ABSTRACT BOOK

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WHEN DISEASE IS NOT OBVIOUS

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Purpose. Nowadays dry eye disease (DED) occurs in 5% to 30% of cases in people over 50 years old, women are more affected than men (8.8% versus 4.5%) [1]. The prevalence of DED is near 7% in Australia and USA, around 25% in Canada and Indonesia, near 33% in Japan [2]. People complain about blurred vision that may be severe and painful. Despite of that some patients have no complaints about visual disturbances, itching, burning and foreign body sensation [3]. But often during the ophthalmic examination physicians find out symptoms of moderate and severe DED. Therefor delayed diagnosis of DED worsens people lifestyle, have the impact on professional life.
Methods. To compare the complaints about DED symptoms due to a screening Ocular Surface Disease Index (OSDI) questionnaire [4,5] and clinical signs of DED. The Ocular Surface Disease Index is a 12-item questionnaire subdivided into three domains: visual function (6), ocular symptoms (3) and environmental triggers (3). OSDI measures the severity of DED. All symptoms, functional problems and environmental triggers are examined for the past week. Score 0 means no disability, 100 – complete disability. The clinical examination of all patients was performed on Ocular surface analyzer SBM OSA [6]. With its help the main criteria (non-invasive tear break-up time (NITBUT), Meibomian gland dysfunction (MGD), lipid layer thickness (LLT) and tear meniscus height (LLH)) were checked up. There were 68 patients (136 eyes) under investigation: 22 men (44 eyes) and 46 women (92 eyes) from 19 to 84 years old.
Results. The analysis of the OSDI questionnaire showed us that 75% of patients (102 eyes) were having no complains about DED and 25% were diagnosed with presence of DED. According to the OSDI questionnaire classification 15% of patients (20 eyes) were having mild DED, 9% (12 eyes) were diagnosed with moderate DED and 1% (2 eyes) was suffering from severe DED.
In the group of people with normal OSDI results it has been demonstrated that 58% (59 eyes) were having NITBUT less than 10 seconds. In 27% (28 eyes) MGD was diagnosed, in 48% (49 eyes) LLT was less than 80 nm and 31% (32 eyes) were having TMH less than 0.25 mm.
Conclusion. It was found out that absence of symptoms of dry eye disease does not mean the absence of the disease. Our patients did not have complains about blepharitis but they still had MGD. That is why ophthalmologists should examine all patients on presence of DED, especially patients who are using contact lenses, eye drops for glaucoma treatment, underwent cataract and refractive surgery. All patients who were diagnosed dry eye disease symptoms are taken under control.

NEW POSSIBILITIES ACTIVE MEDICAL MANAGEMENT OF PATIENTS WITH AMD

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Summary. Due to the high level of the development of modern medicine and genetics, an opportunity to take a new look at the pathogenesis of many diseases, including age-related macular degeneration (AMD), has emerged. The mutation of a number of genes that can suppress the progression of AMD or reduce the likelihood of its development is of particular interest.

The aim of this study was to determine the diagnostic significance of genetic polymorphism and predict the development of AMD. For its accomplishment, there was developed a regression model, which enabled determining the probability of AMD development and its forms according to genotype data, as well as predicting the age of development of AMD with the genotype and clinical and laboratory data taken into account.

Materials and methods. The study included 182 patients (364 eyes), who underwent a complex ophthalmic and genetic examination and were aware of the nature of the study. All these patients were divided into two groups: the main and the comparison group. The main group included 144 patients (288 eyes) diagnosed with AMD, of which 128 eyes (44.45% of all cases) had a “dry” form of AMD, and 160 eyes (55.55% of all cases) – the wet form of the disease. The comparison group included 76 eyes (38 patients) without AMD. Genetic studies were conducted during the main visit after a standard ophthalmic examination. Polymorphic variants of ARMS2, rs 10490924; CFH, rs800292; VEGF, rs2010963 and rs6921438 DNA loci were determined during the real-time polymerase chain reaction (PCR) with the help of TaqMan®SNP Genotyping Assay, Life-technologies reagents (USA), with the Real-Time PCR System 7500 automatic amplifier (Applied Biosystems, USA) employed. The results obtained were statistically processed in Microsoft Office Excel 2010, SPSS 11.0 and MedStat (2004-2012) software.

Results. The analysis of the results demonstrated that a statistically significant relationship with the resulting indicator – the presence of the AMD, was showcased by the indicator values of ARMS2 (rs10490924); CFH (rs800292) and VEGFA (rs2010963) with p = 0.035; p = 0.002 and p = 0.001, respectively, which determine the development of AMD. On the basis of the values of the genotyping results, there was developed a model for determining the probability of AMD development.

We have developed the following formula (F.1) to define the degrees of risk in the proposed model for determining the probability of AMD development:

(F.1),

where P_{AMD} is the probability of AMD development; G_1-G_3 – the indicative values of the corresponding genotypes.

In addition, the results of the analysis demonstrated that a statistically significant relationship with the resulting indicator of presence of the “wet” form of AMD in patients was revealed by the indicative values of polymorphisms: CFH (rs800292) and VEGFA (rs699947) with p = 0.003 in both cases, which determine the development of the “wet” form of AMD.

We have developed the following formula (F.2) to define the degrees of risk in the developed model for determining the probability of the development of the “wet” form of AMD:

(F.2),

where is the probability of the development of the “wet” form of AMD; G_2 and G_4 – the indicative values of the corresponding genotypes.

On the basis of the analysis of the multiple linear regression main characteristics, we have developed a formula “Age of development of AMD” (F.3) for calculating the resulting variable.

Age of development of AMD **=** $149{,}560{,}387*X_1\ 0{,}678*G_1 5{,}640*X_2\ 1{,}864*X_3\ 4{,}791*X_4\ 1{,}660*X_5 + 2{,}316X_6 5{,}163*X_9 + 5{,}067*X_{10} + 6{,}054*X_{11}$ (F.3),

where the names of the variables and their indicative values correspond to the data.

Conclusion. The developed model of prediction of the age of development of the AMD, which takes into account the haplotype, BMI, sex and indicators characterizing the lifestyle and habits of the patient and has a high degree of probability (coefficient of multiple correlation: R = 0.73; determination coefficient: R_2=0,54 (F=16,94; p<0,0001).

Keywords: Age-related macular degeneration, “wet” form of AMD polymorphism, alleles, genes, ARMS2, CFH and VEGFA.

EFFICACY OF NEUROPROTECTIVE THERAPY IN COMPLEX TREATMENT OF LOW PRESSURE GLAUCOMA

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Summary. Glaucoma is one of the first places among the causes of blindness and visual impairment in the population of developed countries, including Ukraine. The low-pressure glaucoma (LPG) is from 3.5% to 66% in the structure of all types of glaucoma. Until now, there is no consensus in the literature on the mechanisms of the pathogenesis, no precise criteria for diagnosis and differential diagnosis of this disease. In recent years, the increasing use of therapy is aimed at supporting trophic processes (neuroprotection) in order to prolong the stabilization period. One of the directions of modern ophthalmology in the treatment of low-pressure glaucoma is the search for agents (pharmacological, physical, etc.) that can inhibit foreign negative shifts and activation of lipid peroxidation in the cellular structures of the optic nerve and retina.

Aim: to study and evaluation of the efficacy of neuroprotective therapy in the treatment of low-pressure glaucoma patients.

