skozi katerega je bila cevka BGV uvedena v sprednji prekat. Če je bil doseženi IOP med 6 in 18 mmHg, je bil uspeh opredeljen kot zadovoljiv.
REZULTATI: Povprečna starost ob vstavitvi BGV je bila 42 ± 29 mesecev (razpon: 8 mesecev do 6,5 let). Zadovoljivi IOP je bil dosežen pri 11/15 očeh (73 %), od tega pri 3 od 4 afakih in pri 8 od 11 psevdofakih. Povprečno smo ga sledili 30 mesecev (razpon 6–66 mesecev). Vsaj en dodatni operativni poseg je bil potreben pri 6/15 očeh (40 %), pri 3 afakih in pri 3 psevdofakih: pri 4 očeh dodatni šivi, pri 1 očesu skrajšava cevke BGV, pri 1 pa je bila potrebna vitrektomija zaradi odstopa žilnice in mrežnice. Postoperativna hipotonija v prvem tednu po vstavitvi BGV je bila dejavnik tveganja za slab izid posega.
ZAKLJUČKI: Raziskava je pokazala, da izboljšana kirurška tehnika, ki vključuje tesen skleralni tunel in dobro začasno zaprtje cevke BGV, ob pravočasno izvedenem posegu, omogoča dobro obvladanje očesnega tlaka pri skoraj 8 oči otrok s sekundarnim glavkomom po zgodnji operaciji prirojene sive mrene.

INTRODUCTION: We evaluated the intraocular pressure (IOP), complications, secondary procedure rates and risk factors for failure following Baerveldt glaucoma valve (BGV) implantation in paediatric eyes with secondary glaucoma who underwent congenital cataract surgery before age one.
METHODS: All children with secondary glaucoma after congenital cataract surgery who underwent BGV 250 implantation from November 2010 to December 2015 at the Eye Hospital in Ljubljana, Slovenia, were included in the study: 15 eyes of 11 children were studied and divided in two groups: aphakic (4) and pseudophakic eyes (11). The surgical technique was similar in all cases and included tight scleral tunnel tube insertion. Successful IOP control was achieved when IOP ranged from 6 to 18 mmHg.
RESULTS: Mean age at BGV implantation was 42 ± 29 months (range: 8 months to 6.5 years). Successful IOP control was achieved in 11/15 eyes (73%): 3/4 aphakic and 8/11 pseudophakic, after a mean follow up of 30 months (range 6 to 66 months). At least one secondary procedure was required in 6/15 eyes (40%), 3/4 aphakic and 3/11 pseudophakic: additional suturing due to postoperative hypotony (4 eyes), tube shortening (1 eye), and ***pars plana*** vitrectomy due to the retinal and choroidal detachment (1 eye). Postoperative hypotony was a risk factor for tube failure.
CONCLUSIONS: We believe that improved surgical technique with a tight scleral tunnel and good temporary closure of the tube, as well as proper timing of the procedure contribute to a successful outcome. BGV implantation achieved successful IOP control in almost 73% of the eyes with secondary glaucoma after congenital cataract surgery.

PRIMERJAVA DEBELIN KOMPLEKSA GANGLIJSKIH CELIC IN VLAKEN MREŽNIČNEGA ŽIVCA PRI LJUDEH S PRIMARNIM ODPRTOKOTNOM GLAVKOMOM, Z OČESNO HIPERTENZIJO IN PRI ZDRAVIH

COMPARISON OF GANGLION CELL COMPLEX THICKNESSES AND RETINAL NERVE FIBER LAYER THICKNESS IN PATIENTS WITH PRIMARY OPEN-ANGLE GLAUCOMA, OCULAR HYPERTENSION AND HEALTHY SUBJECTS

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AIM: To compare the retinal nerve fibre layer (RNFL) and ganglion cell complex (GCC) layer thicknesses in patients with primary open angle glaucoma (POAG), ocular hypertension and healthy subjects using spectral domain optical coherence tomography (SD-OCT) and to investigate the role of GCC layer thickness in early glaucoma detection.

PATIENTS AND METHODS: Cross-sectional comparative study. Patients are divided in 4 groups. First group consists of individuals with ocular hypertension with intraocular pressure > 21 mmHg (but not more than 30 mmHg) and without glaucomatous visual field (VF) changes. Second group consists of subjects with early primary open angle glaucoma. Third group are patients with moderate to severe primary open angle glaucoma. Fourth group are normal healthy subjects with normal optic nerve head (ONH) and VF appearance. All the patients will undergo a full ophthalmic examination, standard automatic perimetry *Octopus 900 G2* program, and SD-OCT. RNFL and GCC thickness, also ONH parameters, will be determined and compared between the groups. The inclusion criteria include best corrected visual acuity at least 0.6 with spherical refractive error between +3, 00 and -6, 00. Patients with any kind of retinal pathology, retinal laser procedure, retinal surgery, moderate and advance cataract, other ocular diseases except glaucoma and neurologic diseases will be excluded.

RESULTS: Preliminary study results show difference in the GCC layer and RNFL thickness values among groups and the final results will be presented at the Meeting.

CONCLUSIONS: In glaucoma, structural changes appear prior to functional defects. It is considered that the retinal ganglion cell (RGC) loss is 30–50% before visual field defects occur. An objective method used for RGC estimation is the ganglion cell complex (GCC) thickness, performed by SD-OCT. Since GCC can estimate RGC, it might also detect early structural changes and enable early glaucoma detection.

Na povabilo družbe / Invited by Medis

UČINKOVITOST, KI JE VREDNA VEČ
EFFECTIVENESS WITH ADDED VALUE

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Glavkomski bolniki, ki si kapajo antiglavkomske kapljice, imajo pogosto spremljajočo bolezen očesne površine. Ugotovili so, da je konzervans – največkrat benzalkonijev klorid – glavni krivec za pojav simptomov suhega očesa. Dolgotrajna topična terapija s konzervansi povzroči toksično-vnetne spremembe očesne površine in je dejavnik tveganja za neuspeh filtracijske operacije. Številne raziskave so potrdile, da zamenjava prostaglandinskih kapljic s konzervansi s kapljicami brez konzervansa zmanjša subklinično vnetje veznice ter simptome in znake suhega očesa in poveča verjetnost boljše adherence zdravljenja.

Glaucoma patients using topical drugs frequently suffer from concomitant ocular surface disease. It has been shown that the preservative – mostly benzalkonium chloride – is the causative agent leading to the symptoms of dry eye. Chronic treatment with preserved topical drugs induces toxic-inflammatory changes of ocular surface and represents a risk factor for filtering surgery failure. Several studies have confirmed that switching from preserved to preservative-free prostaglandin eye drops decreases subclinical inflammation of conjunctiva, reduces the symptoms and signs of dry eye, and increase the likelihood of good treatment adherence.

UVEDBA SELEKTIVNE LASERSKE TRABEKULOPLASTIKE V SPLOŠNO OČESNO AMBULANTO

INTRODUCTION OF SELECTIVE LASER TRABECULOPLASTY IN GENERAL OPHTHALMOLOGY PRACTICE

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NAMEN: Predstaviti uporabo selektivne laserske trabekuloplastike (SLT) v splošni očesni ambulanti.
METODE: Pri pacientih z očesno hipertenzijo ali glavkomom odprtega zakotja, pri katerih smo med oktobrom 2014 in decembrom 2015 izvedli SLT, smo retrospektivno analizirali indikacije za poseg, stranske pojave, znižanje očesnega tlaka in zmanjšanje potrebe po topični glavkomski terapiji po 2 in 6 mesecih.
REZULTATI: V raziskavo je bilo vključenih 54 zaporednih pacientov (102 oči). Najpogostejša diagnoza pred posegom je bila primarni glavkom odprtega zakotja (89 oči, od teh 7 normotenzivni glavkom, 12 suspektni glavkom in 4 novo odkriti glavkom). V 7 očeh je bila odkrita hipertenzija, v 4 psevdoeksfoliativni glavkom in v 2 pigmentni glavkom. Najpogostejša glavna indikacija za poseg je bila dodatno znižanje očesnega tlaka ob nadaljevanju topične terapije (25 pacientov), nato zmanjšati ali ukiniti topično glavkomsko terapijo zaradi stranskih pojavov (23 pacientov), pri štirih pacientih smo se za SLT odločili kot primarno zdravljenje, pri 2 pacientih je bila SLT svetovana zaradi slabe sodelovalnosti pri aplikaciji topične terapije. Povprečni očesni tlak se je znižal z 20,5 mmHg (predoperativno) na 16,3 mmHg (po 2 mesecih, n = 102) in 16,1 mmHg (po 6 mesecih, n = 61). Povprečno število predpisanih glavkomskih topičnih zdravil se je 6 mesecev po posegu zmanjšalo z 1,59/dan na 1,22/dan (n = 61). V 1 primeru je po posegu prišlo do hiposfagme, v 2 primerih do prehodnega anteriornega uveitisa.
ZAKLJUČEK: Uvedba SLT v splošno očesno ambulanto lahko pripomore k boljši oskrbi pacientov z očesno hipertenzijo ali glavkomom odprtega zakotja. Posebej koristi tistim, ki potrebujejo dodatno znižanje očesnega tlaka, in tistim, ki topično glavkomsko terapijo slabo prenašajo.

PURPOSE: To present application of selective laser trabeculoplasty (SLT) in general ophthalmology practice.
METHODS: In this retrospective study in glaucoma patients receiving SLT between October 2014 and December 2015, indications for intervention, side effects, intraocular pressure (IOP) drop and the need for additional topical medications were evaluated 2 and 6 months after surgery.
RESULTS: Data of 102 eyes (54 consecutive patients with ocular hypertension or open angle glaucoma) were analysed. Most frequent diagnosis was open angle glaucoma (89 eyes, 7 of them with low-tension glaucoma, 12 suspect glaucoma and 4 newly discovered glaucoma). Seven eyes presented with ocular hypertension, 4 with pseudoexfoliative glaucoma and 2 with pigment glaucoma. Most frequent indication for the intervention was the need for additional IOP drop with continuation of topical medications (25 patients), 23 patients needed SLT for additional IOP drop with topical medication reduction or discontinuation due to drug side effects. SLT was performed as primary treatment in 4 patients and due to poor compliance in 2 patients. The average IOP drop was from 20.5 mmHg (baseline) to 16.3 mmHg after 2 months (n = 102) and 16.1 mmHg after 6 months (n = 61). Average number of prescribed glaucoma drops dropped after 6 months from 1.59/day to 1.22/day (n = 61). There weres 1 case of hyposphagma and 2 cases of mild anterior uveitis.
CONCLUSIONS: Introduction of SLT in general ophthalmology practice could provide better care for glaucoma patients, especially for those who need additional IOP drop or have low tolerance for topical glaucoma medicine.

OBČUTLJIVOST ZA KONTRAST GLAVKOMSKIH PACIENTOV IN NJEN VPLIV NA HITROST BRANJA
CONTRAST SENSITIVITY IN GLAUCOMA PATIENT AND ITS INFLUENCE ON READING SPEED

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NAMEN: Kontrastna senzitivnost se zmanjšuje s starostjo in tudi pri nekaterih očesnih boleznih. V naši raziskavi smo preučevali centralno kontrastno senzitivnost pri glavkomskih bolnikih in njen vpliv na hitrost branja.
METODE: V raziskavo smo vključili glavkomske bolnike in zdrave preiskovance, stare 50–70 let, s korigirano vidno ostrino na boljšem očesu ≥ 0.8 po Snellenu. Kontrastno senzitivnost smo merili s Sloanovimi tabelami na razdalji 1 m. Glavkom smo opredelili s kliničnim pregledom in preiskavo vidnega polja s standardno avtomatsko perimetrijo ***Octopus***. Hitrost branja smo določili s standardiziranimi tabelami ***International Reading Speed Text*** (IReST).
REZULTATI: Bolniki z glavkomom so imeli manjšo kontrastno senzitivnost kot zdrava primerjalna skupina. Osebe z zmanjšano kontrastno senzitivnostjo so imele večjo spremembo v hitrosti branja kot tisti z normalno kontrastno senzitivnostjo.
ZAKLJUČEK: Kljub dobri centralni vidni ostrini imajo glavkomski bolniki težave z branjem zaradi zmanjšane kontrastne senzitivnosti.

PURPOSE: Contrast sensitivity is one of the visual functions that declines with age as well as with other eye disease. Central contrast sensitivity in glaucoma patients and its influence on reading speed were investigated in this study.
METHODS: Glaucoma patients and a healthy control group, aged between 50 and 70 years, with the better-eye Snellen visual acuity ≥ 0.8, were included in the study. Contrast sensitivity was controlled with ***Pelli Robson Contrast Sensitivity Chart***. Glaucoma was confirmed or excluded with eye examination and visual fields control with the ***Octopus*** standard automated perimetry. Reading performance was measured with the standardized ***International Reading Speed Texts*** (IReST).
RESULTS: Patients with glaucoma disease had decreased contrast sensitivity compared to the healthy control group. People with decreased contrast sensitivity had a greater change in reading speed than those with normal contrast sensitivity.
CONCLUSIONS: Despite good central vision glaucoma patients have reading problems because of the impaired contrast sensitivity.

ZUNANJI OČESNI DELI, ORBITA, OKULOPLASTIKA

EXTRAOCULAR STRUCTURES, ORBIT, OCULOPLASTIC SURGERY

Moderatorja / Moderators: BRIGITA DRNOVŠEK-OLUP, GREGOR HAWLINA

ZDRAVLJENJE ZAHTEVNIH PRIMEROV POSTENUKLEACIJSKEGA SINDROMA
MANAGEMENT OF "UNRESOLVED" CASES OF PESS

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NAMEN: Predstaviti možnosti zdravljenja najzahtevnejših primerov postenukleacijskega sindroma, pri katerih je bilo za dosego cilja potrebnih več kirurških posegov.
METODE: Predstavljeni bodo primeri bolnikov, ki so bili kirurško zdravljeni na Očesni kliniki zaradi postenukleacijskega sindroma. Pri prikazanih bolnikih je bila primarna kirurška terapija neuspešna. Pri vseh se je postenukleacijski sindrom v različnih oblikah ponovil, ali pa se ni popravil kljub skrbno izbranemu kirurškem postopku, kot so implantacija orbitalnega implanta, kožno-mišičnega presadka, transplantacija ustne sluznice, kože ali amnijske membrane, injekcija maščobe, bioplastika, hialurona ipd. Več omenjenih postopkov smo uporabili pri nekaterih bolnikih z delnim ali celo ničelnim uspehom. Vzroki za neuspeh so bili: zavrnitve presadkov, ekstruzija implanta, brazgotinjenje in krčenje očesne vrečke, zarastline itd.
REZULTATI: Pri vsakem od predstavljenih bolnikov smo uporabili različne postopke v več posegih. Do želenega rezultata, nošenja očesne proteze, smo prišli postopoma.
ZAKLJUČEK: Kirurško zdravljenje PES je še vedno velik izziv z nepredvidljivimi rezultati. Kljub dolgoletnim izkušnjam rezultati niso vedno odlični. Zdravljenje zahteva potrpljenje bolnika in kirurga, saj je sestavljeno iz večih posegov in zahteva čas. Raziskave etiologije in patologije postenukleacijskega sindroma bodo pripomogle k boljšemu razumevanju PES, njegovemu preprečevanju in zdravljenju.

PURPOSE: To present treatment possibilities of resistant cases of PESS, which recurred or did not respond to single treatment despite the use of various modalities.
METHODS: The review includes patients who were referred to a tertiary centre for treatment of PESS. In these patients, PESS recurred or did not even primarily respond to the selected treatment modality, which included: implantation of orbital implant, dermis-fat graft, transplantation of oral mucosa, skin or amniotic membrane; fat injection, bioplastic injection etc. Several modalities of treatment were used in each of the presented patient with only partial or no success at all. Causes of failure were: graft rejection, extrusion of implant, cicatrisation, socket contraction, symblepharon etc.
RESULTS: Different modalities of treatment were used in each of the presented patient in several steps. The results follow successively.
CONCLUSIONS: Surgical treatment of PESS is still challenging with an unpredictable final outcome. Despite of much experience the results are not always satisfactory. Treatment requires patience from both, patient and surgeon, and it takes time. Research into aetiology and pathology of this condition will help in prevention and to better treatment strategies.

POMEN IMPLANTACIJE SEKUNDARNEGA ORBITALNEGA VSADKA PRI PROSTETIČNEM ZDRAVLJENJU POSTENUKLEACIJSKEGA SINDROMA – *PESS*

SIGNIFICANCE AND POSSIBILITES OF SECONDARY ORBITAL IMPLANTATION FOR MEDICAL PROSTHETIC TREATMENT OF POST-ENUCLEATION SOCKET SYNDROME – *PESS*

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NAMEN: Bolniki s postenukleacijskim sindromom (PESS) so velik izziv in problem v medicinskoprostetičnem zdravljenju. Analizirali smo funkcionalno-estetske učinke implantacije sekundarnega intraorbitalnega vsadka pri bolnikih, ki po enukleaciji in evisceraciji niso imeli primarne intraorbitalne implantacije.
MATERIALI IN METODE: Retrospektivno smo analizirali podatke 350 bolnikov brez primarne orbitalne implantacije, ki so bili v naši ustanovi zdravljeni v obdobju 2008–2015. Primerjali smo funkcionalne in estetske rezultate prostetičnega zdravljenja skupine 175 bolnikov, pri katerih je bila sekundarna intraorbitalna implantacija napravljena, in skupine 175 bolnikov, ki le-te ni imela.
REZULTATI: Pri skupno 350 analiziranih bolnikih je bilo oko kirurško odstranjeno brez primarnega pooperativnega nadomeščanja volumna z orbitalnim implantom, kar je posledično pripeljalo do PESS. V naši ustanovi je bila pri 175 bolnikih opravljena sekundarna intraorbitalna implantacija orbitalnega vsadka z operativno korekcijo lege vek in konjunktivalne vrečke. Funkcionalno-estetske rezultate te skupine bolnikov smo primerjali s funkcionalno-estetskimi rezultati skupine 175 bolnikov, ki sekundarne implantacije orbitalnega vsadka niso imeli.
ZAKLJUČEK: Pri bolnikih, pri katerih primarna pooperativna zamenjava manjkajočega orbitalnega volumna in primernega orbitalnega konformerja ni bila opravljena, pride do PESS in deformacij orbitalne vreče različnih stopenj, kar otežuje ali onemogoča vstavitev očesnih protez s pravim funkcionalnim ali estetskim učinkom. Funkcionalni in estetski rezultati medicinsko-prostetičnega zdravljenja pri bolnikih, ki so imeli sekundarno intraorbitalno implantacijo s korekcijo pozicije vek in deformacij konjunktivalne vrečke, so signifikantno boljši in funkcionalno in estetsko primernejši kot pri bolnikih brez tega posega. Ker ni doktrinarno dogovorjenega načina zdravljenja PESS z nadomeščanjem volumna z orbitalnim implantom in korekcijo deformacij, je skaženi videz po enukleaciji huda težava za socializacijo pacientov, predvsem mladostnikov.

PURPOSE: Patients with post-enucleation socket syndrome (PESS) represent a major challenge and a problem for medical prosthetic treatment. We analysed functional and aesthetic effects of secondary intraorbital implantation, among patients left without primary intraorbital implantation after enucleation and evisceration.
MATERIAL AND METHODS: We retrospectively analysed data of 350 patients without primary postoperative implantation, who were given medical prosthetic treatment in our institution, in the period 2008–2015. We compared functional and aesthetic results of the medical prosthetic treatment of the 175 patients who underwent secondary intraorbital implantation and 175 patients who did not.
RESULTS: In 350 reviewed cases of patients, the eye was surgically removed without primary postoperative replacement of lacking volume by an orbital implant, which, consequently led to PESS. Secondary intraorbital implantation together with surgical correction of the eyelids position and conjunctival sac was performed in 175 patients in our institution. Functional and aesthetic results of the prosthetic treatment of those patients were compared with functional and aesthetic results of the prosthetic treatment of 175 patients left without secondary implantation.
CONCLUSIONS: Patients who were left without primary postoperative replacement of lacking orbital volume and adequate orbital conformer, show signs of PESS and have deformities of the orbital sac of various degree,

which makes it very hard or impossible to fit an ocular prosthesis with right functional and aesthetic features. Functional and aesthetic result of the medical prosthetic treatment of the patients who underwent secondary intraorbital implantation and correction of the eyelids position and conjunctival sac deformities, is significantly more successful and functionally and aesthetically more adequate than in the group of patients left without secondary implantation. The lack of adequate doctrinally harmonized position on the necessity of PESS treatment by replacing the lacking volume with secondary implantation and correcting the deformities, results in aesthetic disfigurement and the problem of socialization of patients, especially in adolescence.

POZNI ZAPLETI, POVEZANI S HIDROKSIAPATITNIM ORBITALNIM VSADKOM: PREGLED 564 PRIMEROV
LATE COMPLICATIONS RELATED TO HYDROXYAPATITE ORBITAL IMPLANTS: A REVIEW OF 546 CASES

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NAMEN: Predstaviti pozne zaplete pri uporabi hidroksiapatitnega (HA) orbitalnega vsadka in njihovo zdravljenje.
METODE: V raziskavo smo vključili 546 pacientov, ki so prejeli HA orbitalni vsadek. HA orbitalni vsadek je bil vstavljen primarno (pri enukleaciji in evisceraciji) ali sekundarno. Vsi pacienti so bili zdravljeni na Očesni kliniki v Ljubljani, obravnaval jih je en kirurg. Vključenih je bilo 289 moških in 257 žensk, povprečna starost pacienta pa je bila 52,3 let (10–81 let). Enukleacija je bila izvedena v 459 primerih, sekundarna implantacija v 47 primerih in evisceracija v 40 primerih. HA orbitalni vsadki so bili obdani s pacientovo lastno sklero v 203 primerih, z vikrilom v 275 primerih in z mersilensko mrežico v 68 primerih.
REZULTATI: Zaplete smo zaznali pri 38 pacientih (7,0 %), od katerih je bilo 13 zgodnjih (manj kot 2 leti po posegu) in 25 poznih. Najkasnejši zaplet so nastali 17 let po posegu. Vzroki so bili dehiscenca veznice v 18 primerih, nastanek simblefarona v 5 primerih, protruzija vsadka v 6 primerih, postenukleacijski sindrom v 6 primerih, okužba vsadka v 1 primeru, kronični hematom v 1 primeru in ptoza spodnje veke v 1 primeru. V 12 primerih je bila potrebna odstranitev vsadka, rekonstrukcija veznične vrečke in vstavitev novega vsadka.
ZAKLJUČKI: Raziskava je pokazala, da so pri uporabi HA orbitalnega vsadka zapleti redkejši (7,0 %), kot v raziskavah iz literature (13–25 %). Pogostost zapletov ni bila odvisna od vrste materiala, v katerega je bil vsadek odet. Manjša incidenca zapletov kot v literaturi je najverjetneje posledica neuporabe vijaka, ki so ga v preteklosti uporabljali za izboljšanje gibljivosti očesne proteze. Kljub temu so rezultati pokazali, da popolnega orbitalnega vsadka še ni.