Materials and methods. The 40 patients (80 eyes) with low-pressure glaucoma were included in investigation. All patients were divided into 2 groups depending on the stage of the disease. The comparison group consisted of 15 patients (30 eyes) without LPG and with anomalies of refraction (myopia up to 3.0 Dptr). All investigated groups were equal in age and sex. In addition to the comprehensive ophthalmic examination in dynamics, analysis of subjective sensations, changes of the tear production, indicators tear film stability, Lipkof test, OPI test, performed electrophysiological research (determination of visual cortical potential) and electroretinogram.

The period of dynamic supervision for patients was 6 months. The assessment of the ophthalmic status was carried out on the first visit (primary screening), on the second visit (after 1 month), and on the third visit (in 5-6 months). All patients in the main group carry out a ten session's Piler-light course therapy a day. Bioptron-Piler-light was obtained to the use green filter of the Bioptron (Zepter Group, Swiss). Light applications were performed through closed eyelids from a distance of 30 cm for 10 minutes. One month after the first session, an ophthalmic status assessment was performed. Neuroprotective therapy was prescribed after Piler-light course therapy and included cytocholine sodium 2%, cyanocobalamin 0.05% and 0.2% sodium hyaluronate in eye drops (OMK2, FARMIGEA SpA, Roma, Italy, LLC "SAFFARMA") in daily three-fold instillations during four months.

Results. The analysis of the study results showed that after Piler-light course therapy there was a positive dynamics and improvement of clinical-functional parameters in low-pressure glaucoma patients. Electrophysiological parameters and perimeter data were improved. There was a possible widening of the vision, reducing the number of scotomas, improving the MD and reducing the PSD index, both in the initial and in the advanced stage of the disease. Subsequent use during four months eye drops, which included cytocholine sodium 2%, cyanocobalamin 0.05%, and 0.2% sodium hyaluronate led to further improvement of electrophysiological parameters. An increase in the amplitude of electroretinogram has been found, which has been shown to improve the functional activity of photoreceptors. Indicators of the amplitude of the visual-induced potentials increased on the background of treatment, especially at the initial stage of low-pressure glaucoma patients. Indicators of latency complexes decreased and tended to normalize. This indicated an improvement in the conduction of nerve fibers and on the active neuroprotective effect of eye drops on the neuro-receptor apparatus of visual analyzer.

After the treatment course, improvement of all diagnostic tests was observed in patients with stage I of low-pressure glaucoma and in patients with stage II of this disease. It was determined that the tear film stability test improved by 35.1% and 34.1% ($p < 0.05$); the Schirmer test improved by 68.3% and 81.1% ($p < 0.05$), the Lipkof test improved by 31.6% and 34.6% ($p < 0.05$); the OPI test is – 38% and 52.4% respectively.
Conclusions. Our study is a testimony to the apparent positive effect of Piler-light therapy on clinical and functional parameters in low-pressure glaucoma patients. The analysis of the results allowed that neuroprotective therapy of eye drops, which included cytocholine sodium 2%, cyanocobalamin 0.05% and 0.2% sodium hyaluronate positively influenced the surface of the eye, stabilized diagnostic tests and improved electrophysiological parameters ($p<0.05$). The use of this eye drops is a pathogenetically grounded approach to the additional medical treatment of patients with glaucoma.
Key words: low-pressure glaucoma, neuroprotective therapy, Piler-light therapy.

AUTO-MESENCHYMAL STEM CELLS FOR OPTIC NERVE ATROPHY INDUCED BLINDNESS (CASE REPORT).

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Introduction. For today it is generally accepted that optic nerve atrophy induced blindness is irreversible. Auto mesenchymal bone derived stem cell therapy may be option for some vision function retrieval.
Case description. 25 years old male with bilateral total optic nerve atrophy (Vis OU: NLP, OU horizontal nystagmus, no pupil reactions) received auto bone marrow derived mesenchymal stem cell therapy for 3 years. Cells were transplanted intravenously, in the vitreous, injected into the retro bulbar space and in the optic nerve.
Discussion. Self bone marrow derived stem cell transplantation in the vitreous, in retro bulbar space and in the optic nerve is safe for patient.
Results. After 3 year therapy (the case is still going on) Vis OU – light perception and hand motion, OU nystagmus totally resolved. OU – positive (delayed) pupillary reactions.
Conclusion. The transplantation induces some vision function birth and can be considered as perspective direction for further study.
Key words: Stem cells, optic atrophy, blindness.

INFLUENCE OF POLARIZED LIGHT ON THE EYE ANTERIOR SURFACE INFLAMMATION IN A COMBINED EXPERIMENTAL MODEL OF KERATOPATHY IN RATS

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Summary. The main manifestation of eyelids, tear ducts and orbits disorders is a dry eye disease (DED) and keratopathy, which is considered as a serious disease affecting the quality of life. The pathogenesis of the dry eye disease and keratopathy is the defect of Fas-mediated apoptosis, which makes it possible to penetrate CD4 + T-lymphocytes into the exocrine tissue with further damage to it. However, at the heart of the development of the dry eye lies

not only the inflammatory mechanism. Current question of modern ophthalmology are the search for new therapies, one of which is the application of Bioptron-Piler therapy. Under the influence of polarized light, the energy activity of the cell membrane increases. The regeneration processes are activated, oxygen absorption is increased by tissue with the formation of adenosine triphosphate in mitochondria, increases the bioenergetic potential of cells and the speed of blood flow in tissues, activates transport through the vascular wall, intensively formed vessels. Bioptron-Piler-light affects tissue regeneration as well as immune protection.
Aim: to study of pathophysiological mechanisms of action and clinical efficacy of poly- and monochromatic Bioptron-Piler-light of keratopathy.
Materials and methods. Here, we used rats with an experimental model of the keratopathy induced by inflammation of eye anterior surface. Alkaline burning was used to induce the development of inflammation.
The adult rats of the Wistar line and males of the body weight from 250-300 gr were used for the experiments., The xylazine 10 mg / kg body weight (Biovet Pulavi, Poland) and ketamine 60 mg / kg body weight (Farmak, Ukraine) were used for anesthesia. All experimental procedures were carried out in accordance with the rules of the Committee on Animal Bioethics of the Bogomoletz Institute of Physiology of NASU (Kyiv, Ukraine) and complied with the directives of the European Commission (86/609 / EEC). Bioptron-Piler therapy was performed using the red filter of the Bioptron (Bioptron AG, Zepter Group, Swiss) at 1 day after induction of keratopathy. The animals were fixed and the left eye was shielded. Only the right eye was treated from the distance of 30 cm for 3 min. Each animal received a course of treatment for 10 days. There are many models in accordance with the etiopathogenetic factor for the study of DED and keratopathy. We have adapted and used the model of combined lesions of the lacrimal duct, meibomian glands, corneal and conjunctival damage with the development of inflammation. The clinical evaluation on the transparency and corneal neovascularization was performed within 10 days, using a ball scale.
The **results** are showed that a fluorescein test carried out immediately after alkali application and on 1, 5 and 10 days demonstrated a gradual increase in corneal epithelization and vascularization. We observed substantial and statistically significant increase of lacrimation in experimental rats on a first day after induction of inflammation compared to naïve animals. By the seventh day, the lacrimation decreased to a level with subsequent tendency to further decreased tear production. At the same time, there was no significant reduction in tear production on 7^{th} day (compared to the first day) in a group of rats with the anterior surface inflammation that received polarized red light treatment, which may indicate a possible anti-inflammatory effect of such treatment.
It is known that stimulation of cytochrome oxidase by light can lead to an increase at mitochondria energy metabolism, an increase of level intracellular metabolism, to activate proliferation and cell migration. Consequently, in our conditions markedly slowed down the processes of epithelization and corneal vascularization after use red Bioptron-Piler therapy, which has a positive anti-inflammatory effect.
Conclusion. Obtained evidence of the positive anti-inflammatory effect of Bioptron-Piler-light in experimental model of the keratopathy. The biological effect of light energy is realized by photochemical transformation in mitochondria through the interaction of cytochrome oxidase and affects the energy processes inside the cell, proliferation, cell migration, neutralizing reactive oxygen compounds. Anti-inflammatory and protective effect of Bioptron-Piler therapy to treat patients with keratopathy requires further study in clinical practice.
Key words: keratopathy, dry eye disease, inflammation of the anterior surface of the eye, fluorescein test, Schirmer test, polarized light, Bioptron-Piler therapy.