PURPOSE: Presentation of late complications related to the hydroxyapatite (HA) orbital implants and treatment options.
METHODS: Data of 546 patients who received HA orbital implant were analysed. HA orbital implants were implanted primary (following enucleation, evisceration) and secondary. All of the patients were treated by the same surgeon and at the same hospital. There were 289 male and 257 female patients, with the average age of 52.3 years (range 10–81 years). Enucleation was performed in 459 cases, secondary implantation in 47 cases, and evisceration in 40 cases. The wrapping material for the HA orbital implants was the patients' own sclera in 203 cases, vicryl in 275 cases and mersilene mesh in 68 cases.
RESULTS: Complications were noted in 38 cases (7.0%), of which 13 were early (less than 2 years after procedure) and 25 were late. The latest complication was registered 17 years after procedure. Causes for complications were dehiscence of conjunctiva in 18 cases, symblepharon formation in 5 cases, implant protrusion in 6 cases, postenucleation socket syndrome in 6 cases, implant infection in 1 case, chronic haematoma in 1 case and ptosis of the lower lid in 1 case. In 12 cases removal of the implant, reconstruction of the socket and a new implant was necessary.
CONCLUSIONS: In our study we registered lower complication rate related to HA orbital implants (7.0%) than overall complication rate in literature (13–25%). Complication rate was not influenced by the wrapping material. Lower incidence of complications is probably due to non-use of pegging, which was used in the past to improve the movement of ocular prostheses. However, our results showed that we still haven't found perfect orbital implant.

BLEFAROPLASTIKA – SAMO 1 POSEG?
BLEPHAROPLASTY – ONLY ONE SINGLE PROCEDURE?

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NAMEN: Blefaroplastika je najpogostejši kirurški estetski poseg na obrazu. V literaturi so opisane številne variante tega posega. Namen prispevka je predstaviti algoritem za odločanje glede indikacij in načina izvedbe zgoraj omenjenega posega.
METODE: Blefaroplastika je poseg, ki ga večinoma opravimo v lokalni anesteziji. Prikazan je postopek predoperativnega pogovora s pacientom. Sledi postopek ocene starostnih sprememb tkiva periokularnega področja: čelo, obrv, kvaliteta kože, položaj roba vek, ocena odvečnega tkiva veke, oblika in velikost očesne reže, čvrstost ligamentov veke. Na podlagi predoperativnega pogovora in pregleda načrtujemo vrsto posega: dvig čela, obrvi, zgornja in/ali spodnja blefaroplastika, lateralna kantoplastika, presaditev/premestitev orbitalnega maščevja.
REZULTATI: Prikazani so primeri bolnikov, pri katerih je avtor sledil zgoraj opisanemu algoritmu.
ZAKLJUČEK: Blefaroplastika je poseg, s katerim bistveno posežemo v bolnikov videz. Podroben pogovor glede bolnikovih pričakovanj ter natančen, individualiziran načrt posega ob brezhibni izvedbi omogočajo najboljši možni izid.

PURPOSE: Blepharoplasty is the most common aesthetical surgical procedure on the face. There are numerous descriptions of variants of this procedure in the literature. The aim of this talk is to present a decision algorithm on indications and choice of appropriate procedures in blepharoplasty.
METHODS: Blepharoplasty is a procedure commonly performed under local anaesthesia. The preoperative patient interview is shown. A thorough analysis of the ageing changes in the periocular region comes next: assessment of the forehead, brows, skin quality, lid margin position, redundant lid tissue, shape and size of the lid aperture, firmness of palpebral ligaments. Based on the preoperative interview and assessment, a proper combination of sub-procedures is selected: forehead and brow lift, upper and lower blepharoplasty, lateral canthoplasty, translocation of the orbital fat.
RESULTS: A series of cases which were treated according to the described algorithm is presented.
CONCLUSIONS: Blepharoplasty is a most effective procedure to change the patient's appearance. The best results are achieved by learning about the patient's expectations, individualized choice of procedures, and their meticulous execution.

ENDOSKOPSKA TRANSNAZALNA DAKRIOCISTORINOSTOMIJA S SLUZNIČNIMI REŽNJI IN NAŠE IZKUŠNJE

ENDOSCOPIC TRANSNASAL DACRYOCYSTORHINOSTOMY WITH MUCOSAL FLAPS AND OUR EXPERIENCES

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NAMEN: Opisati operativno metodo ETDCR in predstaviti rezultate našega dela.
METODE: ETDCR napravimo pri pacientih, ki imajo simptome epifore in anatomsko motnjo pri odtoku solz vzdolž nazolakrimalnega sistema. V našem primeru oftalmolog postavi diagnozo, otorinolaringolog izvede operacijo. Operiramo v celoti endoskopsko transnazalno. V nosu dvignemo sluznični reženj nad in pred srednjo nosno školjko. Odstranimo kost, na kateri leži lakrimalna vrečka. Vrečko zarežemo v obliki narobe obrnjene črke H. Režnja izvihamo tako, da pokrijeta prednji in zadnji rob stome. Reženj nosne sluznice oblikujemo tako, da pokrije zgornji in spodnji rob stome. Režnje na mestu zadržimo s koščki gelide. Vstavimo ***BIKA drain***, ki ga v nosu spnemo s klipi. Tamponada ni potrebna. Že na dan operacije operiranec prične s toaleto nosu s fiziološko raztopino, v oko vkapava antibiotične kapljice ter umetne solze, slednje vsaj do dne odstranitve ***BIKA drain***. Pet dni prejema širokospektralni antibiotik p.o.
REZULTATI: Od marca 2013 smo napravili 16 ETDCR pri 15 pacientih, katerih povprečna starost je bila 67,2 leta. Vsi so imeli simptome epifore. Dva sta bila pred tem že operirana (eden ***sec. Totti***, drugi z laserjem). Uspešnost operacije sledimo objektivno endoskopsko in subjektivno. Pri vseh 16 operacijah ugotavljamo dober anatomski in simptomatski rezultat. Povprečni čas sledenja je 12,6 mesecev in vsi po operaciji ugotavljajo, da epifore ni. Pri 7 pacientih smo zaradi pristopa napravili še septoplastiko, pri enem še omejeno operacijo obnosnih votlin. ***BIKA drain*** v povprečju odstranimo po 22,2 dneh. Noben pacient ni potreboval prepiranja solzevodov. Ponovitve epifore pri operiranih pacientih nismo ugotovili.
ZAKLJUČEK: Ključno pri ETDCR je, da oblikujemo kar se le da veliko stomo ter da kostne robove nastale stome čim bolj natančno prekrijemo s sluzničnimi režnji. Na ta način lahko ***BIKA drain*** odstranimo relativno hitro, tudi že po 1 tednu. Nosu ni treba tamponirati, tudi kanalikulov ne. Za uspeh zdravljenja je nujno sodelovanje med oftalmologom in otorinolaringologom.

PURPOSE: To describe ETDCR with full sac exposure, mucosal flaps approximation and review of our work.
METHODS: ETDCR is the procedure done for epiphora sufferers because of blockage of tear flow along lacrimal system. In our case ophthalmologists diagnose it, ENT surgeon perform the procedure, which is done endoscopically transnasally. Elevation of mucosa from above and anterior of medial turbinate is followed by removal of as much bone on which lacrimal sac lies as possible. Sac is incised in a H letter fashion. Flaps are rolled out, one anteriorly, other posteriorly. Nasal mucosa is trimmed to cover raw bony edges. Flaps are retained in place by small Gelida pieces. Intubation of canalicula is done, tubes secured by clips. No tamponade. Postoperative care of nose starts with saline drops on the day of surgery, 2 weeks of antibiotic eye drops and artificial tears until lacrimal tubes are removed. 5 days of broad spectrum antibiotic orally.
RESULTS: From March 2013 we have performed 16 ETDRCs on 15 patients, mean age 67.9 years. All had epiphora symptoms. Two have been operated before (one by laser, another ***secundum Totti***). On follow-ups we evaluate symptoms of epiphora subjectively and endoscopically. At all 16 ETDCRs good anatomical and symptomatic success was noted. Mean follow-up 11.1 months with significant relief of tearing symptoms after surgery. 7 patients needed septoplasty, limited sinus surgery only in 1 case. Canalicular tubes were removed on day 22.3. None of the patients needed postoperative lacrimal syringing. No recurrence of epiphora was noted.
CONCLUSIONS: At ETDCR cooperation of ophthalmologist and sinus surgeon is needed. Success of operation is strongly dependent on formation of as large stoma as possible and delicate mucosal flaps apposition. In our hands no tamponade of nose and lacrimal system syringing are needed. Intubation of canalicula is shortened, recently even to less than 14 days.

PRIKAZ PRIMERA: ENDOSKOPSKA TRANSNAZALNA *DCR* PRI BOLNIKU Z AKUTNIM DAKRIOCISTITISOM IN EMPIEMOM SOLZNEGA MEŠIČKA

CASE REPORT: ENDOSCOPIC TRANSNASAL *DCR* PERFORMED IN A PATIENT WITH ACUTE DACRYOCYSTITIS WITH LACRIMAL SAC EMPYEMA FORMATION

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NAMEN: Prikaz primera bolnika z akutnim dakriocistitisom in empiemom solznega mešička, ki smo ga v naši ustanovi zdravili z endoskopsko transnazalno dakriocistorinostomijo (ETDCR).
METODE: V oftalmološka urgentna ambulanto je prišel 67-letni bolnik zaradi akutnega desnostranskega dakriocistitisa z empiemom. Pred nastopom težav je opazil predhodno povečano solzenje desnega očesa. Prejel je sistemsko in lokalno antibiotično terapijo. Napravljena je bila urgentna perkutana drenaža empiema. Po dveh tednih sta se vnetje in epifora skoraj v celoti umirila. Rano nastalo po drenažni inciziji, ki je bila mirna, smo oskrbeli ***per secundam*** s kožnim šivom. Devetnajsti dan je prišel bolnik na predčasni kontrolni pregled zaradi ponovne rdečine, otekline in gnojnega izcedka iz mesta predhodne incizije ob kožnem šivu. Napravili smo dilatacijo rane na licu, drenirali gnojno vsebino in ponovno uvedli antibiotično terapijo. Pacienta smo predstavili otorinolaringologu, ki je odredil CT obnosnih votlin. Na posnetkih je bilo videti osteosintetski material. Gospod je bil 4 mesece pred tem operiran zaradi poškodbe obraznega skeleta na KO za maksilofacialno in oralno kirurgijo. Otorinolaringolog je predlagal dokončno sanacijo akutnega dakriocistitisa in epifore z ETDCR, s čimer je vzpostavil široko komunikacijo med solznim mešičkom in nosno votlino.
REZULTATI: Šesti dan po operaciji smo pacientu odstranili ***BIKA drain***, ki smo ga med posegom vstavili v zgornji in spodnji kanalikul. Dvanajsti dan po operaciji se je vnetje umirilo, rana na licu v celoti zaprla in gospod ni imel več težav z epiforo.
ZAKLJUČEK: ETDCR je poleg zdravljenja kroničnega dakriocistitisa tudi uveljavljen način zdravljenja akutnega dakriocistita z empiemom solzne vrečke. Drenaža solznega mešička je lahko po tej metodi narejena primarno ali pa sekundarno, kot v našem primeru. Ker primer diagnosticira oftalmolog, poseg pa izvede otorinolaringolog s pomočjo oftalmologa, je dobro sodelovanje med obema strokama nujno.

PURPOSE: This case report will present an overview of a patient with acute dacryocystitis complicated by empyema formation treated in our hospital using endoscopic transnasal dacryocystorhinostomy (ETDRC).
METHODS: A 67-year old male patient was referred to our hospital for an emergency ophthalmologic check-up due to acute right sided dacryocystitis with empyema formation. He reported history of excessive tearing of his right eye. We performed an emergency percutaneous drainage of empyema and prescribed systemic and local antibiotics. In 2 weeks time there was a significant clinical improvement. As there were no signs of infection at the site of incision wound we surgically closed it. On the 19th day of treatment the patient came for an early check-up. On examination there was eyelid swelling, redness and pus formation at the site of previous drainage incision. Dilatation of incision wound with pus drainage was made and antibiotics were prescribed again. Patient was referred to ENT specialist. A CT scan of paranasal sinus cavities showed implanted osteosynthetic material. Patient had undergone a surgery 4 months ago at Department of Maxillofacial and Oral surgery due to injury to facial bones. ETN surgeon recommended ETDCR surgery to prevent further empyema formation. With this surgery a wide direct connection between lacrimal sac and nose cavity was made.
RESULTS: On the 6th postoperative day, ***BIKA drain*** that had been inserted through superior and inferior canaliculi during surgery, was removed. On the day twelve there were no clinical signs of infection present, the site of previous percutaneous incision drainage has healed and the patient reported no epyphora.

CONCLUSIONS: ETDCR surgery is worldwide performed in patients with chronic dacryocystitis. It has also proven to be a highly effective treatment of choice in cases of acute dacriocystitis with lacrimal sac empyema. In those patients ETDCR can be primary and definitive treatment or it can be made secondarily. Interdisciplinary team work is of greatest importance as diagnosis is made by an ophthalmologist and surgery is performed by an ENT specialist with help of ophthalmologist.

POŠKODBE ORBITE
ORBITAL INJURIES

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NAMEN: Poškodbe orbite so pogosto pridružene poškodbam obraza. Teža poškodbe se lahko stopnjuje od minimalnih kostnih premikov znotraj posamezne stene, katerih oskrba ne potrebuje kirurške intervencije, do večjih, zapletenih poškodb. Prikazani bodo različni tipi poškodb in možnosti njihovega zdravljenja. Predstavili bomo posamezne primere.
METODE: Retrospektivna raziskava. V letu 2015 je bilo na KO za maksilofacialno in oralno kirurgijo opravljenih 212 operacij v splošni anesteziji zaradi poškodb obraza. Orbita je bila poškodovana v 12 % (25 pacientov). Podrobneje smo pregledali vzorec omenjenih 25 pacientov s poškodbo orbite.
REZULTATI: Samo zlom orbite je imelo 15 pacientov (60 %), pri 1 (4 %) je bil zlom orbite kombiniran z nazoorbitoetmoidnim zlomom, 1 (4 %) pacient je imel zlomu orbite priključen ***Le Fortov*** zlom, v 5 (20 %) primerih zlom ličnice, 3 (12 %) pacienti pa so imeli kombinacijo več zlomov.
ZAKLJUČEK: Oskrba poškodb orbite je zapletena in zahtevna, usmerjena je v zmanjševanje in preprečevanje zgodnjih ter poznih posledic in zapletov. Potrebna je multidisciplinarna obravnava poškodovanca.

PURPOSE: Orbital fractures are commonly seen with midfacial trauma. Fracture severity ranges from small minimally displaced fractures of an isolated wall which require no surgical intervention to major disruption of the orbit. Different types of injuries and possibilities for treatment will be reviewed and exemplary cases presented.
METHODS: Retrospective study. In the year 2015, 212 patients underwent surgery under general anaesthesia because of facial injury at Maxillofacial Clinic, Ljubljana. In 12% (25 patients), orbital injury was associated. Furthermore, we analysed a sample of 25 patients with orbital fractures.
RESULTS: Isolated orbital fractures were present in 15 cases (60%), 1 patient (4%) had orbital fracture combined with nasoorbitoethmoid fracture, 1 patient (4%) had orbital fracture combined with *Le Fort* fracture, 5 (20%) were accompanied by zygomatic fractures, in 3 cases (12%) multiple fractures were present.
CONCLUSIONS: The management of orbital trauma and fractures is demanding. It is aimed at minimizing and preventing early and late sequelae and complications. A multidisciplinary approach is required.

VLOGA *TAPINGA* PRI ZGODNJI REHABILITACIJI PAREZE OBRAZNEGA ŽIVCA Z LAGOFTALMUSOM

EARLY REPORT ON NEUROMUSCULAR TAPING THERAPY FOR LAGOPHTHALMUS IN FACIAL NERVE PALSY

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NAMEN: Predstaviti serijo bolnikov z lagoftalmusom, ki so bili zdravljeni s t.i. metodo živčno-mišičnega *tapinga*.
METODE: Retrospektivni prikaz serije 10 bolnikov, zdravljenih s t.i. živčno-mišičnim ***tapingom***.
REZULTATI: V letih 2014 in 2015 smo imeli v fizioterapevtski obravnavi s t.i. živčnomišičnim ***tapingom*** 10 bolnikov. Pareza obraznega živca je sledila nevrokirurškim odstranitvam neoplazem (7/10 po odstranitvi švanoma vestibulokohlearnega živca) in ostalih sprememb v vestibulopontinem področju. Za oceno in opis stopnje disfunkcije obraznega živca in izboljšanja z zdravljenjem smo uporabili sistem FGS (ang. ***Facial Grading System***). Metoda živčno-mišičnega ***tapinga*** ima ugodne rezultate in zmanjša potrebo po kirurškem zdravljenju lagoftalmusa.
ZAKLJUČEK: Pareza obraznega živca, ki vsebuje motorične, senzorične in parasimpatične nevrone, povzroči funkcionalno in kozmetično hibo. Glavni očesni zaplet je nezmožnost popolnega zapiranja očesa oziroma lagoftalmus. Izpostavljenost očesne površine povzroči večjo verjetnost za nastanek keratitisa, kornealnega ulkusa in v nekaterih primerih slepoto. Zdravljenje lagoftalmusa zajema kirurško in nekirurško zdravljenje. Rezultati zdravljenja so odvisni predvsem od vzroka in teže okvare. Z živčnomišičnim ***tapingom*** želimo doseči čim boljšo funkcijo zapiranja očesa, preprečiti zaplete lagoftalmusa in zmanjšati potrebe po kirurškem zdravljenju.

PURPOSE: To present a case series of patients with lagophthalmus that have been treated with conservative means of neuromuscular taping using elastic adhesive tape.
METHODS: A case series.
RESULTS: In years 2014 and 2015 ten patients with lagophthalmus were included in rehabilitation with neuromuscular taping. The facial palsy was a sequel of neurosurgical treatment of neoplasms (7/10 after removal of vestibulocochlear nerve schwannoma) and other entities in the vestibulopontine region. We used the *Facial Grading Aystem* (FGS) to quantify and describe facial nerve dysfunction and improvement during taping therapy. This new method has favourable results and lowers the need for surgical intervention.
CONCLUSIONS: Facial nerve palsy results in functional and cosmetic impairment as it carries motor, sensory and parasympathetic nerve fibers. The main ophthalmic complication is lagophthalmus or the inability to close the eyes completely. It can lead to keratitis, corneal ulceration and even blindness. Treatment options include surgical and non-surgical therapy. The results depend mostly on the severity of nerve damage and its cause. With taping we try to improve functional closure of the eye, prevent further complications and lower the need for surgical intervention.

OČESNE MANIFESTACIJE SINDROMA SWEET – PRIKAZ PRIMERA IN KRATEK PREGLED LITERATURE
OCULAR INVOLVEMENT IN SWEET SYNDROME – CASE REPORT AND SHORT LITERATURE REVIEW

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NAMEN: Prikaz primera 75-letnega pacienta z unilateralnim skleritisom in sidromom Sweet. Podan kratek pregled literature na temo okularne prizadetosti v sklopu sindroma Sweet.
METODE: Oftalmološki pregled, OCT-slikanje, fluoresceinska angiografija, indocianin-zeleno angiografija, ultrasonografija zrkla. Za iskanje literature smo uporabili portal PubMed.
REZULTATI: Okularna prizadetost je bila dokazana pri do 72 % pacientov s sindromom Sweet. Naš pacient je imel ob pregledu pri nas sindrom že diagnosticiran, potrjen s patohistološko preiskavo kožnih eflorescenc. Pri pregledu smo ugotovili anteriorni skleritis in ultrasonografsko potrdili posteriorni skleritis, ki se je najverjetneje pojavil v sklopu sindroma Sweet. Primarno vlogo pri zdravljenju ima sistemsko dajanje kortikosteroidov ali ciklosporina, sindrom pa lahko izzveni tudi spontano. Pacienta smo zdravili z nizkim odmerkom sistemskih steroidov in z nesteroidnim antirevmatikom. Za definitivno zdravljenje je bil usmerjen na Dermatološko kliniko.
ZAKLJUČEK: Sindrom Sweet je redka kožna bolezen, pri kateri je pogosta okularna prizadetost, v našem primeru skleritis.

PURPOSE: To present the case of a 75-year old patient with Sweet syndrome and scleritis. Short review of literature on ocular involvement in Sweet syndrome.
METHODS: Ophthalmological exam, OCT imaging, fluoresceine angiography, indocyanine green angiography, ocular ultrasonography. For the review of the literature, PubMed portal was used.
RESULTS: Ocular inflammation is a common co-morbidity in Sweet syndrome that may occur in up to 72% of the patients. Our patient was already diagnosed with Sweet syndrome. He presented with unilateral scleritis which was attributed to Sweet syndrome. Corticosteroids and cyclosporine are the mainstay of treatment, but sometimes spontaneous resolution occurs. The patient was treated with a low dose systemic steroid and non-steroidal anti-inflammatory drug. Definitive treatment is dependent on dermatologists.
CONCLUSIONS: Sweet syndrome is an uncommon skin condition with notable ocular co-morbidity. Our patient presented with scleritis related to Sweet syndrome.

KLOPROSTENAT KOT SREDSTVO ZA DALJŠANJE VEJIC
CLORPSOTENATE AND LASH ENHANCEMENT.

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NAMEN: Kloprostenat je registrirano kozmetično sredstvo za daljšanje vejic. Spada v skupino prostaglandinskih analogov, katerih učinki na vejice so oftalmologom dobro poznani. Namen raziskave je bil ugotoviti varnost in učinkovitost kozmetičnega proizvoda, ki vsebuje kloprostenat.
METODE: V prospektivni randomizirani enojno slepi raziskavi je sodelovalo 45 prostovoljk; 30 jih je redno 13 tednov nanašalo 0,02-odstotno raztopino s kloprostenatom na rob vek. V kontrolni skupini je 15 prostovoljk nanašalo fiziološko raztopino po enakem protokolu. Spremljali smo vrsto in pogostost neželenih stranskih učinkov, vpliv na očesni tlak, ter merili dolžino vejic ter ocenjevali njihovo gostoto in debelino. Vrednosti, pridobljene pri obeh skupinah, smo primerjali in statistično analizirali.
REZULTATI: V skupini, ki je nanašala raztopino s kloprostenatom, smo opazili statistično značilno podaljšanje vejic, prav tako je se je povečalo njihovo število in debelina. Od stranskih učinkov smo opazili prehodno rdečino vek ali veznice pri 20 prostovoljkah iz skupine s kloprostenatom ter pri 1 iz kontrolne skupine. V skupini s kloprostenatom se je pri 3 prostovoljkah prehodno pojavila čezmerna poraščenost v zunanjem očesnem kotu.
ZAKLJUČEK: Kloprostenat v obliki 0.02-odstotne raztopine za uporabo na robu veke je povzročil pomembno podaljšanje vejic; ta učinek je vztrajal še 2 meseca po prenehanju uporabe.