LASER TREATMENT FOR BULLOUS FORMS OF IDIOPATHIC CENTRAL SEROUS CHORIORETINOPATHY
ЛАЗЕРНОЕ ЛЕЧЕНИЕ БУЛЛЕЗНОЙ ФОРМЫ ЦЕНТРАЛЬНОЙ СЕРОЗНОЙ ХОРИОРЕТИНОПАТИИ

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Purpose: to analyze efficiency of laser treatment of bullous variant of central serous chorioretinopathy with threshold focal laser.
Цель: проанализировать эффективность применения пороговой фокальной лазерной коагуляции сетчатки при буллезной форме центральной серозной хориоретинопатии.

Materials and methods: a 36-years-old male patient presented to our clinic for wavy vision of the left eye, shadowy areas in his central vision of the left eye. Complaints developed a week ago. The patient thought, that his complaints were associated with stress. Past medical history: lymphogranulomatosis, course of chemotherapy. Best Corrected Visual Acuity (BCVA) on admission: OD 1.0, OS 0.8; intraocular pressure (IOP) OD = 12 mm.Hg, IOP OS = 12 mm.Hg. In ophthalmoscopy of the left eye it was revealed loss of foveal reflex, retinal detachment (the area was 8 times larger than head of the optic disk) localized in the area of fovea and supero-temporal arcade. The patient underwent examination with Spectralis HRA+OCT (Heidelberg Engineering, Germany):
Near-infrared reflectance (NIR)
Fundus Autofluorescence: Blue Reflectance Autofluorescence (BAF) - 488nm, Infra-red Reflectance Autofluorescence (IRAF) - 787nm
Multicolor Confocal Scanning Laser Ophthalmoscopy
Optical Coherence Tomography with enhanced depth imaging optical coherence tomography (EDI-OCT)
Fluorescein Angiography (FAG).
EDI-OCT has showed detachment of outer retinal layers in the area of fovea (detachment height was 437μm, the highest detachment was in the area of supero-temporal arcade – 1051μm); detachment of retinal pigment epithelium (RPE) in paramacular area. Thickness of choroidea in the area of fovea was 667μm. We revealed vascular leakage in the area of supero-temporal arcade at the end of retinal arterial stage of FAG. The patient was diagnosed with: OS – Bullous variant of central serous chorioretinopathy. Focal laser treatment was recommended to the patient (Visulas Trion, Carl Zeiss, Germany). Parameters of laser coagulation: green laser 532nm, power - 50-80mW, exposition - 0.1s, spot`s diameter - 100 μm.
Материалы и методы: пациент Х. 36 лет с жалобами на появление искривлений, серого полупрозрачного пятна перед левым глазом в течение недели. Возникновение симптомов связывает с перенесенным накануне стрессом. В анамнезе лимфогранулематоз, курс химиотерапии. При поступлении: максимально корригируемая острота зрения (МКОЗ) OD = 1.0, OS = 0.8 н/к., внутриглазное давление (ВГД) OD = 12 мм.рт.ст., OS = 12 мм.рт.ст. При офтальмоскопии OS обнаружена отслойка НСЭ площадью 8 диаметров диска зрительного нерва (ДД) в области верхней сосудистой аркады с вовлечением зоны фовеа. В рамках мультимодального подхода диагностики патологии макулярной области пациенту были сделаны следующие исследования на диагностической офтальмологической платформе Spectralis HRA+OCT (Heidelberg Engineering, Германия):
Снимки в монохроматическом свете (инфракрасный свет);
Аутофлюоресцентные снимки: коротковолновая аутофлюоресценция (КВ-АФ) длиной волны 488 нм (BluePeak) и инфракрасная аутофлюоресценция (ИК-АФ) длиной волны 787 нм.;

Мультиспектральное лазерное сканирование - MultiColorTM;
Спектральная оптическая когерентная томография (SD-OCT) в том числе с модулем улучшенной глубины изображения к ОКТ (EDI-ОКТ);
Флюоресциновая ангиография (ФАГ) с красителем флюоресцеином натрия.
По данным SD-OCT EDI-ОКТ в зоне фовеа отслойка НСЭ составляла 437 мкм, самая большая высота отслойки НСЭ наблюдалась в области верхней сосудистой аркады и составляла 1051 мкм, толщина хороидеи в области фовеа OS = 667 мкм. В конце артериальной фазы на снимках ФАГ в области верхней сосудистой аркады была обнаружена зона просачивания, три отслойки пигментного эпителия в парамакулярной зоне, старый хориоретинальный очаг ⅓ ДД в парапапиллярной области. Учитывая данные жалоб, анамнеза и диагностического обследования, пациенту был поставлен диагноз: OS - Центральная серозная хориоретинопатия, буллезная форма. Проведена пороговая фокальная лазерная коагуляция сетчатки (ЛКС) на лазерной установке Visulas Trion (Carl Zeiss, Германия) зеленым спектром длины волны (532 нм). Параметры лазеркоагуляции: мощность 50-80 мВт, экспозиция 0,1 с, диаметр пятна - 100 мкм.
Results: the patient hadn`t any complaints 21 days after the treatment. Examination after the laser treatment showed: BCVA OU 1.0, IOP OD 15mm.Hg, OS 13mm.Hg. In ophthalmoscopy of the left eye there weren`t any modifications in macular and paramacular area. Multimodal diagnostic methods, based on Spectralis HRA+OCT (Heidelberg Engineering, Germany) showed absolutely normal retinal layers. Confocal microperimetry MAIA (Centervue, Italy) demonstrated, that light sensitivity of the retina was 26.9dB.
Результаты: через 21 день после проведенного лазерного лечения субъективно пациент отметил повышение остроты зрения, полное исчезновение жалоб на искривление прямых линий и наличие полупрозрачного серого пятна перед OS. При осмотре после проведенного лечения: МКОЗ OD = 1.0, OS = 1,0, ВГД OD = 15 мм.рт.ст., OS = 13 мм.рт.ст.. При офтальмоскопии OS макулярная и парамакулярная зоны без видимой патологии. Снимки на диагностической офтальмологической платформе Spectralis HRA+OCT показали полную резорбцию субретинальной жидкости, по данным фундус-микропериметрии MAIA (CenterVue, Италия) световая чувствительность сетчатки OS составила 26,9 дБ.
Conclusion: this clinical case shows us the ability of laser treatment to cure the bullous variant of the central serous chorioretinopathy. After the treatment BCVA get better and normal sensitivity of the retina is saved. So, we can think, that this method is efficient and absolutely safety for patients with bullous variant of the central serous chorioretinopathy.
Заключение: Представленный случай демонстрирует возможность полной регрессии высокой отслойки НСЭ после лазерного воздействия на сетчатку с восстановлением МКОЗ до 1,0. Применение лазерной коагуляции с предложенными параметрами не приводит к развитию скотомы и снижению качества зрения. На основании данного примера, мы можем говорить об эффективности и безопасности лазерного лечения буллезной формы ЦСХ описанной выше методикой.