PURPOSE: Cloprostenate is registered cosmetic agent for lash enhancement. It belongs to the group of prostaglandine analogues, whose effects on lashes are well known among ophthalmologists. The aim of the study was to determine the safety and efficacy of this cosmetic agent.
METHODS: The study was designed as a randomized single-blinded study and included 45 volunteers. 30 of them applied 0.02% solution of cloprostenate to the lid margin for 13 weeks, and 15 applied saline solution. Side effects as well as change in intraocular pressure, lash length, thickness and density was measured. The collected data was compared and statistically analysed.
RESULTS: A significant increase in lash length (average 39%) was noticed in the group with cloprostenate. Among side effects, transient lid and eye redness were noticed in 20 participants of the cloprostenate group, as well as transient hypertrichosis of the lid skin in 3 participants.
CONCLUSIONS: Cloprostenate as a 0.02% solution is effective in increasing lash length, and the result can be maintained up to 2 months after the application.

PONAVLJAJOČA SE PEMFIGOIDNA REAKCIJA NA REŽNJIH IN PRESADKU KOŽE PO IZREZU PLOŠČATOCELIČNEGA KARCINOMA VEKE

RECURRENT PEMPHIGOID REACTION IN LID SKIN FLAPS AND GRAFT AFTER AN EXCISION OF A SQUAMOUS-CELL CARCINOMA

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NAMEN: Namen je opisati dolgoročno spremljanje nenavadnega kliničnega primera bulozne kožne reakcije na kožnih režnjih in presadku po izrezu ploščatoceličnega karcinoma spodnje veke.
METODE: Na Očesni kliniki Univerzitetnega kliničnega centra Ljubljana je bil obravnavan 63-letni bolnik zaradi suma na ploščatocelični karcinom leve spodnje veke. Opravljena je bila ekscizija in rekonstrukcija veke z lokalnim transpozicijskim kožnim režnjem. Na režnju so se pojavile ponavljajoče se bulozne spremembe in posledično brazgotinsko skrčenje veke. Mikrobiološko testiranje buloznih sprememb na bakterije in viruse je bilo negativno. Šest mesecev kasneje je bila izvedena kirurška korekcija z retroavrikularnim presadkom. Histološka preiskava je pokazala atipičen bulozni pemfigoid, na podlagi imunofluorescentne preiskave kasnejše biopsije pa je bila postavljena diagnoza linearne IgA-dermatoze.
REZULTATI: Na podlagi histopatološkega izvida in izvida imunofluorescence je bila postavljena diagnoza linearne IgA-dermatoze, subepidermalne imunobulozne bolezni. Pacientovo stanje se je izboljšalo po zdravljenju s sistemskimi kortikosteroidi, a je bila terapija ukinjena s strani samega bolnika. Po prekinitvi terapije so se bulozne spremembe ponavljale in dvanajst let po prvi obravnavi je bila opravljena kirurška korekcija brazgotinskega ektropija s transpozicijskim zigomatičnim režnjem. Uvedena je bila lokalna terapija z deksametazonom in dapson sistemsko, po čemer so bulozne spremembe izginile.
ZAKLJUČEK: Gre za nenavaden primer avtoimunske bulozne dermatoze na kožnih režnjih in presadku. Uvedli smo terapijo, po kateri se je stanje kožne bolezni stabiliziralo, morda pa bo potrebno dodatno kirurško zdravljenje brazgotinskega ektropija.

PURPOSE: To describe a long-term follow-up of an unusual case of a bullous skin reaction occurring on skin flaps and graft of the lower eyelid after an excision of a squamous-cell carcinoma.
METHODS: A 63-year-old patient was treated at the University Eye Hospital in Ljubljana for a presumed squamous-cell carcinoma of the left lower eyelid. An excision and reconstruction of the lid with a local transposition cutaneous flap was performed. Recurrent blisters appeared on the flap and the eyelid shrunk due to scarification. The result of a microbiological examination of the bullous changes for pathologic bacteria and virus was negative. A second surgical treatment with a retroauricular skin graft was performed six months later. A histological examination of the excised material reported a local atypical bullous pemphigoid. An immunofluorescent investigation was performed on a later biopsy of the recurrent bullous changes, by which the diagnosis of a linear IgA dermatosis was established.
RESULTS: Based on the histopathologic and immunofluorescent findings of the skin samples, this case was diagnosed as a linear IgA dermatosis, a subepidermal immunobullous disease. The patient's condition improved when treated with systemic corticosteroids, however, the therapy was withdrawn by the patient himself. Thereafter, a recurrence of the blisters and retraction of the lower eyelid reappeared. A correction of the cicatricial ectropion with a transposition, zygomatic flap was performed twelve years after the first surgical treatment. The patient was prescribed a local treatment with dexamethasone and dapsone systemically, by which the bullous changes disappeared.
CONCLUSIONS: It is a unique case of an autoimmune bullous skin reaction in skin flaps and graft. We have established a therapy by which the cutaneous condition remained stable, however, a further surgical repair may be needed.

OFTALMOLOGIJA V FILMU
OPHTHALMOLOGY IN FILMS

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NAMEN: Vid predstavlja glavno senzorično vstopno točko za naše možgane; razvoj tehnologije v zadnjih sto letih je to vizocentričnost še poudaril. Tako ne preseneča relativno velik pomen organa vida – očesa – v naši vsakdanji predstavi o svetu. Oftalmologija kot veja medicine, ki skrbi za zdravje očesa in odpravlja njegove napake, je tako pogosta tema tudi zunaj medicinske stroke – v vsakdanjem življenju in tudi umetnosti. Opisi očesnih bolezni in zdravljenje le-teh segajo že v najstarejše znane pisne vire, vključno tiste umetniške narave. V zadnjem stoletju se je kot vodilna umetnost uveljavil film, zato je namen prispevka subjektiven pregled presečišča med filmsko umetnostjo in oftalmologijo.
METODE: S pomočjo referenc iz svetovnega spleta, iskalnikov in predvsem lastnega beleženja skozi večletno sprotno spremljanje filmske umetnosti sem izluščil filme in odseke v njih, ki prikazujejo oko in oftalmologijo.
REZULTATI: Prikazan je subjektivni kolaž filmskih izsekov od samih začetkov filmske umetnosti do sodobnosti z referencami na oko in oftalmologijo.
ZAKLJUČEK: Film kot umetnost zrcali svet in s tem tudi našo stroko. Na ta način nam, oftalmologom, omogoča pogled z druge strani oftalmoskopa.

PURPOSE: The sense of sight is the principal sensory modality for our brain; the technological evolution in the past 100 years has only enhanced this 'visocentricity' further. Therefore, a relatively large impact of the organ of sight – the eye – in our everyday perception of the world is not surprising. Ophthalmology is the branch of medicine, responsible for the health of the eye and the curing of its imperfections, is similarly a frequent theme outside the medicine itself – in everyday life, as well as in the art. Descriptions of eye conditions and their treatment date back to the oldest written records, including those of artistic nature. The leading art form of the past century is film, and this is why this presentation offers a subjective overview of the interplay between film art and ophthalmology.
METHODS: The author collected movies and trailers depicting the eye and ophthalmology, based on references from the web, search engines and his own list of references,
RESULTS: A subjective collage of movie depictions from the beginning of film art to present day with references to ophthalmology is shown.
CONCLUSIONS: Film art mirrors the world we live in and our profession as well. This enables us, ophthalmologists, to experience a different view, from the other side of the ophthalmoscope.

OČESNI TUMORJI
OCULAR TUMOURS

Moderatorici / Moderators: KATRINA ANDREJČIČ, ALENKA LAVRIČ GROZNIK

ZDRAVLJENJE PRI MALIGNIH TUMORJIH ŽILNICE
MALIGNANT CHOROIDAL TUMOURS TREATMENT

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AIM: To show methods of treatment of malignant choroidal tumours at the Department of Ophthalmology, University Hospital Centre Zagreb and School of Medicine Zagreb University.
METHODS: This is a retrospective study based on data from OR protocols and medical histories of patients. Treatment methods in the last 15 years are analysed (enucleation, brachitherapy, transpupillar thermotherapy, endoresection).
RESULTS: In the last 15 years, almost 400 eyes in 385 patients were treated in our Clinic, 45% male and 55% female. Numbers of patients and methods of treatment varied over the years. The methods of treatment were based on the logistic support and educational level.
CONCLUSION: Diagnostic and therapeutic methods we use are similar to those in other world centres.

RABDOMIOSARKOM: KAJ SMO SE NAUČILI?
RHABDOMYOSARCOMA: WHAT DID WE LEARN?

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NAMEN: Rabdomiosarkom (RMS) je ena redkih življenje ogrožajočih bolezni, ki jo prvi lahko prepozna oftalmolog. RMS je malignom, sestavljen iz celic, ki imajo histološke značilnosti prečno progastih mišic v različnih fazah embriogeneze. Obsega približno 5 % vseh rakov pri otrocih in približno 20 % vseh malignomov mehkih tkiv. Predilekcijsko mesto za RMS je področje glave in vratu (v 45 %), od tega jih 25–35 % primarno v orbiti in se navadno pojavi v prvih 10 letih življenja. Mikroskopsko ločimo 4 glavne histopatološke tipe RMS: pleomorfni, embrionalni, alveolarni in botrioidni. V orbiti je najpogostejši embrionalni tip.
METODE: Predstavljeni bodo zadnji 3 primarni orbitalni RMS pri 3 otrocih, ki so bili obravnavani na Očesni kliniki v Ljubljani. Poudarek bo na zgodnji prepoznavi simptomov in znakov, na ustrezni diagnostični obravnavi in na trenutnih smernicah za zdravljenje.
REZULTATI: Povprečna starost pojava tumorja v orbiti je bila pri treh otrocih 7 let. Od začetka težav do postavitve diagnoze je povprečno minilo 21 dni (razpon 15–30 dni). Vsi 3 RMS so bili embrionalnega tipa. Kljub agresivnemu sistemskemu zdravljenju sta bila 2 primera smrtna.
ZAKLJUČEK: RMS orbite je potencialno življenje ogrožajoče stanje, ki ga pogosto prvi prepozna oftalmolog. Čim prejšnja prepoznava bolezni je nujna za takojšnje zdravljenje in s tem boljšo prognozo bolezni.

PURPOSE: Rhabdomyosarcoma (RMS) is a rare life-threatening disease that could be first recognised by ophthalmologist. RMS is a malignoma consisting of cells with histologic characteristic of a striated muscle in different phases of embryogenesis, amounting to 5% of all children malignancies and approximately 20% of all soft tissue malignancies. Predilections for RMS are the head and neck region (45%), 25–35% can originate primarily in the orbit. It usually presents in the first 10 years of life. Microscopically, there are 4 histologic variations of RMS: pleomorphic, embryonal, alveolar and botryoid. Embryonal type is the most common in orbit.
METHODS: The last 3 cases of primary orbital RMS treated in Eye Hospital Ljubljana will be presented. Early signs and symptoms with diagnostic evaluation and current treatment guidelines will be emphasized.
RESULTS: The mean age at the presentation in orbit was 7 years. It took 21 days (range 15–30 days) from presenting symptoms to the diagnosis. All RMS were of the embryonal type. Despite aggressive systemic treatment two cases were lethal.
CONCLUSIONS: Orbital RMS is a life-threatening condition that is often first recognized by an ophthalmologist. Early disease recognition is essential for prompt treatment and better prognosis.

UPORABA INTRAVITREALNEGA RITUXIMABA ZA ZDRAVLJENJE OČESNEGA LIMFOMA – IZKUŠNJE, PREGLED LITERATURE IN PRIPOROČILA

INTRAVITREAL RITUXIMAB FOR INTRAOCULAR LYMPHOMA – EXPERIENCE, LITERATURE REVIEW AND RECOMMENDATIONS

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NAMEN: Predstavljamo izkušnje z zdravljenjem očesnega limfoma z intravitrealnim rituximabom, pregled literature in priporočila.
METODE: Opis kliničnih primerov, pregled literature.
REZULTATI: Predstavljamo 2 bolnika z očesnim limfomom, ki sta bila zdravljena na Očesni kliniki Ljubljana. Oba sta imela z biopsijo mrežnice in steklovine dokazan velikocelični B limfom. Pri prvem bolniku je bila prisotna le očesna prizadetost, pri drugem pa se je očesna prizadetost razvila po zdravljenju sistemskega velikoceličnega B limfoma. Poleg sistemske kemoterapije sta bolnika prejemala intravitrealni rituximab v različnih intervalih. Oba sta se dobro odzvala na zdravljenje in prišlo je do izboljšanja klinične slike. Objavljenih je bilo nekaj poročil in raziskav, ki opisujejo učinkovitost in varnost intravitrealnega rituximaba pri zdravljenju očesnega limfoma.
ZAKLJUČEK: Intravitrealni rituximab, anti-CD20 monoklonsko protitelo, je učinkovita alternativna možnost zdravljenja očesnega limfoma.

PURPOSE: We present our experience in treatment of intraocular lymphoma with intravitreal rituximab, review of the literature and recommendations.
METHODS: Clinical case presentations, literature review.
RESULTS: We present two cases of intraocular lymphoma treated at the University eye clinic Ljubljana. Both patients had intraocular lymphoma, classified as a diffuse large B-cell lymphoma after analysing samples obtained with vitreous and retinal biopsy. The first patient presented only with ocular disease and the second developed ocular disease after she had been treated for a systemic diffuse large B-cell lymphoma. Besides systemic chemotherapy they both received intravitreal rituximab in various intervals. They responded well to therapy and an improvement of clinical picture was observed. There have been reports and studies published showing effectiveness and safety of intravitreal rituximab in intraocular lymphoma treatment.
CONCLUSIONS: Intravitreal rituximab, an anti-CD20 monoclonal antibody, was shown to be an efficacious alternative treatment option for intraocular lymphoma.

REGRESIJA ZASEVKOV ŽILNICE NEDROBNOCELIČNEGA PLJUČNEGA KARCINOMA OB ZDRAVLJENJU Z ERLOTINIBOM

REGRESSION OF CHOROIDAL METASTASES SECONDARY TO NON-SMALL-CELL LUNG CANCER WITH ERLOTINIB THERAPY

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NAMEN: Predstavitev kliničnega primera 56-letne bolnice z regresijo metastaz žilnice nedrobnoceličnega karcinoma pljuč ob zdravljenju s peroralnim erlotinibom.
METODE: Zaradi teden dni trajajočega zaznavanja bliskanja je bila 56-letna bolnica napotena na oftalmološki pregled. Ob pregledu je bila vidna ostrina obojestransko 1,0 in sprednji segment v mejah normale. Na očesnem ozadju sta bili vidni v desni makuli superiorno 3,0 x 2,6 mm ter levo temporalno od makule 6,6 x 5,2 mm veliki leziji žilnice. Fluoresceinska angiografija, indocianinska angiografija in očesna ultrasonografija so prikazali obojestranske metastaze žilnice z debelino desne lezije 1 mm in leve lezije 3 mm. Optična koherentna tomografija je prikazala serozni odstop mrežnice v področju lezij. V nadaljnjem diagnostičnem postopku je bil pri bolnici ugotovljen nedrobnocelični karcinom pljuč z možganskimi metastazami, ki je imel izražene receptorje za epidermalni rastni dejavnik (EGRF).
REZULTATI: Pulmologa je uvedel zdravljenje s peroralnim erlotinibom v odmerku 150 mg dnevno. Erlotinib inhibira EGFR. Na nadaljnjih pregledih je bila vidna popolna regresija metastaz žilnice z resorpcijo subretinalne tekočine brez nastanka novih lezij.
ZAKLJUČEK: Erlotinib je lahko uspešno alternativno zdravljenje metastaz žilnice nedrobnoceličnega pljučnega karcinoma.

PURPOSE: To report a case of a 56-year old female with regression of choroidal metastasis secondary to non-small-cell lung cancer with oral erlotinib therapy.
METHODS: A 56-year-old female presented with a one-week history of photopsiae in both eyes. On examination, visual acuity was 20/20 in both eyes. Anterior segment was normal. Fundus evaluation revealed 3.0 x 2.6 mm yellow-white choroidal mass with subretinal fluid extending superiorly in macula in the right eye and 6.6 x 5.2 mm choroidal mass temporal to the macula in the left eye. Fluorescein angiography, indocyanine green angiography and ultrasonography revealed choroidal metastases. Thickness of right and left masses were 1 mm and 3 mm, respectively. Biopsy-proven primary non-small-cell lung cancer (NSCLC) with brain metastases was diagnosed. NSCLC demonstrated over-expression of epidermal growth factor receptors (EGFR).
RESULTS: The patient was treated with 150 mg oral erlotinib daily under the supervision of a pulmologist. Erlotinib is an EGFR inhibitor. Subsequent ocular examinations showed complete regression of the choroidal metastasis to a flat scar in both eyes. Subretinal fluid was resolved. No recurrence of tumour was detected.
CONCLUSIONS: Oral erlotinib is an alternative therapy for choroidal metastasis from NSCLC.

NEVROOFTALMOLOGIJA
NEUROOPHTHALMOLOGY

Moderatorja / Moderators: MARKO HAWLINA, BRANKA STIRN KRANJC

EVOLUCIJA OČESA
EVOLUTION OF THE EYE

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V teku evolucije je narava izoblikovala s pomočjo mutacij različne tipe očesa zaradi spremenjenih vplivov okolja, načina življenja in razmnoževanja, od 'očesa' visusa dojem+, projekcija + enoceličarja, do sedanjih različnih tipov oči.

During evolution, nature formed with mutations different types of eyes because of changing environment, way of life and reproduction from light detection one celled organisms to present different eyes.

SMERNICE OBRAVNAVE TEMPORALNEGA ARTERITISA S PRIZADETOSTJO VIDA

GUIDELINES FOR MANAGEMENT OF TEMPORAL ARTERITIS WITH VISUAL IMPAIRMENT

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Temporalni arteritis je sistemski vaskulitis, pri katerem je pogosto prizadet vid. Zaradi ogroženosti vida se terapevtska shema, ki jo predlagajo vodilni nevrooftalmologi nekoliko razlikuje od terapevtskih shem revmatologov (1).
Hayreh (1) je kot zlasti nujne opredelil tiste bolnike, ki spadajo v naslednje tri skupine: 1. ***amaurosis fugax*** še brez prizadetosti vida; 2. razvijajoča se izguba vida s prizadetosjo vida in vidnega polja na enem očesu, in 3. Izguba vida na enem očesu in začetni znaki prizadetosti na drugem očesu.
Hayreh zlasti pri teh treh skupinah svetuje uporabo intravenskih steroidov. Raziskave, ki jih citira omenjeni članek, kažejo na potrebo, da bolnike s temporalnim arteritisom in grozečo izgubo vida hospitaliziramo in bolezen zdravimo oftalmologi z intravensko aplikacijo 500–1.000 mg metilprednizolona 3 dni, ki se nadaljuje z zdravljenjem ***per os*** v odmerku 1–1,5 mg metilprednizolona dnevno v padajočih odmerkih v soglasju z revmatologi.
Britansko združenje oftalmologov je sprejelo podobna priporočila, ki svetujejo intravensko zdravljenje 3 dni (500–1.000 mg metilprednizolona) pri bolnikih, ki kažejo znake razvijajoče se izgube vida v zadnjih 6–12 urah ali imajo prehodne izgube vida. Pri bolnikih, ki so že izgubili vid na enem očesu, drugo oko pa še ne kaže znakov prizadetosti, svetujejo vsaj 60 mg prednizona ***per os*** dnevno. Pri bolnikih, ki nimajo znakov prizadetosti vida, pa svetujejo 40–60 mg prednizona (ne manj kot 0,75 mg/kg dnevno).

Hayreh SS, Biousse V. Treatment of acute visual loss in giant cell arteritis: should we prescribe high-dose intravenous steroids or just oral steroids? J Neuro-Ophthalmol 2012; 32: 278–87.

Temporal arteritis is systemic vasculitis in which loss of vision is a common complication. Because of endangered vision, the therapeutic scheme adopted by neuroophthalmologists slightly differs from that of rheumatologists (1).
Hayreh (1) has defined three groups of patients that are especially in danger and where he recommends the use of intravenous steroids: 1) history of amaurosis fugax but no visual loss; 2) complete or marked loss of vision (judged by both visual acuity and visual fields) in one eye; and 3) early signs of involvement of the second eye.
Studies, cited by the review article (1), show the need that the patients with loss of vision are hospitalized and treated by ophthalmologists in the acute phase and treat them with intravenous application of 500–1.000 mg of methylprednisolone over 3 days, followed by oral prednisone in dose of 1–1.5 mg/kg of body weight in decreasing dose and then continue the treatment in cooperation with rheumatologists.
British Society of Ophthalmology has adopted similar guidelines in which they recommend 3 day (500–1.000 mg i.v. methylprednisolone) in patients that have evolving visual loss (recent onset visual symptoms over 6–12 h) or transient visual loss. In patients with established visual loss, they recommend at least 60 mg prednisone daily, to protect the contralateral eye. In uncomplicated GCA (no jaw claudication or visual disturbance) 40–60 mg oral prednisone daily (not less than 0.75 mg/kg daily) is recommended.

Hayreh SS, Biousse V. Treatment of acute visual loss in giant cell arteritis: should we prescribe high-dose intravenous steroids or just oral steroids? J Neuro-Ophthalmol 2012; 32: 278—87.

NEARTERITIČNA SPREDNJA ISHEMIČNA OPTIČNA NEVROPATIJA IN ZDRAVLJENJE S KORTIKOSTEROIDI
PATIENTS WITH NON-ARTERITIC ANTERIOR ISCHAEMIC OPTIC NEUROPATHY AND CORTICOSTEROID THERAPY

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AIM: To present clinical characteristics of patients with anterior ischaemic optic neuropathy and the results of treatment of anterior ischaemic optic neuropathy with pharmacological doses of corticosteroids.
PATIENTS AND METHODS: Study included 46 patients aged 60–75 years with anterior ischaemic optic neuropathy who were treated with corticosteroid therapy; 56% of the patients are males and 44% are females. All patients underwent ophthalmologic examination, ***Octopus*** 900 perimetry, VEP, OCT, radiological and laboratory testing.
RESULTS: The most common forms of visual field defect are altitudinal defect and diffuse depression. Corticosteroid therapy led to recovery in 62% of patients, in 33% of patients did not change, while the deterioration occurred in 5% of patients.
CONCLUSIONS: The therapy of this condition is still controversial. Although improvement of visual function in patients with non-arteritic anterior ischaemic optic neuropathy treated with systemic corticosteroids was found, this study should be complemented with higher number of patients.