RESULTS OF A RANDOMISED CONTROLLED TRIAL COMPARING COMBINED INTRAVITREAL DEXAMETHASONE IMPLANT (OZURDEX) VERSUS INTRAVITREAL LUCENTIS (RANIBIZUMAB) IN PATIENTS WITH DIABETIC MACULAR EDEMA AT THE TIME OF CATARACT SURGERY.

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Introduction: Diabetic macular edema is a leading cause of vision impairment among people within the working- age population. This study discusses the results of treatment of diabetic macular edema in combination with cataract surgery.
Aim of the study: To evaluate and compare visual and anatomical outcomes between intravitreal Ozudex and Lucentis when administered at the time of Phacoemulsification in patients with Diabetic Macular Edema (DME).
Material and methods: The charts of 50 consecutive eyes of 40 patients with clinically significant cataract and DME who underwent combined phacoemulsification and IOL implantation with intravitreal injection of 0.05 mg Lucentis or 0.7 mg Ozurdex were analyzed. The mean age of the patients was 42.9 years (range 52 to 82years). Postoperative follow-up was at 1 day, 1 week, 1 month, 3 months. Patients were grouped into 2 categories, the first one included Ozudex combined Phacoemulsification and second category Lucentis Combined Phacoemulsification. Visual acuity (VA), refraction, intraocular pressure (IOP), central macular thickness (CMT) and rates of intraoperative and postoperative complications were recorded and compared between this two groups. Primary outcome was the change of best-corrected visual acuity (BCVA) ; secondary outcome was the change of central retinal thickness (CRT). Participants were randomized 1:1 to receive Ozudex implant or Lucentis during cataract surgery.
Results: The mean CMT in Ranibizumab and Dexamethasone implant groups decreased significantly from 467±109.5 μm and 486 ± 152.4 μm at baseline to 375.5± 40.3 μm and 298,1± 55.8 μm postoperatively at 3 months, respectively (P=.02, P=0.001,respectively). Mean decrease in CMT after surgery was statistically better in Dexamethasone group compared to that of Ranibizumab group (P=0.03).The mean initial BCDVA in ranibizumab and dexamethasone groups increased siginificantly from logMAR 1.0 ± 0.38 and logMAR 1.0 ± 0.18 logMAR at baseline to 0,49 ± 0.14 logMAR and 0,54 ± 0.12 logMAR postoperatively at 3 months, respectively (P=0.03).Mean increase in BCDVA was statistically similar in both groups (P>0.05).

MACULAR HOLE CLOSURE WITH INVERTED INTERNAL LIMITING MEMBRANE FLAP TECHNIQUE

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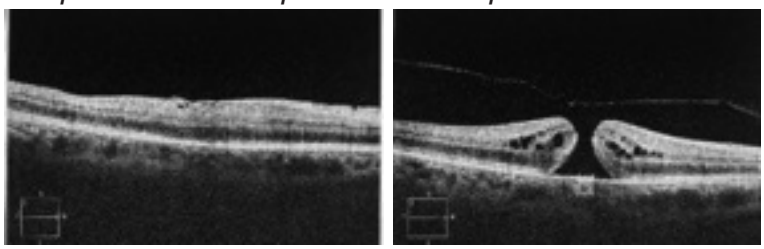
A prevalence of idiopathic macular hole is ranging from 0.2% to 0.8% in the general population. As the fovea is the site responsible for central vision, the development of a MH results in severe vision loss. Early treatment is therefore required. The standart treatment is vitrectomy with internal limiting membrane (ILM) peeling, gas tamponade, and postoperative face-down positioning. The mechanism of MH closure in this procedure is believed to be multifactorial. The MH is closed by this standard procedure in approximately 88% of cases. Despite the above-mentioned advances in surgical techniques, however, 12% of the MHs did not achieve complete closure.

In 2010, however, Michalewska reported the inverted ILM flap technique, which was proven to increase the rate of complete closure as well as the final visual outcome from 88% to 98%
THE TECHNIQUE: In the inverted ILM flap technique, after core vitrectomy and dye staining, the ILM is not completely removed from the retina but is left in place, attached to the edges of the MH. This ILM remnant is then inverted to cover and fill the MH. Finally, fluid-air exchange is performed.
Several mechanisms have been proposed to explain the tissue repair that occurs following use of the inverted ILM flap technique:
The inverted ILM, containing Müller cell fragments, may induce glial cell proliferation, filling the MH and supporting MH closure.
It may also work as a scaffold for tissue proliferation, creating a microenvironment that encourages correct photoreceptor positioning and finally improving postoperative anatomic and functional outcome.
The elimination of tangential traction on the fovea.
Mechanical compression by the Gas on the macular hole, which improves adhesion of the edges of macular hole to each other.
A recent study compared the results of vitrectomy plus complete ILM removal with the results of the inverted ILM flap technique in the treatment of myopic MH without retinal detachment.[5] The functional and anatomic outcomes reported with the inverted ILM flap technique were superior to those with complete ILM removal for the treatment of myopic MH.
Variants of the classic inverted flap technique have been described. In one of this modified procedure ILM is peeled from the temporal side of the fovea only. Michalewska found that this temporal inverted ILM flap technique was as effective as the classic inverted ILM flap technique for the repair of MHs.

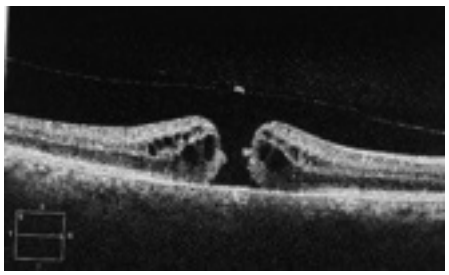
In our own experience, the inverted ILM flap technique appears to be a safe and successful procedure for the management of large idiopathic MHs and myopic MHs. It is possible to observe the healing process on OCT images. The success rate of anatomical and functional outcome was achieved in 100% during the period of 3 months after the procedure. During this period the inverted ILM flap contracts, adheres to the layers of macula and it gets complicated to differentiate it from retinal structure.

We present case reports from our practice:

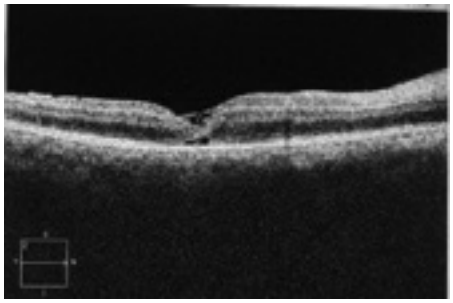


Case N1 : A 57-year-old male presented to our clinic with a complaint of decreased vision OD. The visual complaints were at distance and near, with and without correction for his right eye. He stated the change in his vision seemed different than the blur he had experienced in the past 2-3 months. His vision was best-corrected to 20/250. The patient noted that all the letters appeared to be jumping OD. Amsler grid was performed. The patient could only recognize part of the central dot and the lines appeared collapsed centrally and superiorly around the central dot OD. An OCT was performed OD showing a full thickness macular hole. The

patient was operated by inverted ILM flap technique.



vOn examination shortly after the operation metamorphopsia had disappeared. Two weeks after operation his BCVA improved to 20/50.
Case N1: A 68-year-old female presented to our clinic complaining of decreased vision and metamorphopsia in her right eye for the past month. Her vision was best-corrected to 20/200. An OCT was performed OD showing a full thickness macular hole. We used the same tech nique of treatment on this patient.



One month after the operation her BCVA was 20/40. OCT images showed closed macular hole.
CONCLUSION Vitrectomy with the inverted ILM flap technique seems to be a safe and effective surgery for idiopathic and myopic large MHs, improving both functional and anatomic outcomes. Postoperative evaluation with new retinal imaging techniques including structural OCT, OCT angiography, and adaptive optics, and with functional tests such as microperimetry, may help to elucidate the structural and functional changes associated with this surgical technique and to understand the mechanisms of postoperative improvement observed in the retinal architecture.

DELAYED EPITHELIAL HEALING AFTER DEEP ANTERIOR LAMELLAR KERATOPLSTY

Didar S. Anwar MD, Neega Eye Center, Castries, Saint Lucia

Purpose: Delayed epithelial healing is more prevalent after deep anterior lamellar keratoplasty (DALK). In this study we discuss its causative factor.
Methods: Ten eyes underwent DALK had delayed epithelial healing. Delayed epithelial healing was defined as presence of epithelial defect 30 days after DALK surgery. This was compared to another 10 eyes underwent DALK with no delayed epithelial healing (healing happened in two weeks or less). Anterior segment OCT was performed for all patients in both groups.
Results: Eyes with delayed epithelial healing had raised donor cornea edge by average of 132 microns at least in one quadrant of the cornea. Eyes without delayed epithelial healing had raised donor edge of 40 microns average
(P= 0.0018). Bandage contact lens did not help in healing of the epithelial defect. Pressure patch for one week helped treating those cases with delayed epithelial healing. Therefore the

reason here is due to raised donor edge in at least one quadrant of the cornea making the stem cells having difficulty producing epithelial cells over the raised edge.
Conclusion: Delayed epithelial healing is seen more in DALK than in PKP. It appears to be due to raised cornea donor edge. Pressure patch was the only effective way to treat those cases. Better dissection at the recipient edge is needed for the donor cornea to oppose better with the recipient cornea. A different suturing technique from PKP is needed for DALK to make the donor and recipient edges oppose together better.

Scissors Deep Anterior Lamellar Keratoplasty for Failed Big-Bubble Technique: An Alternative Technique.

Didar S. Anwar MD, Neega Eye Center, Castries, Saint Lucia

Objectives: We describe a modified technique for performing lamellar dissection in Deep Anterior Lamellar Keratoplasty (DALK) after failure to achieve a “big bubble” detachment of descemet’s membrane (DM) with deep intrastromal pneumatic injection. **Methods:** The technique utilizes blunt lamellar dissection with blunt-tipped corneal mini-scissors as an alternative to a crescent blade which can be difficult for surgeons to master and is associated with a high risk of perforation. **Results:** Other techniques of blunt dissection, such as the Melles technique, cannot be utilized after failure to achieve a big bubble for the emphesyma in the stroma prevents visualization of the spatula. In contrast, our blunt scissors lamellar dissection technique takes advantage of the emphysema and microdetachments of Descemet’s membrane created by the pneumatic injection. **Conclusions:** This technique provides DALK surgeons with a simple, alternative method of baring descemet’s membrane or achieving a pre-DM plane with minimal residual stroma, after failure to achieve a big bubble.

ВЛИЯНИЕ ФАКОЭМУЛЬСИФИКАЦИИ КАТАРАКТЫ НА ДВУХ ГЛАЗАХ НА МАКУЛЯРНУЮ ОБЛАСТЬ СЕТЧАТКИ В ДИНАМИКЕ ПО ДАННЫМ ОПТИЧЕСКОЙ КОГЕРЕНТНОЙ ТОМОГРАФИИ

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ФГБУ « Клиническая больница», Москва.

Актуальность. Хирургическое лечение катаракты на втором глазу при двусторонней катаракте традиционно проводится через один и более месяцев после первой операции в связи с завершением всех репаративных процессов (Иошин И.Э., 2012, Малюгин Б.Э., и др.). Однако в эти сроки доказана актуальность развития макулярного отека (МО) (Астахов С.Ю. с соавт., 2010, Иошин И.Э., 2012, Johnson M.W., 2009, Lobo C., 2012, 2014, Mentes J. et al., 2003, Rey S., Damico D.J. 2002 и др.).
Цель. Анализ результатов состояния сетчатки макулярной области после факоэмульсификации возрастной катаракты с имплантацией ИОЛ, выполненной на обоих глазах, для обоснования сроков проведения операции на втором глазу.
Материалы и методы: Проведен статистический анализ результатов 93 пациентов (186 глаз) с двухсторонней возрастной катарактой после факоэмульсификации на двух глазах, выполненной с различными интервалами между операциями: 1-я группа – (1-5 дней, n=58 глаз), 2-я - (1-2 недели, n=60 глаз), 3-я (3-4 недели, n=68 глаз).
До хирургического лечения средняя острота зрения с коррекцией на первом глазу составляла 0,39±0,05, на втором - 0,42±0,05.
Всем пациентам проведена оптическая когерентная томография (прибор «Optovue» фирмы «OPTOVUE», США) по протоколу сканирования «Raster» и частично (толщина сетчатки в центре и объем макулы в 5-ти мм зоне) «Retina map» до операции, через 1,2,4, 12 недель после операции.

Стандартная схема инстилляций в первую неделю после операции включала антибиотик, глюкокортикоид, один из препаратов НПВС. Далее инстилляции препаратов НПВС продолжались до одного месяца после операции.
Результаты. Пациенты находились под офтальмологическим контролем до операции, через 1,2,4,12 недель после проведения операции. Течение послеоперационного периода у больных как после первого, так и второго глаза проходило ареактивно. Средняя острота зрения в первый день после операции составила 0,94±0,05 на первом и 0,92±0,06 на втором глазу, независимо от сроков между операциями.
Исследования сетчатки до операции показали средние числовые значения ее толщины на первом оперируемом глазу в центре 272±4,0 мкм, объема сетчатки в зоне 5 мм – 5,628±0,07 мм³, на втором глазу в центральной зоне 269±8,0 мкм, объем сетчатки в зоне 5 мм – 5,610±0,07 мм³.
После операции во всех 3 группах больных томографические показатели через 1,2,4,12 недель практически не изменились с дооперационным уровнем. Ни в одном случае не отмечено увеличения толщины сетчатки в центре больше чем на 10 микрон (разница статистически недостоверна (p>0,05)).
Заключение. Высокий уровень хирургической технологии и медикаментозного сопровождения факоэмульсификации минимизировали риск развития отека сетчатки макулярной области, что подтверждается данными оптической когерентной томографии, проведенной у пациентов, оперированных на двух глазах в различные сроки (через 1-5 дней, 1-2 и 3-4 недели после операции на первом глазу) и прослеженные до 3-х месяцев после операции.
Полученные результаты могут быть учтены при выборе интервалов между операциями на двух глазах при двусторонней возрастной катаракте.

LONG-TERM RESULTS OF ONE-STEP AND STEP-BY-STEP METHODS OF SURGICAL TREATMENT OF MIXED HORIZONTAL-VERTICAL SQUINT IN CHILDREN.

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Abstract. We analyzed of long-term results of a one-stage surgical treatment of children with horizontal-vertical strabismus. The children were operated in the «Medical center «New vision» from 2008 till 2017 years. In the main group, children were operated of a one-stage surgical treatment. In the control group, children were operated traditionally (step by step). The first step eliminated the horizontal component, and the second step eliminated the vertical component of strabismus. One-step method allowed to reduce the number of operations necessary for formation orthotropy (p = 0.001) from 2 operations to 1, in comparison with the traditional method of treatment. A one-step method gives better results in the formation of stereo vision in the distance (p = 0.001), 19.1% of cases compared with 3.9% of cases of patients operated by the traditional method of treatment.
Purpose. To assess the effectiveness of long-term results of single-stage surgical treatment of horizontal-vertical strabismus in children.
Materials and methods. We retrospectively reviewed the medical records of children with horizontal-vertical strabismus who were operated in the “Medical Center “New Vision” from 2008 till 2017 years. The presence of orthotropy, binocular vision and stereo vision 1 year after surgical treatment is analyzed.
The study was conducted in two groups of patients. In the first main group of 101 patients

with diagnos of concomitant horizontal-vertical strabismus, were operated simultaneously on the developed method (patent of January 29, 2018, No. 20160007 RB). In the second group of 35 patients were operated on in stages: the horizontal component was eliminated by the first stage, the vertical component was eliminated by the second stage. The groups are comparable in age, diagnosis, refraction, visual acuity, and angle of strabismus.