PRIZADETOSTI VIDNEGA POLJA PRI NE-ARTERITIČNI IN ARTERITIČNI SPREDNJI ISHEMIČNI OPTIKONEVROPATIJI
VISUAL FIELD DEFECTS IN NON-ARTERITIC AND ARTERITIC ANTERIOR ISCHAEMIC OPTIC NEUROPATHY

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NAMEN: Ugotoviti razlike izpadih v vidnem polju pri bolnikih z ne-arteritično (NA-AION) in arteritično sprednjo ishemično optikonevropatijo (A-AION) pri začetnem pregledu s pomočjo računalniško vodene perimetrije.
METODE: Retrospektivno smo pregledali medicinsko dokumentacijo vseh bolnikov z AION. Od 140 bolnikov, ki so bili napoteni na naš oddelek od leta 2004 do leta 2014, jih je 85 izpolnjevalo vključitvena merila in so bili zajeti v prvo skupino. V drugi skupini (24 bolnikov), kjer je bil temporalni arteritis dokazan z biopsijo, jih je v obdobju od 2008 do 2015 13 imelo so znake AION.
REZULTATI: Razen klinične slike AION, drugih očesnih sprememb ni bilo. V skupini NA-AION je bil pri 54 od 85 bolnikov (63,5 %) prizadet spodnji del vidnega polja, pri 20 od 85 (23,5 %) zgornji del. Značilni spodnji altidudinalni izpad z ostro mejo vzdolž horizontalnega meridiana je bil dokazan pri 30 od 85 bolnikov (35,3 %). Koncentrično zožitev je imelo 14 od 85 bolnikov (16,5 %). V skupini bolnikov z A-AION smo opazili obojestransko prizadetost pri 10 od 13 bolnikov (76,9 %). Popolno je izgubilo vid na enem ali obeh očeh 6 bolnikov (46,2 %). Pri vseh bolnikih z A-AION je bilo opravljeno obojestransko testiranje vidnega polja. Koncentrična zožitev vidnega polja za 10 do 40 stopinj je bila dokazana v vseh očeh v skupini A-AION, tudi pri očeh brez prizadetosti vida.
ZAKLJUČEK: Naši rezultati potrjujejo, da obstaja pomembna razlika v izgubi vidnega polja med NA-AION in A-AION. Naše raziskave potrjujejo, da ja kombinacija relativnega inferiornega altitudinalnega izpada z absolutnim nazalnim izpadom najpogostejša oblika izpada v vidnem polju pri prvem pregledu bolnikov z NA-AION. Vsi bolniki z A-AION so imeli koncentrično zoženo vidno polje, četudi na očeh brez prizadetega vida.

PURPOSE: To analyse visual field defects in patients with non-arteritic (NA-AION) and arteritic anterior ischaemic optic neuropathy (A-AION) at initial examination using automated static perimetry.
METHODS: In all AION patients a retrospective chart review was performed. From 140 NA-AION patients in the first group who were admitted to our department from 2004 to 2014, 85 patients fulfilled inclusion criteria and were enrolled in the first group. In the second group, from 24 patients with biopsy-proven temporal arteritis during the period from 2008 to 2015, in 13 patients A-AION was observed.
RESULTS: Except for clinical picture of AION other ophthalmological findings were normal. In NA-AION group, regardless the extent of the visual field defects, inferior part was affected in 54 of 85 patients (63.5%), superior in 20 of 85 (23.5%). Typical inferior altitudinal defect with sharp border along the horizontal meridian was observed in 30 of 85 patients (35.3%). Concentric narrowing of the visual field occurred in 14 of 85 patients (16.5%). In A-AION group bilateral manifestation was observed in 10 of 13 patients (76.9%). Complete visual loss in one or both eyes was observed 6 patients (46.2%).Visual field testing was performed on both eyes in all A-AION patients with visual loss. Concentric narrowing of the visual field from 10 to 40 degrees occurred in all eyes, including eyes with no visual loss.
CONCLUSIONS: Our study revealed that there is an important difference between visual field loss in NA-AION and A-AION. Combination of relative inferior altitudinal defect with absolute inferior nasal defect was the most common pattern of visual field defects at initial examination in NA-AION patients. In A-AION patients the most common pattern of visual field defects at initial examination was concentric narrowing not only in the affected eyes but also in the non affected eyes.

DIABETIČNA PAPILOPATIJA – PROGNOZA V ODVISNOSTI OD SOČASNE NEARTERITIČNE ANTERIORNE ISHEMIČNE OPTIČNE NEVROPATIJE

DIABETIC PAPILLOPATHY – PROGNOSIS REGARDING COINCIDENCE OF NON-ARTERITIC ANTERIOR ISCHAEMIC OPTIC NEUROPATHY

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NAMEN: Klasična prezentacija diabetične papilopatije je hiperemični edem papile z blago disfunkcijo vidnega živca z negativnim RAPD in minimalnim izpadom v vidnem polju. Pacienti so pogosto asimptomatski, lahko pa opazijo le blago poslabšanje vida. Diabetično papilopatijo povezujemo z dobro prognozo s spontano resolucijo edema. V nekaterih primerih pa pride lahko do nepovratne okvare vida. Namen prispevka je povezati prognozo diabetične papilopatije s sočasnostjo nearteritične anteriorne ishemične optične nevropatije (NAION).

METODE: Retrospektivna raziskava popisov pacientov z diabetično papilopatijo, ki so bili zdravljeni na Očesni kliniki v Ljubljani med januarjem 2011 in februarjem 2015.

REZULTATI: Pregledali smo popise osem pacientov ki so bili zaradi diabetične papilopatije zdravljeni na Očesni kliniki v omenjenem obdobju. Njihova povprečna starost je bila 54 let, z razponom od 30 do 70 let. Pet od osem pacientov (62,5 %) je imelo ob diabetični papilopatiji še neproliferativno diabetično retinopatijo. Pri polovici pacientov je prišlo v času do izboljšanja vida, pri drugi polovici je vidna ostrina upadla. V tej skupini je bila pri treh (od štirih) pacientov slaba prognoza vida povezana z NAION (37,5 % vseh pacientov). Pri enem pacientu pa je bilo poslabšanje vida posledica proliferativne diabetične retinopatije z neovaskularizacijo diska in trakcijskimi membranami. V akutni fazi smo se za zdravljenje odločili pri treh od osem pacientov. Eden je prejel kortikosteroid intravenozno, dva pa sta prejela intravitrealno injekcijo triamcinolona, eden v kombinaciji z bevacizumabom.

ZAKLJUČEK: Prognoza diabetične papilopatije je variabilna. V veliki meri je odvisna od obsega sočasne NAION, ki v akutni fazi oz. ob prezentaciji navadno ni očitna. Odvisna pa je tudi od stopnje diabetične retinopatije. Zdravljenje diabetične papilopatije ni jasno definirano in je rezervirano za primere z obojestransko prizadetostjo in hujšim poslabšanjem vidne ostrine.

PURPOSE: Classic presentation of diabetic papillopathy is with hyperaemic disc swelling with mild dysfunction of optic nerve with normal pupil reactions, negative RAPD and minimal-to-no visual field loss. Patients are often asymptomatic, but may sometimes notice a decrease in visual acuity. Diabetic papillopathy is usually associated with good visual prognosis with spontaneous resolution of edema. Nevertheless, there are some cases in which permanent visual impairment can develop. Our aim is to describe the prognosis in diabetic papillopathy regarding coincident presence of non-arteritic anterior ischaemic optic neuropathy (NAION).

METHODS: A retrospective review of patients who were diagnosed with diabetic papillopathy and treated at the Eye Clinic Ljubljana, between January 2011 and February 2015.

RESULTS: Eight cases were identified and reviewed. Median age of these patients was 54 years (range from 30 to 70). Five out of eight patients (62.5%) had non-proliferative diabetic retinopathy besides diabetic papillopathy. Half of patients had visual acuity improvement, in the other half vision deteriorated. In three out of four patients the prognosis was poor due to NAION (37.5% of all patients). In one patient, poor prognosis was due to progression to proliferative diabetic retinopathy with NVD and traction. Three patients out of eight received treatment in the acute stage, one received corticosteroids intravenously and two received intravitreal injection of triamcinolone, one in combination with bevacizumab.

CONCLUSIONS: Prognosis in diabetic papillopathy is variable. It depends largely on the extent of associated

NAION that may not be obvious in the acute stage. It depends on the degree of diabetic retinopathy as well. Management of diabetic papillopathy is not well defined and is recommended especially for the cases with bilateral involvement and severe decrease in visual acuity.

OCENA DELOVANJA MREŽNICE PRI SESTRI IN BRATU S SINDROMOMA *MELAS* IN *MIDD* IN MUTACIJO MITOHONDRIJSKE DNK *A3243G*

FUNCTION OF THE RETINA IN SISTER AND BROTHER WITH *MELAS* AND *MIDD* SYNDROME WITH MITOCHONDRIAL *A3243G* MUTATION

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NAMEN: Opis fenotipa in ocena delovanja mrežnice pri bratu in sestri z mrežnično distrofijo s potrjeno točkovno mutacijo mitohondrijske DNK A3243G.

METODE: Pri 41 letni sestri z mitohondrijsko encefalopatijo z laktacidozo in možganskim kapem podobnimi epizodami (MELAS) in pri 47 letnem bratu z podedovano sladkorno boleznijo in gluhostjo (MIDD) smo testirali vidno polje, napravili elektrofiziološke preiskave, ozadje smo slikali z avtofluorescenco in OCT.

REZULTATI: Sestro z glukozno intoleranco in težavami s sluhom smo prvič videli oktobra 2013, vidna ostrina je bila normalna, imela je paracentrani skotom levega očesa. Na očesnem ozadju so bile paramakularno temporalno pregrupacije pigmenta z manjšimi atrofičnimi spremembami, na slikanju z AF so bile te lezije hipo- in hiperavtofluorescentne, na OCT so bile nepravilnosti v sloju fotoreceptorjev in RPE. Elektrofiziološke preiskave so pokazale disfunkcijo makule: obojestransko abnormni mfERG, znižani PERG P50 in N95 levo, generalizirano znižano amplitudo čepnic obojestransko. Decembra 2014 je bila bolnica hospitalizirana na nevrološki kliniki zaradi ishemične možganske kapi (IMK) levo parietookcipitalno, potrjena je bila laktacidoza in mutacija mitohondrijske DNK A3243G (MELAS). Februarja 2016 je – kljub uvedeni antiagregacijski zaščiti – utrpela še dve dodatni IMK, prvo desno okcipitalno ter drugo desno parietalno z obojestransko hudo izgubo vida in hemiparezo. Brat z isto mutacijo je sladkorni bolnik in je naglušen (MIDD). Opazil je, da slabše vidi na levo oko, vidno polje je bilo normalno. Na očesnem ozadju levega očesa paracentralno je bila drobna pigmentna pregrupacija z abnormno AF in spremembami na ravni fotoreceptorjev in RPE na OCT.

ZAKLJUČEK: Pri bolnici z makularno distrofijo in sindromom MELAS smo odkrili pomembne nepravilnosti mfERG, znižane amplitude čepnic in znižan PERG P50 levo v skladu spremembami AF. Dodatno je prišlo do obojestranskega poslabšanja vida in hemipareze zaradi več IMK. Pri bratu z MIDD so bile vidne diskretne spremembe le na levem očesu, ki še niso vplivale na vidno funkcijo.

PURPOSE: To report phenotype and investigate retinal function in two patients with confirmed mitochondrial DNA A3243G point mutation.

METHODS: A 41 years old sister with mitochondrial encephalopathy with lactic acidosis and stroke like episodes (MELAS) and her 47 years old brother with maternally inherited diabetes and deafness (MIDD) were tested with visual field, electrophysiology testing. autofluorescence imaging and OCT.

RESULTS: Sister with glucose intolerance and hearing problems was seen in October 2013. Visual acuity was normal, visual field of the left eye showed paracentral scotoma, pigmentary mottling and small atrophic lesions were seen bilaterally temporal to the maculae. Irregular hyper and hypoautofluorescence regions with irregularities seen in the layer of photoreceptors and RPE were observed by OCT. Electrophysiology showed macular dysfunction; bilaterally abnormal mfERG, abnormal PERG P50 and N95 responses in left eye, generally decreased cone amplitudes bilaterally. In December 2014 woman was hospitalized at neurology clinic due to ischaemic stroke (IS) in left parietal–occipital region, lactic acidosis was detected, mitochondrial DNA A3243G point mutation was confirmed (MELAS). In February 2016 she suffered from two additional strokes despite antiagregation therapy in right occipital and parietal region, bilateral visual function worsened dramatically, she is hemiparetic. The brother with the same mutation with diabetes and deafness (MIDD) had slight visual problems in his left eye. Pigmentary mottling was seen in his left fundus, there was localised abnormal AF and irregularities seen in the layer of photoreceptors and RPE in his left eye.

CONCLUSIONS: Patient with MELAS had macular dystrophy with bilateral significant mfERG abnormalities, decreased cone amplitudes and changes of PERG P50 in her left eye in accordance with fundus AF abnormalities. Later significant additional visual loss and hemiparesis was observed due to several CVI. Patient with MIDD had slight changes in his left eye only, with still good visual acuity.

GIGANTSKI PROLAKTINOM IN ENOSTRANSKA IZGUBA VIDA

GIANT PROLACTINOMA AND UNILATERAL VISION LOSS

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NAMEN: Prikazati primer bolnika z gigantskim prolaktinomom in unilateralno izgubo vida.
METODE: Zaradi ugotovljenega slabšega vida so z medicine dela napotili v našo oftalmološko ambulanto 55- letnega moškega. Najboljša korigirana vidna ostrina na desnem očesu je bila 1.0, na levem prsti 5 m. V očesnem statusu razen temporalno rahlo bledejše PNO (levo oko) posebnosti nismo odkrili. Vidno polje desnega očesa je bilo brez posebnosti, na levem smo pričakovano ugotovili močno znižano senzitivnost mrežnice (relativni in absolutni skotomi). Test Ishihara je pokazal diskromatopsijo levega očesa (DO 15/15, LO 9/15). Nemudoma smo opravili CT glave, kjer je bila na lobanjski bazi vidna tumorska formacija v izmeri 6,7 x 6 cm. Tumor je v celoti destruiral in preraščal turško sedlo, obraščal je obe notranji karotidni arteriji ter vraščal proti apeksu leve orbite. Pod nujno je bil napoten v UKC Ljubljana, kjer so na kliničnem oddelku za endokrinologijo ugotovili, da gre za gigantski prolaktinom. Kljub zelo visokim koncentracijam prolaktina sekundarnega hipogonadizma ni bilo. Uvedli so medikamentno zdravljenje z dopaminskim agonistom kabergolinom.
REZULTATI: Pacientu se je med hospitalizacijo po zdravljenju s kabergolinom najboljša korigirana vidna ostrina na levem očesu popravila od prsti 5 m do 1.0. Izpadov v vidnem polju 2 meseca po hospitalizaciji ni bilo več. Pol leta po zdravljenju smo na kontrolnem MR možganov ugotavljali bistven regres tumorja (3,3 cm x 3,5 cm). Pacient je danes asimptomatski.
ZAKLJUČEK: Gigantski prolaktinomi (večji od 4 cm) so zelo redki in pogosto vraščajo v okolne strukture in s tem povzročajo različno simptomatiko. Poleg lokalnih simptomov delujejo tudi sistemsko (prolaktin). Dopaminski agonisti (kabergolin, bromokriptin) so terapija izbire, saj so varni in učinkoviti pri zdravljenju prolaktinomov. Ob ustreznih indikacijah je potrebna operacija.

PURPOSE: To report a case of a patient with giant prolactinoma and unilateral vision loss.
METHODS: A 55 years old male patient was referred to our office because of vision loss on his left eye. He first presented with best corrected visual acuity 1.0 on his right eye and counting fingers at 5 meters on his left eye. Slit lamp examination revealed slight temporal pallor on his left optic disc. Vision field testing on his right eye was unremarkable, on his left eye we noticed loss of retinal sensitivity (relative and absolute scotomas). Ishihara test revealed dyschromatopsia on his left eye (R 15/15, L 9/15). Head CT revealed big tumor (6.7 X 6 cm) on a skull base. The tumour destructed and overgrew sella turcica, encirceled both internal carotid arteries and grew towards the apex of the left orbit. We referred the patient to UKC Ljubljana, where endocrinology department diagnosed giant prolactinoma. Although levels of prolactin in the blood were high, there was no secondary hypogonadism. The patient was treated with intravenous dopamine agonist cabergoline.
RESULTS: After the treatment with cabergoline patients best corrected visual acuity recovered to 1.0 (left eye). 2 months later visual fields were unremarkable, 6 months later head MRI revealed significant tumour regression (3.3 cm x 3.5 cm). Today the patient is asymptomatic.
CONCLUSIONS: Giant prolactinomas (bigger then 4 cm) are very rare and usually invade the surrounding structures. In addition to local symptoms they cause systemic symptoms (prolactin). Dopamin agonists (cabergoline, bromocriptine) are the first line of treatment. However, surgical or more aggressive approach must be considered where indicated.

UPAD VIDA KOT PRVI ZNAK PRI BOLNIKU Z BAKTERIJSKIM ENDOKARDITISOM

LOSS OF VISION AS THE FIRST SIGN OF INFECTIVE ENDOCARDITIS

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NAMEN: Prikazati primer očesnih sprememb pri subakutnem bakterijskem endokarditisu: 69-letni moški je bil napoten v urgentno očesno ambulanto zaradi nenadnega pojava vijoličaste svetlobe ter hudega upada vida na levem očesu dva dni poprej. Dva meseca prej je izgubil apetit, shujšal je 10 kg ter močno telesno oslabel. Ker je 8 mesecev prej izgubil ženo, so svojci težave pripisali depresiji. Ob pregledu je bila vidna ostrina na desnem očesu GPO, na levem 0,8 s.c. Na očesnem ozadju je bil viden obojestranski edem vidnega živca s posamičnimi plamenastimi in lužastimi krvavitvami. Zvišane vrednosti vnetnih parametrov je infektolog pripisal uroinfektu in uvedel zdravljenje z nitrofurantoinom. Izvidi RTG prsnih organov in CT glave so bili normalni. Ultrasonografija srca je pokazala aortno in mitralno hibo, ki pa nista bili hemodinamsko pomembni. Peti dan hospitalizacije je pričel težje dihati. Razvilo se je hudo levostransko srčno popuščanje, zato je bil premeščen v intenzivno internistično enoto. Kontrolna ultrasonografija srca je razkrila infekcijski endokarditis na dvolistni aortni zaklopki. Zaradi hude aortne insuficience je bila narejena kirurška zamenjava aortne zaklopke, uvedeno je bilo parenteralno antibiotično zdravljenje. Po popolnem okrevanju se je vidna ostrina izboljšala, spremembe na mrežnici so v nekaj mesecih izzvenele.
ZAKLJUČEK: Nespecifične spremembe očesnega ozadja in poslabšanje vida so lahko prvi znak usodnega infekcijskega endokarditisa.

PURPOSE: This case highlights ocular findings in subacute infective endocarditis. A 69-year-old man presented to the eye emergency department. He complained of sudden purple spots of light and severe loss of vision in his left eye 2 days previously. Due decreased appetite he lost 22 pounds. He complained of generalized weakness during the previous 2 months. He lost his wife 8 months before, his family thought he was depressed. On ophthalmic examination, visual acuity was HM in the right eye and 0.8 in the left. Fundus examination showed both optic disc swelling with flame and blot haemorrhages. Blood tests revealed raised inflammatory markers, the infectologist thought it was due to urinary tract infection. The patient was treated with antibiotic nitrofurantoin. Chest X-ray and CT of the brain were normal. Transthoracic echocardiography demonstrated aortic and mitral valve disease hemodynamically not significant. On the 5th day of hospitalization the patient started complaining of heavy breathing. He was transferred to the intensive care unit because of severe left sided heart failure. Following transoesophageal echocardiogram revealed bicuspid aortic valve regurgitation and signs of infective endocarditis. The patient underwent prosthetic valve implantation and was treated with intravenous antibiotics. After complete recovery, visual acuity improved and the retinal findings regressed within some months.
CONCLUSIONS: Non-specific retinal findings associated with vision deterioration may be the first symptom of life-threatening bacterial endocarditis.

IDIOPATSKA INTRAKRANIALNA HIPERTENZIJA PRI OTROCIH. PRIKAZ PRIMEROV
IDIOPATHIC INTRACRANIAL HYPERTENSION IN CHILDREN. A CASE SERIES

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NAMEN: Prikazati primere otrok z obojestranskim edemom papile vidnega živca v sklopu idiopatske intrakranialne hipertenzije (IIH). IIH je po definiciji povišan intrakranialni tlak brez kliničnih, radioloških ali laboratorijskih dokazov za sekundarni vzrok. Je zelo redka bolezen pri otrocih mlajših od deset let in izjemno redka pri malčkih mlajših od treh let. Posebnost pri otrocih z IIH je, da se ne pojavlja pogosteje pri bolnicah z višjim indeksom telesne mase (ITM) ter da diagnozo otežuje določitev intrakranialnega tlaka pri lumbalni punkciji otrok. Diagnostični kriteriji za IIH so: edem papil, normalen nevrološki status (odstopanja v delovanju možganskih živcev niso izključitveni dejavnik), na nevroradioloških preiskavah glave vidni znaki povišanega intrakranialnega tlaka brez vidne vzročne patologije in povišan tlak likvorja pri lumbalni punkciji. Glavobol je najpogostejši simptom in se pojavlja pri več kot 90 % bolnikov, vendar je njegova ocena pri otroku lahko nezanesljiva. Za ohranitev vida in odpravo simptomov je pomembno čimprejšnje zdravljenje s peroralnim ali intravenskim acetazolamidom ter eventualno znižanje telesne teže.
METODE: Predstavljamo 5 otrok (tri fante in dve dekleti) z edemom papile obojestransko v sklopu IIH, ki smo jih obravnavali na Očesni kliniki v Ljubljani od septembra 2015 do marca 2016. Vsi bolniki so bili obravnavani tudi s strani pediatra nevrologa in endokrinologa.
REZULTATI: Ob nastopu težav je bil najmlajši bolnik star 4 leta, najstarejša bolnica pa 15 let. Trije bolniki so imeli povišan ITM, vsi bolniki so imeli izključeno pridruženo patologijo. Pri najstarejši bolnici je bil prisoten tudi obojestranski intermediarni uveitis z vaskulitisom mrežničnega žilja. Po terapiji smo bolnike spremljali s pregledom vidne ostrine, barvnega vida, očesnim pregledom, vidnim poljem, fotodokumentiranjem očesnega ozadja ter optično koherentno tomografijo vidnega živca.
ZAKLJUČEK: Razumevanje, diagnostika in zdravljenje IIH otrok je osnovana na odrasli populaciji, kljub temu, da gre za razlike v IIH med obema populacijama. Z boljšim razumevanjem IIH pri otrocih bomo dosegli bolj specifične diagnostične in terapevtske smernice.

PURPOSE: To present case series of children with bilateral papilledema in idiopathic intracranial hypertension (IIH). IIH is characterized by increased intracranial pressure without clinical, radiological or laboratory evidence of intracranial pathology. It is uncommon in children under ten years and extremely rare in children under three years. Unlike adults with IIH, in children the disease is not commonly reported in female patients with high body mass index (BMI) and the diagnosis is usually harder with measurement of intracranial pressure by lumbar puncture of child. Diagnostic criteria for IIH are: papilledema, normal neurologic status (abnormalities in cranial nerve function are not an exclusion criteria), signs of increased intracranial pressure without intracranial pathology on neuroimaging and raised intracranial pressure at lumbar puncture. Headache is the most common symptom present in 90% of patients, but it is difficult to identify in children. The first line of treatment to preserve vision is oral or intravenous acetazolamide and counselling about weight reduction in obese patients.
METHODS: We present 5 cases of children (three boys and two girls) with bilateral papilledema connected with IIH, who were in diagnostic procedure at Eye Clinic Ljubljana from September 2015 to March 2016. All patients were also in diagnostic procedure at paediatric neurologist and endocrinologist.
RESULTS: At the beginning of symptoms, the youngest patient was 4 years old and the oldest 15 years. Three patients had high BMI and none of the patients had associated pathology. The oldest patient also had bilateral intermediate uveitis with retinal vessels vasculitis. After treatment we made visual acuity and colour vision testing, ophthalmological examination, visual field testing, fundoscopic photodocumentation and optical coherence tomography of optic nerve.
CONCLUSIONS: Understanding, diagnosis and treatment of children with IIH is based on adults, although there are some important differences between both populations with IIH. With better understanding of IIH in children we will achieve more specific diagnostic and treatment guidelines.

OKCIPITALNA KAP PRI MLADEM PACIENTU – PREDSTAVITEV PRIMERA
OCCIPITAL LOBE INFARCTION IN A YOUNG ADULT – A CASE REPORT

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NAMEN: Predstaviti zahteven primer mladega pacienta z meglenim vidom v delu vidnega polja enega očesa.
METODE: Oftalmološki pregled, barvni vid, RAPD, statična in kinetična perimetrija, OCT, test suhega očesa, CT in MRI glave ter orbit.
REZULTATI: V urgentno oftalmološko ambulanto je prišel 30-letni policist po končani nočni izmeni zaradi nenadnega pojava meglenega vida v stranskem delu vidnega polja levega očesa. Opazil ga je dva dni poprej, zjutraj, ko se je prebudil. V tem času se polje meglenega vida ni dodatno širilo. Opiše ga kot pogled skozi umazano steklo. Vidnih fenomenov, poškodbe ali drugih zdravstvenih težav ni imel, brez redne terapije. V družini ni bilo pojava kardiovaskularnih bolezni v zgodnji starosti. Sicer je kadilec in pokadi 20 cigaret na dan. Status obeh oči ob prvem obisku: nekorigirana vidna ostrina 1,0, RAPD negativen, barvni test po Isihari 15/15, bulbomotorika neomejena, sprednja in zadnja biomikroskopija brez odstopanj. Edini izstopajoči najdbi sta bili nespecifični izpadi v kinetični perimetiji (Goldman) in nizek rezultat Schirmerjevega testa (5 mm).
Kljub vlaženju se stanje ni izboljšalo in pacient je še vedno tožil nad meglenim vidom, nevroloških sprememb ni bilo. Ponovni oftalmološki pregled ni pokazal novih odstopanj, še vedno pa je pokazal nespecifične izpade v vidnem polju (Goldman). CT orbite in možganov je bil brez sprememb. Ob ponovitvi merjenja vidnega polja, tokrat s statično perimetrijo, pa je bil očiten izpad nepopolne kongruentne levostranske homonimne hemianopsije z ohranjeno fiksacijo. Z MRI glave je bil odkrit okcipitalni infarkt v področju sulkusa kalkarinusa.
ZAKLJUČEK: Večina okcipitalnih lezij, ki jih diagnosticira oftalmolog, je posledica možganske kapi in ne povzročajo drugih nevroloških izpadov. Ključna najdba je specifičen izpad v vidnem polju. Pacienti z omenjeno diagnozo so pogosteje mlajši, ženske, brez težav s hiperkoagualabilno krvjo, brez arterijske hipertenzije in imajo nizko raven holesterola v primerjavi s pacienti, ki imajo infarkt drugje.

PURPOSE: To present the challenging case of a young adult with partly blurred vision in one eye after a night shift.
METHODS: Complete ophthalmic examination, colour and relative afferent pupillary defect testing, static and kinetic perimetry, OCT imaging, dry eye testing, CT and MRI.
RESULTS: A 30 years old policeman came in our emergency department, because of sudden blurred vision in one part of his left eye visual field after he woke up in the morning 2 days before (“like looking through milky glass”). He denied any visual phenomena, injury, taking drugs or any illnesses. He is nearsighted and using glasses with no history of eye problems or infections. He is otherwise healthy and in good condition. No family history of cardiovascular illnesses in younger age. Smoking 20 cigarettes per day.
First visit findings for both eyes: BCVA 20/20, no relative pupillary defect, colour vision test 15/15, no change on the posterior pole. Only non-specific change was noted on kinetic (Goldman) perimetry and low Schirmer‘s test (5 mm).
After eye lubrication, complaints still remained with no additional neurologic deficits and progression. We reran all tests, with no deterioration seen, except in VF of right eye. CT revealed no lesions in the orbit or brain. We rechecked VF with static perimetry which showed incomplete congruous left homonymous hemianopia, respecting vertical meridian and sparing fixation. MRI scan revealed cortical infarct in the area of right calcarine sulcus.
CONCLUSIONS: Most occipital lobe lesions which are diagnosed by an ophthalmologist, are the result of stroke, causing no other neurological deficit.
Visual field abnormality is the key finding in patents with occipital lobe infarction. Patients with occipital lobe infarct – compared to patients with infarcts located elsewhere – are younger, female, with hypercoagulabe state, no hypertension and low cholesterol.

PRIMER VERTEBROBAZILARNEGA MOŽGANSKEGA INFARKTA Z UNILATERALNO INTERNUKLEARNO OFTALMOPLEGIJO

A CASE OF VERTEBROBASILAR STROKE WITH UNILATERAL INTERNUCLEAR OPHTHALMOPLEGIA

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NAMEN: Prikazati primer bolnika z unilateralno internuklearno oftalmoplegijo zaradi vertebrobazilarnega možganskega infarkta (ICV).
METODE: Triinšesdesetletni bolnik je navajal, da je pred 3 urami opazil dvojni vid. Ob pogledu v desno smo ugotovili nezmožnost addukcije levega očesa čez mediano linijo in nistagmus desnega očesa v abdukciji, konvergenca je bila normalna. Zaradi suma na ICV smo opravili nujni CT glave, ki ni pokazal ishemije. Pogledan je bil pri nevrologu, ki je ugotovil diskretno desnostransko hemiparezo. Opravili smo MR glave, ki je pokazala 8 x 5 mm velik subakutni ishemični infarkt v področju ponsa centralno in bolj na levi strani, vertebralna arterija je bila zožena za več kot 90 %. Opravili smo tudi ultrasonografijo srca, holterski monitoring; izvida obeh v mejah normale. Opravili smo intrakranialni in aortocervikalni CTA, kjer smo ugotovili hemodinamsko nepomembne plake na karotidnih arterijah in nekoliko zoženo vertebralno arterijo. Uvedli smo dvotirno antiagregacijsko terapijo (acetilsalicilna kislina in klopidogrel), maksimalno antilipemično terapijo (statin) ter minimalni odmerek ACE-inhibitorja.
REZULTATI: Bulbomotorika se je po 3,5 meseca popolnoma normalizirala, pacient ni več imel dvojnih slik. Danes je pacient asimptomatski in na sekundarni preventivni antiagregacijski, antilipemični ter antihipertenzivni terapiji.
ZAKLJUČKI: Internuklearna oftalmoplegija nastane zaradi poškodbe longitudinalnega medialnega fascikulusa. Ob pogledu kontralateralno (od prizadetega očesa) je prizadeto oko nezmožno addukcije, kontralateralno oko abducira, vendar z nistagmusom. To privede do horizontalne diplopije. Najpogostejši vzrok pri mlajših je multipla skleroza, internuklearna oftalmoplegija je pogosto bilateralna. Pri starejših je večinoma unilateralna, najpogostejši vzrok je možganski infarkt.

PURPOSE: To report a case of unilateral internuclear ophthalmoplegia because of a vertebrobasilar stroke.
METHODS: A 63 years old patient was referred to our office because of a sudden onset of diplopia (lasting 3 hours). When patient made an attempt to look right the left eye could not adduct, right eye abducted, however with nystagmus. Convergence was normal. Because stroke was suspected, head CT was done but the results were unremarkable. He was referred to neurologist, who found discrete right hemiparesis. MRI of the head showed 8 x 5 mm big subacute ischaemic stroke in the pontine region (centrally and on the left side), vertebral artery was narrowed more then 90%. The results of echocardiography and Holter monitoring were unremarkable. Intracranial and aortocervical CTA demonstrated hemodynamically insignificant plaques in the carotid arteries and narrowed vertebral artery. We had introduced dual antiplatelet therapy (acetylsalicylic acid and clopidogrel), maximal antilipemic therapy (statin) and minimal dosage of ACE inhibitor.
RESULTS: After 3.5 months eye movements fully normalised, diplopia was not present anymore. Today the patient is asymptomatic and on secondary preventive antiplatelet, antilipemic and antihypertensive therapy.
CONCLUSIONS: Internuclear ophthalmoplegia is caused by medial longitudinal fasciculus damage. When an attempt is made to gaze contralaterally (relative to the affected eye), the affected eye adducts minimally. The contralateral eye abducts, however nystagmus is present. This leads to horizontal diplopia. The most common cause of bilateral internuclear ophthalmoplegia in young adults is multiple sclerosis. In the elderly, it is mostly unilateral, and the most common cause is stroke.

BOLNIK Z MOTNJO VIDA IN PREHODNO AFAZIJO V URGENTNI OČESNI AMBULANTI

PATIENT WITH VISUAL IMPAIRMENT AND TRANSIENT APHASIA IN EYE EMERGENCY DEPARTMENT

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NAMEN: Prehodna afazija in motnje vida s homonimno hemianopsijo pri bolniku z epilepsijo.
METODA IN PACIENT: Prikaz primera. Predstavljamo primer 44-letnega moškega, ki je bil napoten v urgentno očesno ambulanto zaradi 10-dnevnega zaznavanja nenavadnega bleščanja pred obema očesoma. Med pregledom se je pričel nenadoma čudno obnašati, nerazumljivo je momljal, deloval je zmedeno, močno se je potil, z rokami je poskušal pokazati, da nekaj ni v redu. Pregledal ga je nevrolog, ki je ugotovil znake za desnostransko hemianopsijo, vendar ni znal pojasniti nenadne spremembe vedenja.
REZULTATI: Nujni CT glave je bil v mejah normale. Kmalu po opravljeni CT-preiskavi se je bolnikovo obnašanje povsem normaliziralo. Naslednji dan je opravil meritev vidnega polja, ki je potrdila desnostransko homonimo hemianopsijo. Ob koncu preiskave je nenadoma ponovno postal afazičen, neodziven, pri pregledu ni zmogel več sodelovati. Opravil je elektroencefalografijo, ki je pokazala kompleksne parcialne epileptične napade. Na MRI možganov je bil viden rahel edem korteksa parietookcipitalno levo. Normalen izvid cerebrospinalne tekočine je ovrgel sum na meningoencefalitis. Po uvedbi antiepileptičnega zdravljenja se napadi motenj vida in afazije niso ponovili, vidno polje se je postopno izboljšalo.
ZAKLJUČEK: Pri bolniku smo motnje vida pripisali postepileptičnemu disfunkcijskemu sindromu. Gre za redko opisano bolezensko dogajanje, ki ga velikokrat napačno diagnosticiramo kot prehodno možgansko ishemijo.

PURPOSE: Transient aphasia and visual impairment with homonymous hemianopia in a patient with epilepsy.
METHODS AND PATIENT: A case report: a 44-year old man presented to the eye emergency department with a 10-day history of recurrent episodes of unusual glare in both eyes. During exam he suddenly started to behave strangely, was unable to speak, except for incomprehensible mumbling, appeared confused, soaked in sweat, and waving with his hands as trying to show something was wrong. Neurological examination revealed right homonymous hemianopia, however the neurologist couldn't explain sudden change in behaviour.
RESULTS: Urgent computed tomography brain scan was normal and the patient successively completely recovered. The day after visual field confirmed right homonymous hemianopia. Yet, during the visual field testing, the patient became once again suddenly confused, aphasic and unable to continue the examination. Electroencephalogram confirmed complex partial epileptic seizures. MRI of the brain revealed minor cortical edema of the left parieto-occipital region. Normal cerebrospinal fluid examination results excluded meningo-encephalitis. Antiepileptic drug therapy was started and thereafter episodes of aphasia subsided, ophthalmologic examination was normal except partial visual field defect. After the initiation of antiepileptic drug therapy episodes of transient aphasia and visual impairment subsided, whereas the visual defect gradually improved.
CONCLUSIONS: Patient's visual symptoms were ascribed to post-epileptic dysfunction syndrome. Due to its relative infrequency and lack of data, the disorder is often misdiagnosed as reversible cerebral ischaemia.

SUSAKOV SINDROM – PRIKAZ PRIMERA
A CASE OF SUSAC SYNDROME

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NAMEN: Susakov sindrom je redka vaskulopatija možganskih, mrežničnih in kohlearnih žil. Največkrat prizadene mlade ženske s klinično triado izgube vida, senzorineuralno izgubo sluha ter encefalopatijo.
METODE: Napravili smo natančen nevrološki in oftalmološki pregled 34-letne bolnice. Opravili smo slikanje očesnega ozadja, optično koherentno tomografijo, fluoresceinsko angiografijo (FA), avdiološke preiskave ter nevroradiološke preiskave glave.
REZULTATI: Pri bolnici se je sprva razvil glavobol in izguba sluha na desno uho. Magnetnoresonančno slikanje glave je prikazala številne hiperintenzivne T2-lezije, kar je kazalo na demielinizacijsko bolezen. V naslednjem mesecu je bilo vidno slabšanje nevrološkega in avdiološkega statusa. Pregled očesnega ozadja ter vidni evocirani potenciali so bili takrat v mejah normale. Dva tedna kasneje je bolnica opazila na levem očesu izpad vidnega polja nazalno zgoraj. Na FA je bila na levem očesu vidna zapora nazalne, zgornje in spodnje temporalne veje centralne retinalne arterije ter obojestransko fokalno barvanje sten arteriol. Potrjena je bila diagnoza sindroma Susac in bolnica je pričela z imunosupresivnim zdravljenjem. Ob tem je prišlo do izboljšanja stanja, vendar sta bila kljub agresivnemu zdravljenju še vedno vztrajala skotom levo zgoraj ter segmenta okluzija perifernih mrežničnih arteriol obojestransko. Prav tako je bolnica imela več epizod poslabšanja tinitusa, vrtoglavice ter sluha.
ZAKLJUČEK: Multidisciplinarni pristop je nujno potreben za zdravljenje bolnikov s sindromom Susac. Zgodnja oftalmološka obravnava s FA pomaga pri zgodnjem odkrivanju tega redkega obolenja, saj prikaže fokalno barvanje ter okluzijo mrežničnih arteriol tudi pri asimptomatskih bolnikih. Obenem je FA koristna pri vodenju ter oceni učinkovitosti zdravljenja.

PURPOSE: Susac syndrome is an uncommon disorder characterised by microangiopathy of the brain, retinal and cochlear arterioles. It typically affects young women and presents with the clinical triad of acute visual loss, sensorineural hearing loss and encephalopathy.
METHODS: A detailed neurological and ophthalmological examination was performed in a 34-year old affected female. Retinal imaging (fundus photography, optical coherence tomography, fundus fluorescein angiography [FFA]), audiological and neuroimaging studies were also conducted.
RESULTS: The patient initially presented with headaches and right sensorineural hearing loss. Brain MRI revealed numerous hyperintensive T2 lesions consistent with a demyelinated disorder. In the next month, the neurological and audiological status deteriorated and ophthalmic assessment was requested. Fundus examination and visual evoked potentials at that point were unremarkable. Two weeks later, new onset of left painless superonasal visual field loss was reported. FFA revealed left nasal, superior and inferotemporal branch retinal artery occlusion as well as multiple bilateral foci of arterial wall hyperfluorescence. The diagnosis of Susac syndrome was made and immunosuppressive treatment was initiated. Although the visual symptoms improved, a residual superior left scotoma and persistent peripheral areas of segmental retinal arterial non-perfusion were still observed after 4 months of treatment. Notably, the patient continued to experience episodes of tinnitus, vertigo and hearing loss despite aggressive immunosuppressive therapy.
CONCLUSIONS: A multidisciplinary approach is essential in managing patients with Susac syndrome. Early ophthalmological assessment with FFA can aid the diagnosis of this rare condition as it may reveal multiple focal areas of retinal arteriolar staining and occlusion even in visually asymptomatic patients. Importantly, FFA is useful in guiding and evaluating the efficiency of treatment.

AKUTNI GLAVOBOL IN DVOJNI VID PRI MLADI ŽENSKI – PRIKAZ PRIMERA

ACUTE HEADACHE AND DIPLOPIA IN A YOUNG WOMAN – A CASE REPORT

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PURPOSE: To report a case of extensive cerebral venous sinus thrombosis in a young woman
METHODS: A 34-year-old healthy woman was admitted to the neurology department with severe, sudden-onset occipital headache, nausea and vomiting. She had scratched a pimple on her scalp a few days prior to admission. Medical history also revealed a recent oral contraceptive use. Neurologic and physical examination were unremarkable except for the fever (38.1 °C). Laboratory blood tests showed significantly elevated SR and CRP serum levels. A CT scan of the brain and lumbar puncture results were unremarkable and the patient was referred for further evaluation to the infectious diseases department. Her blood cultures were positive for ***Staphylococcus aureus*** and intravenous antistaphylococcal penicillin was started. A few days later she started to complain about double vision. Ophthalmic examination revealed a complete right abduction deficit with marked esotropia and a very subtle anisocoria, that was more pronounced in dim light. The right pupil was slightly smaller then the left. The rest of the ophthalmic examination was unremarkable. Based on these findings, cavernous sinus thrombosis (CST) was suspected. An urgent CT venography confirmed thrombosis of the right cavernous, sigmoid and transverse sinus with partial occlusion of the left cavernous sinus and the right internal jugular vein.
RESULTS: Anticoagulant therapy was instituted and the patient's condition gradually improved. She was given eye movement exercises and after 4 months, there was only a slight abduction deficit in the extreme right position of gaze.
CONCLUSIONS: CST is a rare, serious and potentially lethal disease. The favourable outcome in our case was attributable to early diagnosis and institution of appropriate therapy. Both medical history and detailed clinical examination, including the assessment of pupillary reactions, were of key importance in establishing the correct diagnosis in our case.

OCENA *RAPD* S POMOČJO ŠPRANJSKE SVETILKE
ASSESSMENT OF *RAPD* USING SLIT LAMP

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NAMEN: Oceniti relativni aferentni pupilarni defekt (RAPD) s pomočjo špranjske svetilke. Ocena RAPD s pomočjo ročne svetilke ali direktnega oftalmoskopa je velikokrat nezanesljiva, zlasti, ko gre za manjše zenice in temno obarvanost šarenice.
METODE: Uporabili smo špranjsko svetilko tipa Haag-Streit, pri kateri smo širino snopa nastavili na 1 mm (oznaka 10) in regulirali višino snopa tako, da je ustrezala vertikalnemu premeru zenice prizadetega očesa. Nato smo z istim snopom posvetili v zdravo oko in izmerili razliko v dolžino snopa, ki je bil viden na šarenici, če se je le-ta skrčila bolj kot na prizadetem očesu.
REZULTATI: Če je šlo za RAPD, je bil le-ta natančno viden, povečan in merljiv na špranjski svetilki. V nobenem primeru ni bil način ugotavljanja RAPD manj natančen kot pri ročni svetilki ne glede na to, da pri tem ni bila povsem izključena akomodativna komponenta. Opisana tehnika omogoča tudi natančnejšo kvantifikacijo RAPD.
ZAKLJUČKI: Ugotavljanje RAPD z uporabo špranjske svetilke je zanesljiv in preprost način pregleda tega pomembnega znaka, ki skrajša čas preiskave in poveča njeno natančnost.

PURPOSE: To assess relative afferent papillary defect (RAPD) using slit lamp. Assessment of RAPD using hand lamp or direct ophthalmoscope is often difficult especially if the patient has small pupils or dark iris.
METHODS: We used slit lamp of Haag-Streit type in which we set the width of the slit to 1 mm (mark 10) whilst we regulated the height of the slit according to vertical diameter of the pupil of the affected eye. Than the same slit was used to illuminate the non-affected eye and we measured the difference in slit length if the non-affected pupil constricted.
RESULTS: If the RAPD was present, it was clearly visible under the slit lamp magnification and could be accurately measured. In none of the cases was this method less accurate in comparison with hand lamp or direct ophthalmoscope, even if accommodation component was not completely excluded. Slit lamp enabled more accurate quantification of RAPD.
CONCLUSIONS: Assessment of RAPD using slit lamp is a reliable and simple method of testing of this important clinical sign. It reduces the time of examination and increases its accuracy.

ANIZOKORIJA OB PIGMENTNEM DISPERZIJSKEM SINDROMU – PRIKAZ PRIMERA
ANISOCORIA IN PIGMENT DISPERSION SYNDROME – A CASE REPORT

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NAMEN: Anizokorija je lahko fiziološka ali pa jo povzročajo okvare simpatičnega oz. parasimpatičnega oživčenja, patologija šarenice ali učinki zdravil. Etiologijo nam pomagata razjasniti natančen klinični pregled in farmakološko testiranje.
METODE: Prikaz kliničnega primera, pri katerem smo ugotovili anizokorijo v sklopu pigmentnega disperzijskega sindroma (PDS).
REZULTATI: 54-letni gospod brez pridruženih bolezni je bil obravnavan zaradi naključno ugotovljene anizokorije. Bil je brez očesnih težav, nizko miop. Anizokorija je bila izrazitejša v mezopičnih pogojih, zenici sta dobro reagirali na osvetlitev in ob konvergenci. Kliničnih znakov za Hornerjev sindrom ni imel. Prisotna je bila obojestranska disperzija pigmenta po endotelu z nežnimi režastimi presvetlitvenimi defekti šarenice. Prizadetost je bila nekoliko asimetrična in izrazitejša na strani širše zenice. Zakotje je bilo široko odprto in močno pigmentirano. Očesni tlak je bil normalen, papili brez znakov glavkomske optične nevropatije. Statična perimetrija ni pokazala odstopanj od normale. Pri gospodu je šlo za značilno sliko PDS z asimetrično prizadetostjo in z njo povezano anizokorijo.
ZAKLJUČEK: PDS je navadno obojestranski, a se pri nekaterih bolnikih izraža asimetrično. Pri teh lahko opazimo anizokorijo s širšo zenico na strani, kjer je več presvetlitvenih defektov šarenice.

PURPOSE: The differential diagnosis of anisocoria includes physiological anisocoria, sympathetic or parasympathetic chain pathology, iris pathology, and pharmacological anisocoria. A thorough clinical examination and pharmacological testing are essential for the elucidation of its cause.
METHODS: Here we present a case of anisocoria in a patient with pigment dispersion syndrome (PDS).
RESULTS: An otherwise healthy 54-year-old man presented with an incidental finding of anisocoria. Ophthalmic history was unremarkable, he was a low myope. Anisocoria was more pronounced in dim light. The pupils were briskly reactive to light and accommodation. He had no clinical signs of Horner syndrome. There was bilateral pigment dispersion on the corneal endothelium as well as subtle slit-like iris transillumination defects. The presentation was asymmetric and more pronounced on the side of the wider pupil. On gonioscopy, a widely open, heavily pigmented angle was noted. Intraocular pressure was normal, there were no glaucomatous optic disc changes. Static perimetry showed no abnormalities. The patient presented with a typical clinical picture of PDS. There was, however, anisocoria related to asymmetry of pigment dispersion.
CONCLUSIONS: PDS is usually bilateral, but the clinical findings might be asymmetric in a subset of patients. In those, a larger pupil in the eye with greater iris transillumination might be noted.