Results and discussion. The results of the surgery were assessed in one year. A year later, in children of the main group, operated simultaneously, orthotropy into the distance occurs in 83.3% of cases, in the comparison group in children operated in stages in 66.2% of cases ($p = 0.04$).

Statistically significant differences in the two groups of patients in obtaining near-orthotropy, not established ($p = 0.16$).

In the formation of binocular vision in the distance and near statistically significant differences between the main group and the comparison group is not obtained ($p = 0.27$ and $p = 0.5$, respectively).

Binocular vision was formed in patients of the main group at a distance of 45.5% of cases (46 children), close to 48.5% of cases (49 children) ($p = 0.001$).

In patients of the comparison group, the binocular nature of distance vision was formed in 12 children (34.3% of cases), close to 20 children (57.1% of cases) ($p = 0.001$).

Statistically significantly better results in the formation of stereo vision in the distance after a year when comparing two comparable groups were obtained in patients operated on with the proposed method: 19.1% of cases compared to 3.9% of cases in patients operated on in stages ($p = 0.001$).

In the formation of stereo vision in the vicinity between the two groups, no statistically significant differences were found ($p > 0.05$).

In terms of the number of operations: in the group of children operated with the proposed method, the median of the number of operations was 1.0 (90.1% of cases), while in the comparison group the median of the number of operations was 2 (62.9% of cases). In 13 children in the comparison group (37.1% of cases), three or more surgical interventions were required ($p = 0.001$).

Conclusion. 1. The single-stage method allows to form stereoscopic vision into the distance: 19.1% of cases compared to 3.9% of cases in patients operated on with the traditional method of treatment ($p = 0.001$).

2. The method developed by us reduces the number of operations necessary for the formation of orthotropy from 2 to 1, in comparison with the traditional method of treatment ($p = 0.001$).

ОТДАЛЕННЫЕ РЕЗУЛЬТАТЫ ОДНОЭТАПНОГО И ПОЭТАПНОГО СПОСОБОВ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ СМЕШАННОГО ГОРИЗОНТАЛЬНО-ВЕРТИКАЛЬНОГО КОСОГЛАЗИЯ У ДЕТЕЙ.

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Цели и задачи. Оценить эффективность отдаленных результатов одноэтапного хирургического лечения смешанного горизонтально-вертикального косоглазия у детей.

Материалы и методы. Проведен анализ историй болезней и амбулаторных карт детей, перенесших хирургическую коррекцию горизонтально-вертикального косоглазия в ИМФУП «Медицинский центр «Новое зрение» за период 2008 – 2017 годы.

Проанализированы наличие ортотропии, бинокулярного зрения и стерео-зрения через 1 год после хирургического лечения.
Исследование проведено в двух группах пациентов. Первая основная группа: 101 пациент с диагнозом сочетанное горизонтально-вертикальное косоглазие, были прооперированы одномоментно по разработанной методике (патент от 29 января 2018 года №20160007 РБ). Пациенты группы сравнения 35 детей были прооперированы поэтапно: первым этапом устранялся горизонтальный компонент, вторым этапом устранялся вертикальный компонент. Группы сопоставимы по возрасту, диагнозу, рефракции, остроте зрения, углу косоглазия.
Результаты и обсуждение. Через год у детей основной группы, оперированных одномоментно ортотропия вдаль встречается в 83,3% случаев, в группе сравнения у детей, оперированных поэтапно в 66,2% случаев (p=0,04).
Статистически значимых различий в двух группах пациентов в получении ортотропии вблизи, не установлено (p=0,16).
В формировании бинокулярного зрения вдаль и вблизи статистически значимых различий между основной группой и группой сравнения не получено (p=0,27 и p=0,5 соответственно).
Бинокулярное зрение сформировалось у пациентов основной группы вдаль в 45,5% случаев (46 детей), вблизи в 48,5% случаев (49 детей) (p=0,001).
У пациентов группы сравнения, бинокулярный характер зрения вдаль сформировался у 12 детей (34,3% случаев), вблизи у 20 детей (57,1% случаев) (p=0,001).
Статистически значимо лучшие результаты в формировании стерео-зрения вдаль через год при сравнении двух сопоставимых групп, получены у пациентов, оперированных предложенной методикой: 19,1% случаев по сравнению с 3,9% случаев у пациентов, оперированных поэтапно (p=0,001).
В формировании стерео-зрения вблизи между двумя группами не установлено статистически значимых различий (p>0,05).
По параметру количества операций: в группе детей оперированных предложенной методикой, медиана количества операций составила 1,0 (90,1% случаев), в то время как в группе сравнения медиана количества операций составила 2 (62,9% случаев). У 13 детей в группе сравнения (37,1% случаев) потребовалось три и более хирургических вмешательств (p=0,001).
Выводы. Одноэтапный метод позволяет сформировать стерео-зрение вдаль: 19,1% случаев в сравнении с 3,9% случаев у пациентов, оперированных традиционным способом лечения (p=0,001).
Разработанная нами методика уменьшает количество операций необходимых для формирования ортотропии с 2 до 1, в сравнении с традиционным способом лечения (p=0,001).

EVALUATION OF EFFECTIVNESS OF DERMAL FILLERS AND BOTULINUM TOXIN USAGE IN OPHTHALMOLOGY

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There is a tendency of rapid growth of pacients, who refuse the usage of aggressive surgical methods over the past several years during the treatment of periorbital zone aesthetic problems. They are trying to get rid of surgery. In some cases doctors and surgeons tend to switch on non-surgical methods because of their less aggressive outcomes, risks and postoperative complications.

The aim: of our study was to evaluate the effectiveness of dermal fillers and botulinum toxin usage in ophthalmological practice.
Methods of study: was done retrospective analysis of patients, who had different ophthalmological pathologies and problems on aesthetic field: lower lid fat herniation, entropion, blepharochalasis, crows feet wrinkles, eyelid skin pigmentation disorders, loss of elastisity, blepharospasm, hemifacial spasm, lagophthalmus, corneal ulceration, as alternatiive method of blepharorrhaphy during amniotic membrane transplantation. Was determined effectiveness of botulinum toxin and dermal fillers, index of patients satisfaction.
Results: Usage of non-surgical methods in some ophthalmological pathologies and aesthetic problems sometimes is a good alternative with low risk rate and decreased postprocedural rehabilitation period.

IDIOPATHIC INTERMEDIATE UVEITIS: CLINICAL FEATURES IN `CHILDREN.

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Purpose :The aim of our study was to describe the clinical characteristics of intermediate uveitis (IU) in children.
Methods: We have done retrospective analysis of medical records, evaluated clinical course of diseases, assessed different variables , including age and gender , laboratory data, presence of systemic diseases, clinical features, their complications ,treatment strategies with their outcomes, remission, final visual acuity.
Results and conclusion : According to the results we can conclude that although the disease is sight-threatening timely diagnostics , correct treatment tactics and close monitoring are the important factors for prolongation of remission, prevention of serious complications and therefore maintaining of existing visual acuity.