SATELITSKI SIMPOZIJ S PRIGRIZKOM

SATELLITE SYMPOSIUM WITH SNACKS

Sponzorira / Sponsored by EWO PHARMA / SANTHERA

PATOGENEZA IN KLINIČNE ZNAČILNOSTI LEBERJEVE HEREDITARNE OPTIČNE NEVROPATIJE

PATHOGENESIS AND CLINICAL CHARACTERISTICS OF LEBER HEREDITARY OPTIC NEUROPATHY

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ZDRAVLJENJE LEBERJEVE HEREDITARNE OPTIČNE NEVROPATIJE – NOVI TRENDI

LATEST TRENDS IN THE MANAGEMENT OF LEBER HEREDITARY OPTIC NEUROPATHY

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KATARAKTA IN REFRAKTIVNA KIRURGIJA

CATARACT AND REFRACTIVE SURGERY

Moderatorja / Moderators: DUŠICA PAHOR, MARJAN IRMAN

Na povabilo Združenja oftalmologov Slovenije / Invited by Slovenian Society of Ophthalmology

SMISELNA RABA ROŽENIČNIH OBROČKOV PRI KERATOKONUSU

MAKING SENSE OF INTRACORNEAL RING SEGMENTS IN KERATOCONUS

Rafael Barraquer
Barraquer Ophthalmology Center, Barcelona, Spain

NOVE VRSTE MULTIFOKALNIH INTRAOKULARNIH LEČ IN LEČ S PODALJŠANIM GORIŠČEM – NAŠE IZKUŠNJE
OUR EXPERIENCE WITH NEW TYPES OF MULTIFOCAL INTRAOCULAR LENSES AND EXTENDED DEPTH-OF-FOCUS LENSES

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NAMEN: Prikazati rezultate implantacij najnovejših vrst multifokalnih intraokularnih leč in leč s podaljšanim goriščem.
METODE: Prikazani so klinični rezultati po vgraditvi IOL teh vrst: Abbott Medical Optics Symfony in Symfony Toric, VSY Biotechnologies Acriva Tri ED ter SiFi Meditech Mini Well in Alcon Panoptix. Spremljali smo vidno ostrino, razpon vida, kontrastno senzitivnost (Adult Near Contrast Test, Richmond Products Inc.) ter hitrost branja s testom IReST v močni in šibki osvetlitvi. Ocenili smo tudi subjektivno zadovoljstvo. Rezultate smo primerjali z monofokalnimi IOL.
REZULTATI: Rezultati z vsemi tremi vrstami IOL so bili odlični. Ostrina vida na daljavo in bližino ter intermediarne razdalje je bila v razponu 0,8–1,2 s.c. ter razpon vida J1–2, s tabelami J4 je bil med 25 in 115 cm, hitrost branja in kontrastna senzitivnost je bila primerljiva tisti z monofokalnimi lečami. Med posameznimi tipi IOL ni bilo večjih razlik, le pri lečah Mini Well je bilo opazno manj krogov okrog luči.
ZAKLJUČKI: Nove vrste multifokalnih IOL s podaljšanim goriščem omogočajo dober vid na vse razdalje brez bistvene izgube kontrastne senzitivnosti ali bistvenim upadom bralne sposobnosti v temnejšem okolju. Svetlobnih fenomenov je bilo malo in so se sčasoma še manjšali, vendar morajo biti izračuni in vsi predoperativni izvidi optimalni.

PURPOSE: To present results of implantations of the newest models of multifocal intraocular lenses with extended focus.
METHODS: Clinical results were shown after implantation of IOLs of the following types: Abbott Medical Optics Symfony and Symfony Toric, VSY Biotechnologies Acriva Tri ED and SiFi Meditech Mini Well and Alcon Panoptix. Visual acuity on near and distance, distance range, near contrast sensitivity (Adult Near Contrast Test, Richmond Products Inc.) and reading speed with IReST test in bright and dim light. Subjective satisfaction was also measured.
RESULTS: With all three lenses, results were excellent. Distance, near and intermediate visual acuity was within the range of 0.8-1.2 s.c. and J1-2, intermediate range with J4 letters was between 25–115 cm. Reading speed was comparable to that with monofocal lenses with near correction. There were no major differences among the IOL types, with slight differences in reading distance and less halos with Mini Well IOLs, provided that the postoperative refraction is optimal. Subjective satisfaction was very high.
CONCLUSIONS: New types of multifocal and toric intraocular lenses with extended focus provide excellent vision on all distances without major loss of contrast sensitivity and near vision in dim light. Adverse light phenomena were not disturbing and were diminishing with time. It is important that all the examinations and measurements were optimal.

Na povabilo družbe / Invited by Bausch & Lomb

SPREDNJA LAMELARNA KERATOPLASTIKA S POMOČJO FEMTOSEKUNDNEGA LASERJA
FEMTOSECOND LASER-ASSISTED ANTERIOR LAMELLAR KERATOPLASTY

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Femtosecond lasers are high precision tools offering a new level of precision and flexibility in corneal surgery including keratoplasty. However, some difficulties have been encountered regarding deep lamellar dissection. This presentation will discuss the current applications, strategies, experience and possible advantages of femtosecond lasers in both superficial and deep anterior lamellar keratoplasty.

IMPLANTACIJA INTRAOKULARNIH LEČ V OČI BREZ LEČNE OVOJNICE
IOL IMPLANTATION IN EYES WITHOUT ZONULAR SUPPORT

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PURPOSE: To present different surgical methods of IOL implantation in eyes without zonular support.
METHODS: Techniques like sutureless scleral fixation, iris Artisan IOL fixation and scleral suturing are compared.
RESULTS: All techniques seem to be safe and predictive. Artisan IOL requires 5.5 mm incision and can induce astigmatism, also inflammation can be a problem. Scleral suturing is challenging, sutures can degrade, IOL can be tilted at the end of procedure, sometimes haptic can be found out of the sulcus, retinal detachment can occur. The scleral tunnel fixation is difficult to manage, there is minimal intraocular scleral contact, long-term results are excellent.
CONCLUSIONS: The sutureless scleral tunnel fixation seems to be the technique of choice in eyes with no zonular support.

IMPLANTACIJA DODATNE INTRAOKULARNE LEČE
ADD-ON INTRAOCULAR LENS IMPLANTATION

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PURPOSE: In case of refractive error Add-On IOL (intraocular lens) can restore optimal visual acuity ore even help restore reading vision in patients with maculopathy.
METHODS: Surgical techniques of Add-On IOL implantation, patient selection and preoperative evaluation are discussed. The properties of Add-On IOL like rotational stability, design and optics of the implants are shown. The rationale behind reading ability restoration is highlighted.
RESULTS: Using Add-On IOLs the spherical, cylindrical and presbyopic error can be cured. In case of maculopathy like AMD, the reading ability of patients with visual acuity from 0.1 to 0.3 can be restored.
CONCLUSIONS: Add-On IOLs are better alternative in correcting refractive error after cataract surgery than IOL exchange ore laser surgery. Even patients with maculopathy can restore reading vision.

SCHARIOTH MACULA LENS – NOVO UPANJE ZA PACIETE Z BOLEZNIJO MAKULE
SCHARIOTH MACULA LENS – A NEW HOPE FOR PATIENTS WITH MACULAR DISEASES

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NAMEN: V naši vsakodnevni praksi se srečujemo s vse več pacienti z napredovalo boleznijo makule, nastalo zaradi različnih vzrokov. Kar dve tretjini teh pacientov je psevdofakih. Pri napredovali okvari makule je branje otežkočeno ali pa pacienti za branje potrebujejo različne pripomočke za povečanje slike. S pomocjo SML (*Sharioth Macular Lens*) lahko omogočimo pacientom, da lahko ponovno berejo brez pripomočkov.
METODE: SML je leča Add-On, ki se vstavi v sulkus psevdofakega očesa. Primerna je za implantacijo pri pacientu, ki z boljšim psevdofakim očesom vidi od 0,1 do 0,3. Implantira se vedno samo v eno, boljše oko.
REZULTATI: Po implantaciji SML in s pravilno izbiro pacienta ne glede na vzrok okvare makule je vid zadovoljiv za branje brez pripomočkov.
ZAKLJUČKI: Za doseganje dovolj dobrega vida za branje je povečanje slike s pomočjo SML dovolj veliko pri pacientih, katerih vidna ostrina je od 0,1 do 0,3 pred implantacijo te dodatne leče v oko.

PURPOSE: In our practice we see every day a lot of patients with advanced maculopathy. About two third of these patient are already pseudophakic. In the advanced macular disease, patients have reduced reading vision and they need to use a variety of devices to enhance the image. The SML (Sharioth Macular Lens) can enable patients to read without aids
METHODS: SML is an Add-On IOL (intraocular lens). This IOL is implanted into the sulcus of the pseudophakic eye. SML enables patients with preoperative visual acuity between 0.1 and 0.3 to reach reading vision. It is implanted in one, the beater seeing eye, only.
RESULTS: With the proper choice of the patients, irrespective of the cause of macular failure, reading vision after the implantation of SML is satisfactory.
CONCLUSIONS: SML helps patients with maculopathy and preoperative visual acuity between 0.1 and 0.3 to reach the reading vision.

20.000 OPERACIJ KATARAKTE BREZ ENDOFTALMITISA
20.000 CATARACT SURGERIES WITHOUTH ENDOPHTHALMITIS

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NAMEN: Diskusija o možnih pozitivnih dejavnikih za preprečevanje endoftalmitisa pri operaciji katarakte.
METODE: Retrospektivna analiza.
REZULTATI: Po naših izkušnjah so pomembni dejavniki za preprečevanje endoftalmitisa pri operaciji katarakte: dobra operativna tehnika, limbalna incizija (Siedel test, fibrinsko lepilo), delo brez sterilne instumentarke, antibiotična intrakameralna zaščita.
ZAKLJUČEK: 20 000 operacij brez endoftalmitisa.

PURPOSE: Discussion about possible positive factors for endophthalmitis prevention in cataract surgery.
METHODS: Retrospective analysis.
RESULTS: The important factors for endophthalmitis prevention in cataract surgery are: good operative technique, limbar incision (Siedel test, fibrin glue), no scrubbed nurse, intracameral antibiotics.
CONCLUSIONS: 20 000 surgeries withouth endophthalmitis.

FEMTOSEKUNDNI LASER ALI MIKROKERATOM – KAJ IZBRATI PRI OPERACIJI *LASIK*

FEMTOSECOND LASER OR MIKROKERATOM – WHAT TO CHOOSE IN *LASIK* SURGERY

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NAMEN: *LASIK* (***laser in situ keratomileusis***) je tehnika refraktivne laserske korekcije dioptrije, ki je trenutno ena najbolj uporabljenih metod pri korekcii dioptrije z laserjem ***excimer***. Najnovejša metoda za pripravo režnja pred delovanjem laserja ***excimer***, je s femtosekundnim laserjem.
METODE: Za *LASIK* je zelo pomembna pravilna izbira pacienta glede na stopnjo dioptrije in astigmatizma ter debelino roženice. Pri izbiri sta pomembni topografija roženice in videz zadnje površine roženice na preiskavi ***Pentacam***. Poleg tega so za uspešnost operacije *LASIK* pomembne vrednosti keratometrije in vrednosti premera roženice (WTW – ***white to white***). Ne nazadnje pa je pri odločitvi za operacijo odločilna tudi anatomija okolnih zunanjih očesnih delov, ki so pomembni za dostopnost bodisi mikrokeratoma ali femtosekundnega laserja.
REZULTATI: V prispevku bom prikazala, v katerih primerih lahko uporabimo tehniko ***femto LASIK*** s femtosekundnim laserjem, kjer na primer tehnika *LASIK* z mikrokeratomom sploh ni izvedljiva ali pa je zanesljivo povezana z možnim zapletom med operacijo, četudi je kirurg izkušen.
ZAKLJUČEK: ***Femto LASIK***, laserska refraktivna operacija s femtosekundnim laserjem, je trenutno najbolj dovršena in uspešna operacija za odstranitev dioptrije tudi v primerih, ko operacija *LASIK* z mikrokeratomom ni možna.

PURPOSE: LASIK (***laser in situ keratomileusis***) is the far most preferred technique in laser refractive surgery with ***excimer*** laser. We use femtosecond laser technology for the creation of the flap.
METHODS: When we decide for LASIK surgery we have to choose the right patient in terms of the parameters measured at the time of preoperative examinations: the amount of refraction with or without astigmatism and corneal thickness. Besides this, corneal topography and corneal back surface scanned with the ***Pentacam*** device are very important. For successful surgery we have to have the right value of the keratometric numbers and the right diameter of the cornea (WTW – white to white). Last but not the least in the decision for LASIK surgery with microkeratom or femtosecond laser in creation of the flap, is the anatomy of the orbit and the eyelids (deep set eyes).
RESULTS: In the presentation I will present in which patients we can use femtosecond *LASIK* refractive surgery, where *LASIK* surgery with the microkeratom is not possible or associated potential complications even in the hands of very experienced refractive surgeons.
CONCLUSIONS: Femto *LASIK* with femtosecond laser technology is far the most sophisticated and successful laser refractive surgery method even in patients where *LASIK* surgery with microkeratom is not possible or could be associated with flap related complications during the surgery.

PRITRDITEV SPREDNJIH LEČNIH EPITELIJSKIH CELIC ZA BAZALNO LAMINO

ANTERIOR LENS EPITHELIAL CELLS ATTACHMENT TO THE BASAL LAMINA

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NAMEN: Študirati strukturo sprednjih lečnih epitelijskih celic (aLECs) in kontakte aLECs z bazalno lamino (BL), da bi razumeli njihovo vlogo v funkciji lečnega epitelija.
METODE: aLCs (BL in pripadajoči aLECs) so bile pridobljene pri rutinskih operacijah katarakt, pripravljene za in preučevane z vrstično elektronsko mikroskopijo (SEM), transmisijsko elektronsko mikroskopijo (TEM) in konfokalno mikroskopijo.
REZULTATI: SEM pokaže, da je bazalna površina aLECs (~10–15 µm) z aLECs gubami (~1–3 µm) in razširitvami (~0,5–3 µm), pritrjena na BL. Slike konfokalnega mikroskopa bazalnih odsekov aLECs po barvanju membran tudi kažejo, da je bazalni del aLECs naguban (~1–3 µm). TEM kaže v bazalnih delih aLECs proti BL, strukture, ki so videti kot preplet (~1–4 µm). V primerih, kjer obstaja otekanje citoplazme in odmik aLECs od BL, posamezne razširitve (~0,5–2 µm), ki segajo do BL, so vidne s TEM.
ZAKLJUČEK: Nudimo podrobne dokaze o strukturni organizaciji aLECs, zlasti glede njihove bazalne strani, ki je v stiku z BL. To je podprto z komplementarno uporabo treh tehnik, SEM, TEM in konfokalne mikroskopije, vsaka od njih prikazuje enake morfološke značilnosti, razširitve in prepletenost citoplazemskih membran aLECs na meji z BL. Bazalni površina aLECs se poveča. To predlaga funkcionalni pomen stika med aLECs in BL.

PURPOSE: To study the structure of the anterior lens epithelial cells (aLECs) and the contacts of the aLECs with the basal lamina (BL) in order to understand their role in the lens epithelium's function.
METHODS: The aLCs (BL and associated aLECs) were obtained from routine uneventful cataract surgery, prepared for and studied by scanning electronmicroscopy (SEM), transmission electron microscopy (TEM) and confocal microscopy.
RESULTS: SEM shows that the basal surface of the aLECs (~10–15 µm) is with aLECs foldings (~1–3 µm) and extensions (~0.5–3 µm) attached to the BL. Confocal microscopy images of the basal sections of the aLECs after membrane staining also suggest that the basal part of aLECs has foldings (~1–3 µm). TEM shows in the aLECs basal parts, towards BL, the structures that look like entanglement (~1–4 µm). In cases where there is a swelling of the cytoplasm and offset of the aLECs from the BL, individual extensions (~0.5–2 µm) that extend to the BL are visible by TEM.
CONCLUSIONS: We provide detail evidence about the structural organization of the aLECs, in particular about their basal side which is in contact with the BL. This is supported by the complementary use of three techniques, SEM, TEM and confocal microscopy, each of them showing the same morphological features, the extensions and the entanglements of the aLECs cytoplasmic membrane at the border with the BL. The basal surface of the aLECs is increased. It suggests the functional importance of the contact between aLECs and BL.

OPERACIJA KOMPLICIRANE SIVE MRENE PRI OTROCIH Z JUVENILNIM IDIOPATSKIM ATRTITISOM – PRIKAZ PRIMEROV

COMPLICATED CATARACT OPERATION IN CHILDREN WITH JUVENILE IDIOPHATIC ARTHRITIS – CASE SERIES

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NAMEN: Prikazati primere otrok z juvenilnim idiopatskim artirisom (JIA), pri katerih je bila potrebna odstranitev sive mrene. Razvoj sive mrene je pogosta posledica kroničnega uveitisa pri otrocih z JIA, pojavlja se v 10–30 %. Siva mrena v sklopu JIA nastane zaradi znotrajočesnega vnetja pa tudi zaradi uporabe sistemskih in topičnih kortikosteroidov. Med operacijo sive mrene lahko pride do dodatnega vzplamtenja vnetja, zato je za preprečevanje pooperativnih zapletov in dober uspeh operacije potreben skrben predoperativni in pooperativni nadzor vnetja.
METODE: Retrospektiven pregled dokumentacije otrok z JIA, ki so bili zaradi sive mrene operirani na Očesni kliniki v Ljubljani v zadnjih pet letih.
REZULTATI: Operirali smo 6 otrok (9 oči). Povprečni čas sledenja bolnikov pooperativno je bil 24 mesecev (4–52 mesecev). Vsi operirani otroci so poleg osnovnega zdravljenja z metotreksatom in/ali adalimumabom perioperativno dodatno prejemali tudi sistemski kortikosteroid. Topično so po operaciji prejemali steroid v visokih odmerkih. Pri vseh 9 očeh je bila vstavljena akrilna intraokularna leča v kapsulo, pri treh očeh je bila med operacijo napravljena primarna zadajšna kapsuloreksa z anteriorno vitrektomijo. Že pred operacijo sive mrene je imelo 5/9 oči visok znotrajočesni tlak, pri 3 očeh je bila pooperativno potrebna glavkomska operacija z vstavitvijo valvule. Cistoidni makularni edem se je pojavil pri 2 očeh, po intravitrealni injekciji triamcinolona je izzvenel. Povprečna izboljšava vidne ostrine je bila iz < 0,05 na 0,75.
ZAKLJUČEK: Operacija sive mrene pri otrocih z JIA je zapletena in ima lahko številne pooperativne zaplete. Za zmanjšanje števila zapletov in dober pooperativni izid je potrebno natančno perioperativno spremljanje in ustrezna uravnava protivnetne terapije.

PURPOSE: To present cases of children with juvenile rheumatoid arthritis (JIA) who had undergone cataract extraction. Cataract formation is a common complication of uveitis that is associated with juvenile idiopathic arthritis (JIA), affecting 20–30% of patients. It can be attributed both to chronic inflammation and to corticosteroid use. In these children, cataract surgery is challenging. Appropriate preoperative and postoperative immunosuppression is mandatory for good postoperative outcome.
METHODS: Retrospective non-comparative case series.
RESULTS: In the last 5 years we operated 6 children (9 eyes). Mean postoperative follow-up was 24 months (4–54 months). JIA was treated with methotrexate and/or adalimumab in all children. In addition, perioperative systemic and postoperative topical corticosteroid was used. In all eyes posterior chamber intraocular lens was implanted. In three eyes primary posterior capsulorhexis with anterior vitrectomy was performed. In 5/9 eyes, ocular hypertension was found before cataract operation, among those glaucoma valve operation was performed in 3 eyes, postoperatively. Cystic macular edema occurred in 2 eyes after cataract surgery and was treated with intravitreal triamcinolone acetonide. Mean best corrected visual acuity improved from < 0.05 to 0.75.
CONCLUSIONS: Cataract extraction in children with JIA can be complicate and is difficult for postoperative management. For better visual outcome meticulous control of inflammation is necessary.

VSTAVLJANJE MULTIFOKALNIH INTRAOKULARNIH LEČ ZA DOSEGANJE BLIŽINSKEGA MINIMONOVIDA
NEAR MINIMONOVISION WITH MULTIFOCAL INTRAOCULAR LENS IMPLANTATION

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NAMEN: Analizirati spremembe v vidni ostrini in refraktivni napaki ter pojav neželenih stranskih učinkov pri pacientih, pri katerih smo po odstranitvi očesne leče kombinirali vstavitev multifokalne intraokularne leče (IOL) ***Restor SN6AD1*** (add +3) in ***SV25TO*** (add +2,5).
METODE: V tej retrospektivni raziskavi smo pregledali podatke 76 oči (38 zaporednih pacientov), pri katerih je bila po odstranitvi očesne leče (zaradi sive mrene ali zdravljenja refraktivne napake) vstavljena multifokalna IOL ***Restor SN6AD1*** (add +3) v dominantno oko za bližino in ***SV25TO*** (add +2,5) v dominantno oko za daljavo med julijem 2014 in julijem 2015. Zanimalo nas je, kakšen je ostanek refraktivne napake, sprememba v najboljši korigirani vidni ostrini, pogostost zamotnitve zadnje lečne ovojnice, pogostost dodatnega refraktivnega posega ASK (***advanced surface keratectomy***), stopnja odvisnosti od očal in subjektivne težave 6–12 mesecev po operaciji.
REZULTATI: Sferna dioptrija je bila ≤ 0,5 D pri 72 očeh (95 %), cilinder je bil ≤ 0,5 D pri 68 očeh (90 %). Pri 76 očeh (93 %) se najboljša korigirana vidna ostrina ni spremenila ali pa se je izboljšala. Pri 8 % operiranih oči je prišlo do zamotnitve zadnje lečne ovojnice. Pri 2 očeh je bilo potrebno preostanek refraktivne napake popraviti z ASK. Očal ni potrebovalo 36 od 38 (95 %) pacientov. Najpogostejši subjektivni težavi sta bili slabši vid na blizu (3 pacienti) in bleščanje (2 pacienta).
ZAKLJUČEK: Implantacija kombinacije multifokalnih IOL z različnimi adicijami za doseganje bližinskega minimonovida je poseg, ki omogoča dobro vidno ostrino, odlično neodvisnost od refrakcijskih korekcijskih sredstev in veliko mero zadovoljstva pacientov po operaciji.

PURPOSE: To analyse visual outcomes and postoperative side effects of patients who underwent refractive lens exchange (RLE) or cataract surgery with multifocal IOL ***Restor SN6AD1*** (add +3) implantation in near dominant eye and ***SV25TO*** (add +2.5) implantation in far dominant eye.
METHODS: In this retrospective study, data of 76 eyes (thirthy eight consecutive patients) which underwent RLE or cataract surgery from July 2014 to July 2015 were analysed. In all cases multifocal ***Restor SN6AD1*** was implanted in near dominant eye and ***Restor SV25TO*** in far dominant eye. 6–12 months after surgery residual refractive error, changes in best corrected visual acuity (BCVA), clinically significant posterior capsule opacificaton rate, ASK (***Advanced Surface Keratectomy***) rate, spectacle independence and subjective symptoms were evaluated.
RESULTS: Sphere power was ≤ 0.5 D in 72 eyes (95%), cylinder power was ≤ 0.5 D in 68 eyes (90%). No change in BCVA or gained lines were noted in 76 eyes (93%). Rate of clinically significant posterior capsule opacificaton was 8%. Two eyes required ASK for residual refractive error. Spectacle independent became 36 of 38 (95%) patients. The most common subjective problems were insufficient near vision (3 patients) and glare (2 patients).
CONCLUSIONS: Lens exchange with implantation of combination of multifocal intraocular lenses with different adds is a procedure that has some percentage of secondary procedures (Nd:YAG capsulotomy, ASK). It is also a procedure that provides good visual acuities, relatively good spectacle independence as well as high level of patient satisfaction despite some subjective problems.

THE INCIDENCE AND IMPACT OF CYSTOID MACULAR OEDEMA AFTER PHAKOEMULSIFICATION CATARACT SURGERY

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PURPOSE: To investigate the incidence and impact of clinically significant pseudophakic cystoid macular oedema (pCMO) after cataract surgery.
METHODS: Retrospective review of clinical records from patients undergoing cataract surgery over a 6 month period from January to June 2014 at Moorfields Eye Hospital. By our definition of inclusion pCMO was considered to be a primary pathology only, meaning that eyes with worsening of preexisting macular oedema due to other causes (most commonly diabetic retinopathy, retinal vein occlusion, or uveitis) were not considered to have simple pCMO, but were considered to be a worsening of original pathology. Incidence, OCT image parameters, treatment protocols and visual outcomes were recorded and analyzed.
RESULTS: 8773 eyes underwent cataract surgery in the observed period. Of these, 463 eyes had simultaneous complex eye surgery and were excluded from further analysis. Of the remaining 8309 eyes, 76 eyes (0.91%) have developed simple pCMO as defined by our diagnostic criteria. Most eyes (92%) have not received prophylactic topical NSAID drops in the postoperative period. On average, the diagnosis of pCMO was made 5.8 (SD 4.48) weeks after the surgery and the average maximal retinal thickness at diagnosis was 436 (SD 122) microns. After a standard course of dexamethasone and topical NSAID, 75 eyes (98%) responded with complete resolution of pCMO and the average duration to resolution was 7.88 (SD3.34) weeks. Only one eye (2%) failed to respond to topical treatment and required more invasive interventions. The average visual acuity of eyes with pCMO was 0.57 (SD 0.58) logMAR preoperatively, then 0.41 (SD 0.24) logMAR during active pCMO, and finally 0.14 (SD 0.16) logMAR after complete resolution of pCMO.
CONCLUSIONS: The incidence of pCMO after simple modern phakoemulsification cataract surgery is low, and 98% of eyes that do develop pCMO respond to a course of topical treatment alone with excellent final visual
RESULTS: Prophylactic NSAID drops might be unnecessary in uncomplicated cataract surgery for eyes with no additional pathology.

ALI OKSIDATIVNI STRES OPERACIJE KATARAKTE POVZROČI SPREMEMBE V MAKULI PRI SLADKORNIH BOLNIKIH BREZ DIABETIČNE RETINOPATIJE V PRIMERJAVI Z ZDRAVIMI POSAMEZNIKI

DOES OXIDATIVE STRESS OF CATARACT SURGERY CAUSE MACULAR CHANGES IN DIABETIC PATIENTS WITHOUT DIABETIC RETINOPATHY AS COMPARED TO HEALTHY PATIENTS

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CILJI: Operacija katarakte povzroči tvorbo prostih radikalov in spremembo sestave prekatne vodke za daljši čas; so bolniki s sladkorno boleznijo (SB) brez diabetične retinopatije (DR) v primerjavi z zdravimi posamezniki pri tem bolj ogroženi za postoperativne spremembe v makuli.
METODE: Prospektivna primerjalna raziskava bolnikov predvidenih za operacijo katarakte s SB brez DR, 12 bolnikov (18 oči) v primerjavi z zdravimi posamezniki, 5 bolnikov (12 oči). Bolnike smo pregledali predoperativno in 1 teden, 1 mesec, 3 mesece pooperativno. Ob pregledih po operaciji smo opravili funkcionalne in morfološke preiskave makule: ETDRS vidno ostrino, mikroperimetrijo in kontrastno občutljivosti ter OCT makule. Zanimale so nas razlike znotraj skupine in med skupinama, Studentov T-test smo uporabili za analizo podatkov.
REZULTATI: Vidna ostrina se je po operaciji katarakte po pričakovanjih pri vseh vključenih bolnikih v obeh skupinah izboljšala (p = 0,02). Debelina ali prostornina makule, merjena v fovei in na četrtine razdeljenih dveh perifoveolarnih obročih se nista spremenili v nobeni od skupin. Kontrastna občutljivost pri 12 cps je bila ob zadnjem kontrolnem pregledu za bolnike s SB brez DR statistično neznačilno nakazano slabša (p = 0,06), kar pa se ni odražalo v stukturnih spremembah makule. Rezultati mikroperimetrije so nasprotno pri večini bolnikov s SB pokazali zmerno izboljšanje povprečne občutljivost (srednja vrednost 6,04) ob zadnjem kontrolnem pregledu.
ZAKLJUČKI: Primerjalna raziskava je pokazala, da oksidativni stres operacije katarakte s fakoemulzifikacijo, kot jo izvajamo na očesni kliniki, bolnikov s SB brez DR za spremembe v makuli ne ogroža bolj kot zdravih posameznikov. Ugotovili smo pomembno izboljšanje vidne ostrine, ne vpliva pa operacija katarakte na debelino ali prostornino fovee in perifoveolarnih regij. Kontrastna občutljivost je po operaciji stabilna, povprečna občutljivost na mikroperimetriji pa v treh mesecih po operaciji večinoma blago poraste.

AIM: Cataract surgery produces free radicals and changes the composition of aqueous humour for longer period of time; does it put the patients with diabetes (DM) without diabetic retinopathy (DR) on higher risk for macular changes after surgery as compared to healthy individuals.
METHODS: Prospective comparative study of patients scheduled for cataract surgery with DM without DR, 12 patients (18 eyes), compared to healthy individuals, 5 patients (10 eyes). The patients were examined preoperatively and 1 week, 1 month, 3 months postoperatively. On postoperative exams the functional and morphological studies of macula were done: ETDRS visual acuity, microperimetry, contrast sensitivity, OCT of macula. We were interested in changes within and between the two groups, Student's T-test was done for the analysis.
RESULTS: All patients in both groups experienced improvement of visual acuity as expected (p = 0.02). The thickness and volume of macula in foveal and two perifoveal regions did not change at any follow up. The contrast sensitivity at 12 cps showed minor statistically non-significat drop at the last follow up exam in the DM group (p = 0.06) but without morphological correlation. And also the results of microperimetry proved moderate improvement of mean sensitivity in the DM group at the last follow up (mean 6.04).
CONCLUSIONS: The comparative study showed that oxidative stress of cataract surgery as performed at

our institution does not threaten the patients with DM without DR for changes in macula more than healthy individuals. The visual acuity significantly improved, the macula showed no significant changes, the contrast sensitivity was constant and the microperimetry sensitivity moderately improved.

DIPLOPIJA PO OPERACIJI SIVE MRENE
DIPLOPIA AFTER CATARACT SURGERY

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NAMEN: Ugotoviti vzroke in opisati zdravljenje bolnikov, ki imajo težave z dvojnim vidom po operaciji sive mrene.
METODE: Retrospektivna analiza 15 bolnikov z dvojnim vidom po operaciji sive mrene v letu 2015. Za vsakega pacienta smo analizirali starost, spol, prisotnost sistemskih bolezni, etiologijo, najboljšo korigirano vidno ostrino (BCVA), vertikalno in horizontalno škiljenje, gibljivost zrkel, škilni kot, predpis prizmatske korekcije, binokularni vid in subjektivno stanje.
REZULTATI: Analizirali smo zdravstvene kartoteke 15 odraslih bolnikov, pri katerih se je pojavil dvojni vid po operaciji sive mrene. Vsi so bili operirani v lokalni anesteziji. Od skupno 130 bolnikov z dvojnim vidom, ki so bili pregledani na našem oddelku v letu 2015, je imelo dvojni vid po operaciji sive mrene 11,5% bolnikov. Povprečna starost bolnikov je bila 74,8 let (59–85), od tega je bilo 53 % žensk. Velik delež bolnikov je imel pridružene sistemske bolezni (povišan krvni tlak in sladkorna bolezen). 86,6 % bolnikov je imelo BCVA več kot 10/12 na enem očesu, 46,6 % na obeh očeh. Štirje bolniki so imeli dvojni vid po vertikali, 11 bolnikov po horizontali. Povprečni škilni kot v vertikalnem odklonu je bil 4,2 prizem dioptrije PD (1–6 PD), v horizontalnem 5,4 PD (1–11 PD). Najpogostejša mehanizma sta bila dekompenzacija obstoječega škiljenja ter motnje fuzije. Prizmatska korekcija je bila najbolj pogosta oblika predpisanega zdravljenja (80 %), v 20 % je bila dovolj samo temeljita refrakcija. Binokularni vid je bil po ustrezni korekciji dosežen v 80 %. Subjektivno stanje je bilo zadovoljivo v 85 % (stabilna enojna slika).
ZAKLJUČEK: Pri rednem očesnem pregledu je potrebno preveriti, ali je poleg slabega vida zaradi sive mrene prisotna predoperativna tropija, forija ali dvojni vid, saj ti dejavniki močno vplivajo na dober pooperativni rezultat. Prizmatska korekcija je zelo učinkovit način zdravljenja tega problematičnega zapleta, omogoča stabilno enojno sliko in normalno funkcioniranje posameznika.

PURPOSE: To study mechanisms and management of patients who complained of diplopia after cataract surgery.
METHODS: A retrospective case analysis of 15 patients presenting with diplopia after cataract surgery in 2015. For each patient we analyzed age, gender, aetiology, best corrected visual acuity (BCVA), presence of vertical and horizontal deviation, motility, angle of deviation, binocular vision and subjective status.
RESULTS: Medical records of 15 adult patients undergoing cataract surgery were studied. They were all operated under local anaesthesia. From a total of 130 patients with diplopia presenting to the orthoptic department in 2015, 11.5% of patients had diplopia after cataract surgery. Mean patient age was 74.8 years (59–85), 53% were women. A high proportion of patients had hypertension and diabetes mellitus. Most patients (86.6%) had BCVA more than 10/12 in one eye, 46.6% in both eyes. There were 4 with vertical diplopia and 11 with horizontal diplopia. The mean angle of vertical deviation in primary gaze was 4.2 prism diopters PD (range 1–6 PD) and the mean angle of horizontal deviation in primary gaze was 5.4 PD (range 1–11 PD). Decompensation of preexisting strabismus and central fusion disruption were commonest reasons for diplopia. Prisms were the commonest form of treatment prescribed (80%), in 20% only refraction was enough. Binocular vision was present in 80% after treatment. Subjective state was satisfactory in 85% (stable single vision).
CONCLUSIONS: In addition to routine ocular examination, orthoptic evaluation for tropias, phorias and diplopia can be helpful in planning for cataract surgery as these factors can affect postoperative outcomes. Prisms are very effective way of treating this troublesome complication, enables stable single vision and normal functioning of every individual.

TRANSEPITELIJSKA FOTOREFRAKTIVNA KERATEKTOMIJA
TRANSEPITHELIAL PHOTOREFRACTIVE KERATECTOMY

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NAMEN: Analizirati vidno funkcijo ter subjektivne težave po operaciji pri pacientih, pri katerih je bila opravljena transepitelijska fotorefraktivna keratektomija (T-PRK) z laserjem ***excimer WaveLight 500***.
METODE: Retrospektivno smo ocenili ostanek refraktivne napake in spremembe v najboljši korigirani vidni ostrini 1 in 6 mesecev po operaciji pri pacientih, ki so imeli opravljeno T-PRK med januarjem in oktobrom 2015. Spremljali smo subjektivne težave po njej.
REZULTATI: Analizirali smo podatke 291 oči (150 pacientov). Najboljša korigirana vidna ostrina je bila znotraj 1 D (dioptrije) pri 91 % po enem mesecu in pri 95 % po 6 mesecih. Vidna ostrina je ostala enaka ali boljša kot pred refraktivnim posegom pri 92 % pacientih po 1 mesecu in 97 % po 6 mesecih. Najpogostejša subjektivna težava po operaciji je bila bleščanje (4 pacienti).
ZAKLJUČEK: Transepitelijska fotorefraktivna keratektomija je varna metoda in omogoča dobro vidno funkcijo, pri nekaterih pacientih traja popolna vidna rehabilitacija dalj časa.

PURPOSE: To analyse visual outcomes and post-operative side effects in patients who underwent transepithelial photorefractive keratectomy (T-PRK) using ***WaveLight 500 excimer*** laser.
METHODS: In this retrospective study in patients who underwent T-PRK between January and October 2015 residual refractive error and changes in best corrected spectacle visual acuity (BCSVA) were evaluated 1 and 6 months after surgery. Post-operative side effects were also recorded.
RESULTS: Data of 291 eyes (150 consecutive patients) were analysed. Post-operative sphere power was ≤ 1.0 D in 91% after 1 month, and in 95% after 6 months. BCSVA remained the same or improved in 92% after 1 month and in 97% after 6 months. Most frequent postoperative subjective complaint was glare (4 patients).
CONCLUSIONS: T-PRK is a safe procedure that provides good visual function. Visual rehabilitation takes longer in some patients.

BIFOKALNA IN PROGRESIVNA OČALA PRI OTROCIH
BIFOCAL VERSUS PROGRESSIVE ADDITION LENSES IN CHILDREN

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NAMEN: V pregledni predstavitvi bodo prikazani principi korekcije vida z bifokalnimi in progresivnimi stekli pri afakičnih in psevdofakičnih otrocih ter pri otrocih z bližinsko akomodativno esotropijo z visokim AC/A. Poudarek bo na razlikovanju med predpisano vrsto stekla glede na refrakcijsko hibo. Podana bodo priporočila glede centriranja stekel.
METODE: Prikazani bodo principi fiziološke optike pri korekciji z večžariščnimi stekli, grafično bo prikazan problem anizometropije pri progresivnih steklih; predlagane bodo rešitve. Na primeru iz prakse bo prikazana korekcija vida otroka z enostransko psevdofakijo in akomodativno ezotropijo z bifokalnimi stekli.
ZAKLJUČEK: Korekcija vida afakičnih otrok s progresivnimi stekli je smiselna, če gre za približno izometropno stanje, ter če ni prisotna heterotropija, večja ambliopija ali pomembnejši izpadi vidnega polja. Hkrati je potrebno upoštevati razdaljo ***vertex*** in predpisati steklo s kratkim ali zelo kratkim prehodom. To je še posebno pomembno pri mejnih anizometropijah. V ostalih primerih je bolj kot s progresivnimi stekli smiselna korekcija z bifokalnimi stekli, ki morajo biti pri afakih in psevdofakih centrirana pribl. na spodnji rob šarenice, pri bližinski akomodativni ezotropiji pa na spodnji rob zenice ali višje.

PURPOSE: Aphakic and pseudophakic children, as well as children with near accommodative esotropia with high AC/A values are often corrected with bifocal and progressive addition lenses. In this overview paper, the principles of correction with both types for each particular condition will be explained. Recommendations regarding centring the glasses will be given.
METHODS: Principles of physiological optics in correction with multifocal glasses will be explained, the problem of anisometropia in this type of lenses will be graphically presented and the solutions will be suggested. A case of a child with unilateral pseudophakia and accommodative esotropia, corrected with bifocals, will be presented.
CONCLUSIONS: The use of progressive addition lenses in aphakic and pseudophakic children is a good option if the refractive state is approximately isometropic and if there is no heterotropia or deeper amblyopia. In use of this type of lenses, there should also be no significant Visual field defects present. The lenses with short or very short progressive zone channel should be used due to children typical short vertex distances. This becomes even more critical in borderline anisometropias. In all other conditions, correction with bifocals makes more sense. In aphakic and pseudophakic children they should be centred to the lower iris-margin, in near accommodative esotropia, however, they should be centred to the lower margin of the pupil or higher.

PHACO AND *DSAEK* – TROJNA OPERACIJA
TRIPLE POCEDURE – *PHACO* AND *DSAEK*

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AIM: Combined cataract surgery (PHACO) and lamellar keratoplasty (DSAEK) in one act has some advantages and disadvantages compared to the two separate surgeries. The aim is to discuss when it is better to do the operation in one or two acts.
PATIENTS AND METHODS. The main indication for the combined operation is Fuchs' dystrophy of the cornea that caused partial opacification of the cornea with the simultaneous presence of cataract. The video of combined PHACO and DSAEK surgery will be presented. The benefits of surgery in one procedure are one hospital stay and faster recovery of vision. The disadvantages are difficult PHACO operation due to insufficient transparency of the cornea and possible errors in the calculation of the intraocular lens. The advantage of performing the surgery in two acts (first cataract surgery and then DSAEK) is possibility to avoid the corneal transplantation if the patient is satisfied with the improvement of vision. Disadvantages of operation in two acts are two hospital stays and slower recovery of vision. In both cases, we need to be sure that we can safely perform cataract surgery through insufficiently transparent cornea.
CONCLUSION: Careful planning of surgery with assessing the possibility of safe execution of both operations in a single act has the advantage over two separate procedures. However because of the possibility to avoid or delay corneal transplantation, we believe that in our conditions two separate procedures will be the first choice of majority of surgeons.

ANTERIORNI UVEITIS IN KATARAKTA PRI BOLNICI Z JUVENILNIM IDIOPATSKIM ARTRITISOM: ANALIZA PRIMERA 4-LETNE DEKLICE

ANTERIOR UVEITIS AND CATARACT WITH ASSOCIATED JUVENILE IDIOPATHIC ARTHRITIS: A CASE STUDY OF A 4-YEAR-OLD GIRL

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NAMEN: Juvenilni idiopatski artritis je najpogostejši vzrok uveitisa pri otrocih. V analizi primera želimo predstaviti nenavadenp otek kroničnega iridociklitisa pri 4-letni deklici, kjer je bila očesna simptomatika prva manifestacija sistemske bolezni.
METODE: Retrogradna analiza primera 4-letne deklice, ki je bila v mesecu januarju 2016 hospitalizirana na Oddelku za očesne bolezni v UKC Maribor zaradi anamneze pogostih vnetij oči v zadnjem letu in simptomatike glavobolov ter bolečine v očeh.
REZULTATI: Pri bolnici je bilo ob sprejemu na Očesni oddelek klinično ugotovljen kronični bojestranski iridociklitis z že zrelo katarakto na desnem in začetno katarakto na levem očesu. Deklica je bila pregledana v Pediatrični imunorevmatološki ambulanti, kjer je bil postavljen sum na juvenilni idiopatski artritis oligoartikularne oblike. Indicirano je bilo lokalno in sistemsko protivnetno zdravljenje ter imunomodulatorno zdravljenje z metotreksatom. Bolnica trenutno prejema sistemsko (NSAR) in lokalno (kortikosteroidi) protivnetno terapijo, ob čemer je bolezen trenutno v remisiji. Bolnica je trenutno v teku priprav za uvajanje imunomodulatornega zdravljenja z metotreksatom, nakar je predvidena še operacija katarakte.
ZAKLJUČEK: V prikazanem primeru smo predstavili, kako se je juvenilni idiopatski artritis pokazal z očesno simptomatiko v že napredovali fazi. Ugotavljamo, da sta pravočasna diagnoza in zdravljenje kroničnega uveitisa pri pediatrični populaciji še zmeraj izziv. Bolezen se lahko dolgo kaže z blago klinično sliko in napreduje v hudo ambliopijo ali celo slepoto.

PURPOSE: Juvenile idiopathic arthritis is the most common systemic disease causing uveitis in paediatric patients. In this case study we want to show uncommon course of a chronic iridocyclitis in a 4-year-old girl, where ocular symptoms were first signs of a systemic disease.
METHODS: This is a retrograde case-study of a 4-year-old patient with pain in eyes, headaches and frequent eye infections complaints, hospitalized in UKC Maribor in January 2016.
RESULTS: During the hospitalization of the patient bilateral chronic iridocyclitis with mature cataract on the right eye and an initial cataract on the left eye was found. The patient was examined at the Paediatric Immuno-rheumatology clinic, where juvenile idiopathic arthritis was suspected. An indication for local and systemic anti-inflammatory therapy and immunomodulatory therapy with methotrexate was set. Patient is currently receiving systemic (i.e. NSAR) and local (i.e. corticosteroids) anti-inflammatory therapy, resulting in remission of the disease. The patient is currently being propped for immunomodulatory therapy with methotrexate, after which cataract surgery is planned.
CONCLUSIONS: The presented case shows how an idiopathic juvenile arthritis can present itself with ocular symptoms with already progressed eye inflammation. We conclude that early diagnosis and treatment are still great challenge especially with paediatric patients. Disease can stay masked for a long time and finally progress to severe amblyopia or even blindness.

PREDSTAVITVE Z VIDEOPOSNETKI
VIDEO PRESENTATIONS

FIKSACIJA SUBLUKSIRANE *IOL* S HOFFMANOVIMI ŽEPKI IN VITREKTOMIJO

SUBLUXATED *IOL* FIXATION WITH HOFFMAN POCKETS AND VITRECTOMY

Marko Hawlina, Xhevat Lumi
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

Video prikazuje primer pacienta s subluksiranim kompleksom intraokularne leče (IOL) v kapsuli s tenzijskim obročkom (CTR) po operaciji travmatske katarakte. IOL in CTR-kompleks smo fiksirali z dvema šivoma skozi Hoffmanove žepke, ki se naredijo z intraskleralno lamelacijo. Pri bolniku je bila zaradi prolapsa steklovine v sprednji prekat nato narejena še vitrektomija *pars plana*.

Video shows a case of a patient with subluxated complex of intraocular lens (IOL) in the capsule with capsular tension ring (CTR). IOL and CTR complex were fixated with two sutures through Hoffman pockets that are formed with intrascleral lamellation from the limbus. Due to the prolapsed vitreous in the anterior chamber, *pars plana* vitrectomy was also performed.

JE PRIMARNA *ECCE* V SLOVENIJI ŠE INDICIRANA?
IS PRIMARY *ECCE* STILL INDICATED IN SLOVENIA?