КОМБИНИРОВАННАЯ ХИРУРГИЯ ГЛАУКОМЫ С ОДНОМОМЕНТРОЙ ФАКОЭМУЛЬСИФИКАЦИЕЙ КАТАРАКТЫ ПРИ ПСЕВДОЭКСФОЛИАТИВНОЙ ГЛАУКОМЕ

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Актуальность: Известно, что катаракта и глаукома являются основными причинами приводящие к слепоте во всем мире. Псевдоэксфолиативная глаукома является самой распространенной формой вторичных глауком-псевдоэксфолиативная (ПЭГ) и в нашем регионе довольно распространена.Имея большой опыт и высокие результаты имплантации Ex-PRESS Glaucoma Filtration Device (GFD)P200. Но учитывая что ПЭГ трудно поддается лечению мы решили, также, активизировать естественный путь оттока водянистой влаги через увеосклеральный отток (ВГЖ),с помощью формирования глубокой лентовидной склерэктомии. Таким образом сформировав 2 пути оттока ВГЖ (получен патент, PA No AM20170010).
Цель: Изучить ранние и отдаленные результаты лечения сочетанной патологии катаракты и ПЭГ при применении комбинированного метода имплантации Ex-PRESS GFD P200 с глубокой лентовидной склерэктомией и факоэмульсификацей катаракты.
Материалы и методы: Выполнено комбинированных антиглаукоматозных операций с

ФЭК с з/к ИОЛ на (97 глазах), в возрасте 56-87 лет. ПЭГ 2ой стадии 22 глаза (22,7%) и 75 глаза ПЭГ 3ей стадии (77,3%).
Результаты и обсуждение: Среднее значение ВГД до операции составило 27,29±3,16 мм рт. ст., через 1 год после операции 13,06±1,17 мм рт. ст. Толерантное ВГД к концу 1ого года достигалось в 91,75% случаев, в 4,12% случаев потребовалась гипотензивная терапия в виде бета-блокатора, в том же количестве (4,12%) потребовалось назначение комбинированного препарата. В послеоперационном периоде в 4-х случаях было отмечено осложнение в виде цилиохориоидальной отслойки, которое купировалось консервативным лечением.
Заключение: Комбинированная имплантация Ex-PRESS GFD P200 с одновременной активацией увеосклерального оттока, путем формирования глубокой лентовидной склерэктомии, является эффективным и безопасным методом лечения при сочетанной патологии катаракты и ПЭГ. Этот метод лечения способствует стойкому снижению ВГД в поздние послеоперационные сроки, что в свою очередь стабилизирует глаукомный процесс согласно данным периметрии, в связи с этим он может являться методом выбора хирургического лечения при сочетанной патологии катаракты и ПЭГ.

ВЛИЯНИЕ ФАКОЭМУЛЬСИФИКАЦИИ КАТАРАКТЫ НА ДВУХ ГЛАЗАХ НА МАКУЛЯРНУЮ ОБЛАСТЬ СЕТЧАТКИ В ДИНАМИКЕ ПО ДАННЫМ ОПТИЧЕСКОЙ КОГЕРЕНТНОЙ ТОМОГРАФИИ

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Актуальность. Хирургическое лечение катаракты на втором глазу при двусторонней катаракте традиционно проводится через один и более месяцев после первой операции в связи с завершением всех репаративных процессов (Иошин И.Э., 2012, Малюгин Б.Э., и др.). Однако в эти сроки доказана актуальность развития макулярного отека (МО) (Астахов С.Ю. с соавт., 2010, Иошин И.Э., 2012, Johnson M.W., 2009, Lobo C., 2012, 2014, Mentes J. et al., 2003, Rey S., Damico D.J. 2002 и др.).
Цель. Анализ результатов состояния сетчатки макулярной области после факоэмульсификации возрастной катаракты с имплантацией ИОЛ, выполненной на обоих глазах, для обоснования сроков проведения операции на втором глазу.
Материалы и методы: Проведен статистический анализ результатов 93 пациентов (186 глаз) с двухсторонней возрастной катарактой после факоэмульсификации на двух глазах, выполненной с различными интервалами между операциями: 1-я группа – (1-5 дней, n=58 глаз), 2-я - (1-2 недели, n=60 глаз), 3-я (3-4 недели, n=68 глаз).
До хирургического лечения средняя острота зрения с коррекцией на первом глазу составляла 0,39±0,05, на втором - 0,42±0,05.
Всем пациентам проведена оптическая когерентная томография (прибор «Optovue» фирмы «OPTOVUE», США) по протоколу сканирования «Raster» и частично (толщина сетчатки в центре и объем макулы в 5-ти мм зоне) «Retina map» до операции, через 1,2,4, 12 недель после операции.
Стандартная схема инстилляций в первую неделю после операции включала антибиотик, глюкокортикоид, один из препаратов НПВС. Далее инстилляции препаратов НПВС продолжались до одного месяца после операции.
Результаты. Пациенты находились под офтальмологическим контролем до операции, через 1,2,4,12 недель после проведения операции. Течение послеоперационного периода у больных как после первого, так и второго глаза проходило ареактивно.

Средняя острота зрения в первый день после операции составила 0,94±0,05 на первом и 0,92±0,06 на втором глазу, независимо от сроков между операциями.
Исследования сетчатки до операции показали средние числовые значения ее толщины на первом оперируемом глазу в центре 272±4,0 мкм, объема сетчатки в зоне 5 мм – 5,628±0,07 мм³, на втором глазу в центральной зоне 269±8,0 мкм, объем сетчатки в зоне 5 мм – 5,610±0,07 мм³.
После операции во всех 3 группах больных томографические показатели через 1,2,4,12 недель практически не изменились с дооперационным уровнем. Ни в одном случае не отмечено увеличения толщины сетчатки в центре больше чем на 10 микрон (разница статистически недостоверна (p>0,05)).
Заключение. Высокий уровень хирургической технологии и медикаментозного сопровождения факоэмульсификации минимизировали риск развития отека сетчатки макулярной области, что подтверждается данными оптической когерентной томографии, проведенной у пациентов, оперированных на двух глазах в различные сроки (через 1-5 дней, 1-2 и 3-4 недели после операции на первом глазу) и прослеженные до 3-х месяцев после операции.
Полученные результаты могут быть учтены при выборе интервалов между операциями на двух глазах при двусторонней возрастной катаракте.

THE INFLUENCE OF CATARACT PHACOEMULSIFICATION IN TWO EYES ON THE MACULAR REGION OF THE RETINA IN THE DYNAMICS ACCORDING TO OPTICAL COHERENCE TOMOGRAPHY.