Marko Hawlina, Xhevat Lumi
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

Video prikazuje dva primera, pri katerih je bilo jedro leče tako trdo, da ga ni bilo mogoče odstraniti s fakoemulzifikacijo. Pri obeh primerih pacienta nista šla na operacijo, ker je bilo drugo oko še funkcionalno. Jedro prve pacientke je bilo "trdo kot kamen", medtem, ko je imelo pri drugem bolniku "usnjeno" konsistenco s šibkimi zonulami zaradi predhodne vitrektomije zaradi odstopa mrežnice pred leti. Dodatno je imel drugi pacient tudi sindrom IFIS z ozko zenico, kar je zahtevalo dodatno namestitev iris-retraktorjev, in Mb. Bechterew s hudo kifozo, zaradi česar ni mogel ležati vznak. V obeh primerih smo leči odstranili šele po konverziji v ECCE, ki bi bila verjetno manj travmatizirajoča, če bi jo izvedli primarno. Jedra take konsistence ne bi mogli odstraniti z intravitrealnim pristopom. Zato je učenje ECCE še vedno smiselno, čeprav bi morali področni oftalmologi take bolnike napotiti na operacijo dosti prej.

This video shows two cases in which the lens nucleus was so hard that it could not be removed with phacoemulsification. In both cases, patients did not go to be operated earlier as they had a functioning fellow eye. The nucleus of the first patient nucleus was rock hard whilst it had an leathery consistence with loose zonules in the second eye which had been vitrectomized in the past due to retinal detachment. In addition, this patient had IFIS syndrome which required additional pupil management with iris retractors, and Mb Bechterew with severe kyphosis. Both lenses were removed only after conversion to ECCE which would perhaps be less traumatic if performed primarily. The nuclei of such consistence would not be possible to be removed by intravitreal approach, either. Therefore, teaching of ECCE may still be needed, however, the managing ophthalmologists should refer their patients to surgery much earlier.

TEHNIKA PLAVAJOČEGA ŠIVA UMETNE ŠARENICE
ARTIFICIAL IRIS FLOATING SUTURE TECHNIQUE

Vladimir Pfeifer
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

In patients implanted with artificial iris (AI), chronic inflammation is a common problem. The special suturing technique was developed to fixate AI to the sulcus. This technique can be used in aphakic as well as in pseudophakic eyes also in combination with penetrating keratoplasty. The goal is to fixate AI to the sulcus in the way that it does not touch sulcus or posterior iris surface.

METHODS: Patients with posttraumatic aniridia were implanted with AI alone or in combination with IOL sutured to the AI. Special loop sutures were used. With lasso technique IOL was sutured to the AI and later to the sulcus using the same suture and zigzag suturing technique. Prior to implantation AI was trimmed or trephined to 10.5 mm. Before the end of the surgery the AI or AI IOL complex was centred to the anatomical axis of the globe by adjusting zigzag sutures.

RESULTS: Good centration of the AI to the anatomical axis of the eye was achieved. Photophobia was not a problem any more. Also aphakia could be corrected. Visual acuity (VA) improved markedly, especially in bright light and sunshine. No clinically relevant anterior chamber inflammation was noticed more than two years after surgery. No CME developed. Also in surgeries combined with penetrating keratoplasty VA improved to 0.9 and no CME was present.

CONCLUSIONS: AI implantations in aniridia, ocular trauma, aphakia and in severe iris defects is safe and effective procedure in combination with floating suturing technique. The photophobia disappears, visual acuity is improved and there is a tremendous aesthetic effect. This technique does not cause inflammatory response.

DMEK – PRESADITEV DESCEMETOVE MEMBRANE
DMEK – DESCEMET MEMBRAN ENDOTHELIAL KERATOPLASTY

Vladimir Pfeifer
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

Video is presenting Descemet's membrane and endothelial transplantation in corneal surgery.

DALK – GLOBOKA LAMELARNA KERATOPLASTIKA
DALK – DEEP ANTERIOR LAMELLAR KERATOPLASTY

Vladimir Pfeifer
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

DALK surgery using ***Anwar's Big Bubble*** technique is shown. Step by step the procedure is discussed with the main focus on dissection of Descemet's membrane.

PENETRANTNA TRANSPLANTACIJA ROŽENICE
PENETRATING KERATOPLASTY

Vladimir Pfeifer
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

Penetrating keratoplasty combined with cataract extraction and IOL implantation is shown. Surgical technique utilizing different approaches is discussed.

DSAEK – AVTOMATIZIRANA PRESADITEV DESCEMETOVE MEMBRANE IN ENDOTELIJA ROŽENICE
DSAEK – DESCEMET STRIPING AUTOMATED ENDOTHELIAL KERATOPLASTY

Vladimir Pfeifer
University Medical Centre, Ljubljana, Slovenia

Video is presenting thin stromal, Descemets membrane and endothelial transplantation in corneal surgery.

OPERACIJA KONGENITALNE KATARAKTE PRI OTROCIH
CATARACT SURGERY IN YOUNG CHILDREN AND INFANTS

Vladimir Pfeifer
Očesna klinika, Univerzitetni klinični center Ljubljana, Ljubljana, Slovenija

Surgical technique in congenital cataract removal and IOL implantation are shown.

Avtorsko kazalo
Authors' Index

Horus PHARMA

POMOČ PRI TEŽAVAH Z VEKAMI

Ilast Lingettes - Wipes

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Zdravila se ne sme dajati več kot enkrat na dan, kajti pogostejša uporaba lahko zmanjša učinek na znižanje intraokularnega tlaka. Samo za enkratno uporabo; en vsebnik zadošča za zdravljenje obeh očes. Vso neporabljeno raztopino je treba takoj po uporabi zavreči. *Uporaba pri starejših:* Starejšim bolnikom odmerka ni treba spremeniti. *Pediatrična populacija* Varnost in učinkovitost tafluprosta pri otrocih, mlajših od 18 let, še nista bili dokazani. *Uporaba pri okvari ledvic/jeter* Tafluprost ni bil raziskan pri bolnikih z okvaro ledvic/jeter, zato ga je treba pri teh bolnikih uporabljati previdno. · **Način uporabe** Da bi zmanjšali tveganje za potemnitev kože vek, morajo bolniki odvečno raztopino obrisati s kože. Tako kot pri vseh kapljicah za oko je po uporabi zdravila priporočljiva nazolakrimalna zapora ali nežno zaprtje očesa. To lahko zmanjša sistemsko absorpcijo zdravil za okularno uporabo. V primeru uporabe več kot enega lokalnega očesnega zdravila mora med uporabo vsakega posameznega zdravila miniti vsaj 5 minut. · **Kontraindikacije** Preobčutljivost na zdravilno učinkovino tafluprost ali katero koli pomožno snov. · **Posebna opozorila in previdnostni ukrepi** Pred začetkom zdravljenja je treba bolnike seznaniti z možnostjo rasti trepalnic, potemnitve kože vek in povečanja pigmentacije šarenice. Nekatere od teh sprememb so lahko trajne in lahko povzročijo razliko v izgledu oči, če je zdravljeno le eno oko. Spremenjena pigmentacija šarenice se pojavi počasi in je lahko več mesecev neopazna. Spremenjeno barvo očesa so opazili predvsem pri bolnikih s šarenico mešane barve, npr. modro-rjavo, sivo-rjavo, rumeno-rjavo in zeleno-rjavo. Tveganje za doživljenjsko heterokromijo med očesoma v primeru enostranske uporabe je nedvomno. S tafluprostom ni izkušenj pri neovaskularnem glavkomu, pri glavkomu z zaprtim ali ozkim zakotjem ali pri kongenitalnem glavkomu. S tafluprostom je le malo izkušenj pri bolnikih z afakijo in bolnikih s pigmentnim ali psevdoeksfoliativnim glavkomom. Previdnost je priporočljiva v primeru uporabe tafluprosta pri bolnikih z afakijo, pri bolnikih s psevdofakijo z raztrgano posteriorno lečno kapsulo ali z lečo v sprednjem prekatu in pri bolnikih z znanimi dejavniki tveganja za cistoidni makularni edem ali iritis/uveitis. Izkušenj pri bolnikih s hudo astmo ni, zato je treba te bolnike zdraviti previdno. · **Neželeni učinki** V kliničnih študijah je tafluprost s konzervansom kot monoterapijo ali kot dodatno zdravilo poleg 0,5% timolola dobivalo več kot 1.400 bolnikov. Najpogosteje poročani z zdravljenjem povezani neželeni učinek je bila očesna hiperemija. Pojavila se je pri približno 13% bolnikov, ki so sodelovali v kliničnih študijah tafluprosta s konzervansom v Evropi in ZDA. Večinoma je bila blaga, prekinitev zdravljenja je povzročila pri povprečno 0,4% bolnikov, ki so sodelovali v ključnih študijah. V 3-mesečni študiji III. faze v ZDA, v kateri so primerjali tafluprost v obliki brez konzervansa s timololom v obliki brez konzervansa, se je očesna hiperemija pojavila pri 4,1% (13/320) bolnikov, zdravljenih s tafluprostom. Med kliničnimi preskušanji tafluprosta v Evropi in ZDA so po največ 24-mesečnem spremljanju poročali o naslednjih neželenih učinkih, povezanih z zdravljenjem. V vsaki skupini pogostnosti so neželeni učinki navedeni po padajoči pogostnosti. Bolezni živčevja Pogosti (≥1/100 do <1/10): glavobol; Očesne bolezni Pogosti (≥1/100 do <1/10): srbenje oči, draženje oči, bolečina v očeh, hiperemija veznice/očesa, spremembe trepalnic (podaljšanje, odebelitev in povečanje števila trepalnic), suho oko, občutek tujka v očeh, sprememba barve trepalnic, eritem veke, površinski pikčasti keratitis, fotofobija, močnejše solzenje, zamegljen vid, zmanjšanje ostrine vida in močnejša pigmentacija šarenice; Občasni (≥1/1.000 do <1/100): pigmentacija veke, edem veke, astenopija, edem veznice, izcedek iz očesa, blefaritis, celice v sprednjem očesnem prekatu, nelagodje v očeh, migljanje v sprednjem očesnem prekatu, pigmentacija veznice, vezničnі folikli, alergijski konjunktivitis in nenormalni občutki v očesu. Neznana (ni mogoče oceniti iz razpoložljivih podatkov): iritis/uveitis, poglobljen sulkus očesne veke. Zelo redko so pri nekaterih bolnikih z znatno poškodovano rožnico poročali o primerih kalcifikacije roženice v povezavi z uporabo kapljic za oko, ki vsebujejo fosfate. Bolezni dihal Neznana (ni mogoče oceniti iz razpoložljivih podatkov): poslabšanje astme, dispneja; Bolezni kože in podkožja Občasni (≥1/1.000 do <1/100): hipertrihoza vek · **Imetnik dovoljenja za promet z zdravilom** Merck Sharp & Dohme, inovativna zdravila d. o. o. Šmartinska cesta 140, 1000 Ljubljana, Slovenija · **Številka dovoljenja za promet z zdravilom** H/11/01389/001 (30 vsebnikov) · **Datum pridobitve/podaljšanja dovoljenja za promet z zdravilom** Datum prve odobritve: 23.3.2011 Datum zadnjega podaljšanja: 18.10.2013 · **Datum zadnje revizije besedila** 31.07.2014 · **Način in režim izdaje:** Rp

Pred uvedbo zdravljenja, prosimo preberite Povzetek glavnih značilnosti zdravila, ki je na voljo na www. cbz. si oz Medisu, uradnemu zastopniku.

Literatura: 1. Traverso et al. ARVO 2006, Submitted to Journal of Glaucoma in February 2008 **2.** Jaenen N et al. Eur J Ophthalmol 2007; 17:341-349

IOT = intraokularni tlak

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Yellox ne smejo uporabljati bolniki, pri katerih acetilsalicilna kislina ali druga zdravila, ki zavirajo prostaglandin-sintazo, sprožajo napade astme, urtikarijo ali akutni rinitis. **POSEBNA OPOZORILA IN PREVIDNOSTNI UKREPI** Vsa topična nesteroidna protivnetna zdravila lahko upočasnijo ali zamaknejo celjenje, enako kot topični kortikosteroidi. Sočasna uporaba nesteroidnih protivnetnih zdravil in topičnih steroidov lahko poveča verjetnost za težave pri celjenju. Navzkrižna občutljivost: Obstaja možnost navzkrižne občutljivosti na acetilsalicilno kislino, derivate fenilocetne kisline in druga nesteroidna protivnetna zdravila. Zato se je uporabi zdravil pri osebah, pri katerih se je v preteklosti pojavila občutljivost za ta zdravila, treba izogibati. Dovzetne osebe: Pri dovzetnih bolnikih lahko neprekinjena uporaba topičnih nesteroidnih protivnetnih zdravil, vključno z bromfenakom, povzroči razpad epitelija, tanjšanje roženice, erozijo roženice, ulceracijo roženice ali njeno predrtje. Ti dogodki so lahko nevarni za vid. Bolniki, pri katerih obstajajo dokazi za razpad epitelija roženice, morajo takoj prekiniti uporabo topičnih nesteroidnih protivnetnih zdravil in pri njih je treba skrbno spremljati zdravje roženice. Posledično lahko sočasna uporaba kortikosteroidov in nesteroidnih protivnetnih zdravil pri bolnikih, pri katerih obstaja tveganje, povzroči večje tveganje za neželene učinke na roženici. Izkušnje v obdobju trženja s topičnimi nesteroidnimi protivnetnimi zdravili so pokazale, da pri bolnikih, pri katerih so opravili zapletene kirurške posege na očeh, bolnikih z denervacijo roženice, okvarami epitelija roženice, diabetesom mellitusom in boleznimi površine očesa, npr. sindromom suhega očesa, revmatoidnim artritisom ali večkratnimi kirurškimi posegi na očesu v kratkem času, lahko obstaja tveganje za neželene učinke na roženici, ki lahko postanejo nevarni za vid. Pri teh bolnikih je treba nesteroidna protivnetna zdravila uporabljati previdno. Obstajajo poročila, da oftalmična nesteroidna protivnetna zdravila skupaj s kirurškimi posegi na očesu lahko povzročajo močnejše krvavitve očesnih tkiv (vključno s hifemo). Pri bolnikih z znano dovzetnostjo za krvavitve ali bolnikih, ki jemljejo druga zdravila, ki lahko podaljšajo čas krvavitve, je treba Yellox uporabljati previdno. Po prekinitvi uporabe Yelloxa so v redkih primerih poročali o možnem ponovnem zagonu vnetnega odziva, npr. v obliki makulamega edema, kot posledici operacije katarakte. Okužba očesa: Topična uporaba protivnetnih zdravil lahko prikrije akutno okužbo očesa. Uporaba kontaktnih leč v pooperacijskem obdobju po operaciji katarakte na splošno ni priporočljiva. Bolniki naj med zdravljenjem z Yelloxom ne uporabljajo kontaktnih leč. Pomožne snovi: Pri pogosti ali daljši uporabi Yelloxa je potrebno bolnike skrbno spremljati, ker vsebuje benzalkonijev klorid. Znano je, da benzalkonijev klorid lahko spremeni barvo mehkih kontaktnih leč. Stiku z mehkimi kontaktnimi lečami se je treba izogibati. Obstajajo poročila, da benzalkonijev klorid povzroča draženje očesa, točkasto keratopatijo in/ali toksično ulcerozno keratopatijo. Yellox vsebuje natrijev sulfit, ki lahko povzroči alergijske reakcije, vključno z anafilaktičnimi simptomi ali smrtno nevarnimi ali manj hudimi astmatičnimi napadi pri dovzetnih bolnikih. Potrebno se je izogibati uporabi Yelloxa med tretjim trimesečjem nosečnosti. Pri nosečnicah uporaba zdravila ni priporočljiva, razen kadar koristi odtehtajo morebitno tveganje. Yellox se lahko uporablja med dojenjem. Yellox ima manjši vpliv na sposobnost vožnje in upravljanja s stroji. Po vkapanju se lahko pojavi prehodna zameglitev vida. V takšnih primerih, je treba bolniku svetovati, naj se izogiba vožnji ali uporabi strojev, dokler se vid ne zbistri. **INTERAKCIJE** Študij medsebojnega delovanja niso izvedli. O medsebojnem delovanju z antibiotičnimi kapljicami za oko, ki se uporabljajo v povezavi s kirurškimi posegi, niso poročali. **NEŽELENI UČINKI** Povzetek varnostnega profila: Glede na razpoložljive klinične podatke se je en ali več neželenih učinkov pojavilo pri skupno 3,4 % bolnikov. Najpogostejši ali najpomembnejši neželeni učinki v podatkih iz združenih študij so bili nenormalen občutek v očesu (0,5 %), erozija roženice (blaga ali zmerna) (0,4 %), očesni pruritus (0,4 %), bolečina v očesu (0,3 %) in rdečica očesa (0,3 %). Neželene učinke na roženici so opazili samo pri populaciji z Japonske. Neželeni učinki so bili redko razlog za prekinitev zdravljenja. Zaradi neželenih reakcij je zdravljenje v študiji prekinilo skupno 8 (0,8 %) bolnikov. Med njimi so bili 3 (0,3 %) bolniki z blago erozijo roženice, 2 (0,2 %) z edemom veke in po 1 (0,1 %) bolnik z nenormalnim občutkom v očesu, edemom roženice ali očesnim pruritusom. Seznam neželenih učinkov: *občasni* (≥ 1/1.000 do < 1/100): zmanjšana ostrina vida, hemoragična retinopatija, okvara epitelija roženice**, erozija roženice (blaga ali zmerna), bolezni epitelija roženice, edem roženice, eksudati iz roženice, bolečina v očesu, krvavitev iz veke, zamegljen vid, fotofobija, edem veke, izloček iz očesa, očesni pruritus, draženje očesa, rdečica oči, hiperemija veznice, nenormalen občutek v očesu, neprijeten občutek v očesu, epistaksa, kašelj, izcedek iz nosnih sinusov, otekanje obraza. *Redki* (≥ 1/10.000 do < 1/1.000): perforacija roženice*, razjeda roženice*, erozija roženice, resna*, skleromalacija*, infiltrati roženice*, bolezni roženice*, brazgotinjenje roženice*, astma*. (* Poročali so o resnih neželenih učinkih iz spremljanja več kot 20 milijonov bolnikov v obdobju trženja. ** Opaženo pri odmerjanju štirikrat na dan.) Bolnikom, pri katerih obstajajo dokazi za razpad epitelija roženice, je treba dati navodila, naj takoj prekinejo uporabo Yelloxa, in pri njih skrbno spremljati zdravje roženice. **Vrsta ovojnine in vsebina:** 5 ml raztopine v stisljivi plastenki iz polietilena s kapalko in navojno zaporko iz polietilena. Pakiranje z 1 plastenko. **Režim izdaje:** Rp **Imetnik dovoljenja za promet z zdravilom:** PharmaSwiss Česká republika s.r.o., Jankovcova 1569/2c, 17000 Praga 7, Češka YEL-110116 **Pred predpisovanjem preberite celoten povzetek glavnih značilnosti zdravila!**

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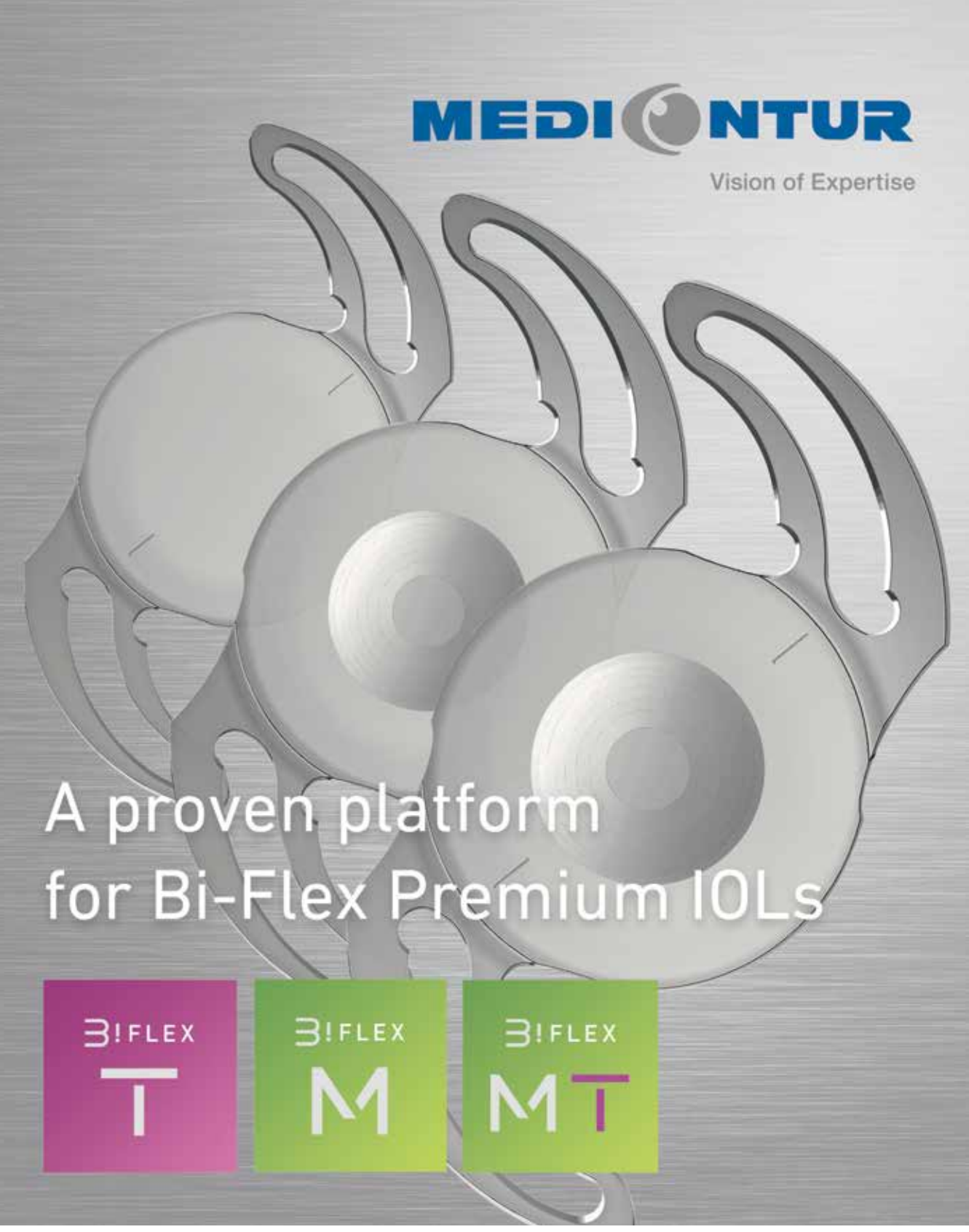

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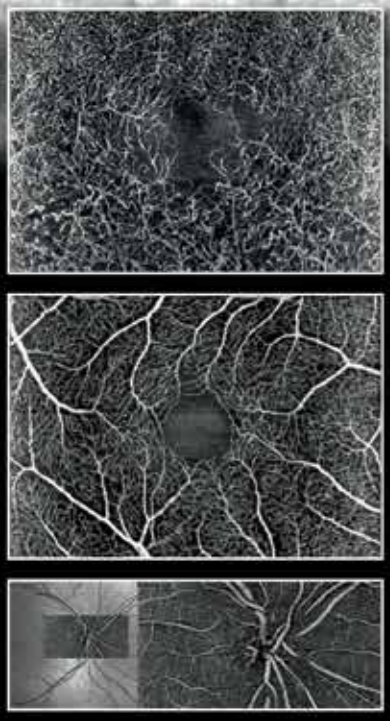

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