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Relevance. Surgical treatment of cataracts in the second eye in case of bilateral cataract is traditionally performed one or more months after the first operation in connection with the completion of all reparative processes (Ioshin I.E., 2012, Malyugin BE, and others). However, in these terms, the relevance of the development of macular edema (MO) has been proved (Astakhov S.Yu. et al., 2010, Ioshin I.E., 2012, Johnson MW, 2009, Lobo C., 2012, 2014, Mentes J. et al ., 2003, Rey S., Damico DJ 2002, et al.).
Purpose. Analysis of the results of the state of the retina of the macular region after phacoemulsification of age-related cataract with IOL implantation performed on both eyes, in order to justify the timing of the operation on the second eye.
Materials and methods. A statistical analysis of the results of 93 patients (186 eyes) with bilateral age-related cataract after phacoemulsification in two eyes, performed at different intervals between operations: the 1st group - (1-5 days, n = 58 eyes), 2- I - (1-2 weeks, n = 60 eyes), 3rd (3-4 weeks, n = 68 eyes). Before surgical treatment, the average visual acuity with correction in the first eye was 0.39 ± 0.05, in the second - 0.42 ± 0.05.
All patients underwent optical coherence tomography (device “Optovue” of the company “OPTOVUE”, USA) according to the scanning protocol “Raster” and partially (thickness of the retina in the center and volume of the macula in the 5-mm zone) “Retina map” before the operation, after 1 2.4, 12 weeks after surgery.
The standard scheme of instillations in the first week after surgery included an antibiotic, a glucocorticoid, one of the NSAID preparations. Further, the instillation of NSAIDs continued until one month after surgery.
Results. Patients were under ophthalmologic control before surgery, 1, 2, 4, 12 weeks after surgery. The postoperative period in patients both after the first and second eyes was reac-

tive. The average visual acuity on the first day after surgery was 0.94 ± 0.05 in the first and 0.92 ± 0.06 in the second eye, regardless of the time between operations
Studies of the retina before the operation showed average numerical values of its thickness on the first operated eye in the center 272 ± 4.0 μm, the volume of the retina in the 5 mm zone - 5.628 ± 0.07 mm³, on the second eye in the central zone 269 ± 8.0 μm, the volume of the retina in the area of 5 mm - 5.610 ± 0.07 mm³. After the operation, in all 3 groups of patients, tomographic indices after 1,2,4,12 weeks remained practically unchanged from the preoperative level. In no case was there any increase in the thickness of the retina in the center by more than 10 microns (the difference is not statistically significant (p> 0.05)).
Conclusion. The high level of surgical technology and medical support of phacoemulsification minimized the risk of development of retinal edema of the macular area, as evidenced by optical coherent tomography data from patients operated on two eyes at different times (after 1-5 days, 1-2 and 3-4 weeks after surgery on the first eye) and tracked up to 3 months after surgery.The results can be taken into account when choosing the intervals between operations on two eyes with bilateral age-related cataract.

ORGANSAVE TREATMENT OF CHOROIDAL MELANOMAS USING TRANSPUPILLARY THERMOTHERAPY

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The choroidal malignant tumor, such as melanoma, is the most frequent intraocular tumor and comprises 80-90%. There is marked rejuvenation of this disease in the last decades and in 9,8% of cases occur in patients under 30 years of age. Methods for maintenance of the body allow you to keep an eye on both cosmetic and functional point of view, and thus facilitate the patient's medical-social adaptation, improving the quality of life. One of the most widely used in the world ophthalmology in small and medium-sized choroidal melanoma is the transpupillary therapeutic thermotherapy.
PURPOSE: Organsave treatment of choroidal melanomas using transpupillary thermotherapy
METHODS: In our clinic this method has been started since September of this year and 09.2018-11-2018. 4 patients were treated with small and medium-sized choroidal melanoma (J.Shields, 1983), height - 2,7-4,7 mm, and base 6,8-8,4m. Of these, 3 patients were primary and 1 patient - after the brachytherapy. Transpupillary thermotherapy was performed with the IRIDEX-SL 810 nm wave laser with a power range of 400-700mBt.
RESULTS: During 2-2.5 months in 3 patients (75%) - was achieved 35-40% decrease of the tumor compared to the initial size, in 1 patient (25%) - size stabilized but the blood circulation in the nourish blood vessel decreased. Consequently, in 3 patients (75%) there was 15-20% decrease tumor blood speed and avascularization was achieved in 1 patient (25%). Patients continue to be under active dynamic follow up.
CONCLUSIONS: Our clinical data, once more, confirm the efficacy of transpupillary thermotherapy for local control over small and medium-sized choroidal melanomas.

THE APPLICATION OF LIGHT-FILTER POINTS IN THE PREVENTION OF THE DEVELOPMENT AND PROGRESSION OF RETINOPATHY OF THE DISABILITIES. COMPARATIVE CHARACTERISTICS OF THE PROGRESSION OF RETINOPATHY OF PREMATURES UNDER SUSPENDED IN ACCORDANCE TO SEASONAL PERIODS (PRELIMINARY RESULTS)

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Preterm retinopathy (PH) is a severe vasoproliferative disease affecting the immature retinal vascular system in premature babies.
Purpose. To study the method of preventing the development of retinopathy of premature babies with the use of filter points at the stage of nursing and evaluate the results obtained. To study the effect of bright sunlight on the immature retina of a premature baby, to study the effect of light at different periods depending on the manifestation of solar activity.
Material and methods. This method was used for 1 year on the basis of the Perinatal Center of the Rostov Region and for 2 years on the basis of the ophthalmology department of the Rostov Regional Children's Clinical Hospital. A group of patients was selected for the study - 50 children (100 eyes) from 26.5 to 36 weeks of gestational age and birth weight from 650 to 2650 grams. All children were divided into 2 groups - the main and the control group of 25 children (50 eyes) each. From the moment of birth and until the retina of the retina or regression of the disease after the surgical laser treatment, the patients of the main group used goggles with red light filters. For the study period, the patient group was divided into three subgroups, according to the manifestation of solar activity (January-April, May-August, September-December).
Results. Preliminary data showed that the use of protective glasses with red light filters, while observing all the basic rules of nursing premature babies, reduced the development of retinopathy of premature babies by 16% and the need for laser treatment by 20%. The greatest number of PHs with the largest number of surgical interventions, as well as adverse outcomes (vitreoretinal surgery) were detected in the second season (May-August), in which the greatest solar activity was observed. As a percentage, the largest number of cases of PH was detected during this period and amounted to 59.0% in 2016 and 61.1% in 2017, while the data for the years are comparable.
Conclusion. To prevent the development of threshold stages of PH, the use of surgical treatment and the development of adverse outcomes, it is necessary to use preventive measures that reduce the negative impact of bright daylight, artificial light, as well as the light of diagnostic equipment. The occluder light filter method is the first method of ophthalmologic prevention of the onset and development of retinopathy of prematurity, keeping the retina intact, allowing it to develop in light conditions close to the natural intrauterine from the moment of premature to natural birth of the child. (patent application for the invention of the Russian Federation №2016152649,2018108355 priority from 12.29.2016,06.03.2018 the authors Epihin A.N., Ushnikova O.A.).

ELECTROPHYSIOLOGICAL METHODS OF INVESTIGATION IN OPHTHALMOLOGY

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The primary objective of the electrophysiologic examination is to assess the function of the visual pathway from the photoreceptors of the retina to the visual cortex of the brain.
The electrodiagnostic tests are the following:
1. Electroretinography (ERG) is an electric potential generated by retina in response to brief stimulus of light. ERG is a test used to detect abnormal function in the retina. Specifically, this test examines the function of the light-sensitive cells of the eye (the photoreceptors), and several other cells, such as bipolar, ganglion, amacrine cells.
2. visually evoked potential (VEP) refer to electrical potentials, initiated by brief visual stimuli, which are recorded from the scalp overlying visual cortex. VEPs are used primarily to measure the functional integrity of the visual pathways from retina via the optic nerves to the visual cortex of the brain.
4. The electro-oculogram (EOG): EOG is used to check the integrity of the pigment epithelium.
Indicative eye diseases where electrodiagnostic tests are important for the clinical approach are the following: Retinal dystrophies such as retinitis pigmentosa, congenital amaurosis by Leber, the chorioeideremia, congenital retinoschisi, the syndrome S cones, the cones dystrophy, Stargardt disease, syndrome Usher, congenital stationary nyktalopia, Best disease. In addition electrophysiological examination is important for diagnosing eye diseases which are not genetically determined, such as toxic retinopathy, amblyopia, optic nerve atrophy…

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