ABSTRACTS

TIOC 2017
TBILISI INTERNATIONAL OPTHALMOLOGY CONFERENCE

ABSTRACTS

TIOC 2017
Presbyopia is the most common visual disability of the aging eye that affects vast majority of population around their mid-40s, an estimated one billion people globally. Considering the prevalence, increased life expectancy and improvement of quality of life an increasing emphasis has been placed on the development of new surgical strategies for presbyopia correction. Various modalities are available for the refractive surgeon to choose, taking into consideration patient’s needs. Three different surgical approaches for presbyopia correction, corneal, lenticular and cilio-scleral, will be covered. The purpose of the lecture is also to provide an overview of those options that are in development stages and are likely to be available in the nearest future for the surgical management of presbyopia.
DED has a significant impact on the quality of life and health, it decreases 2-3 times the general activity of the person, the ability to work, which has become a major problem for mega companies.

DED and ophthalmosurgery. The negative effect of the results of ophthalmosurgery was confirmed, after LASIK complications developed in 27%, by 3 times more than in patients with DED. The increased risk of infections, and post-surgery complications are associated with DED. In DED patients ocular morbidity increases after the cataract surgery, - the time of splitting the tear film decreases, the number pro-inflammatory cytokines increases on the ocular surface increases, inflammation is developing. (2)

A new definition was created- Dry Eye is a multifactor disease of the tear film and ocular surface, characterized by the loss of homeostasis of the tear film, accompanied by ocular symptoms such as instability and hyperosmolarity of the tear film, inflammation and lesion to the ocular surface. The neurosensor deviation plays the main role in etiology. (3)

DED immunopathogenesis. The expression characteristic self-organized positive T-cells - intercellular adhesion molecule-1 (ICAM-1), occurs on the ocular surface, which is associated with lymphocyte- associated antigen 1 (LFA-1), as a result, pro-inflammatory cytokine (IL-1β, TNF-α, IL-17, IFN-γ) expression occurs, CD4 + T-cell infiltration in conjunctiva, death of goblet cells, squamous metaplasia, apoptosis take place. (6)

Since September 2017, on the base of the clinics Globalmed and Roniko the study of the patients was started with the purpose of detection of dry eye disease and statistical registration. We were interested in the incidence and progression of this disease in our country. The study is at the initial stage yet. Out of the 383 patients studied, DED was found in 39.1%, mostly in middle aged patients with refractive defect (72%) - 30-55 years of age - 45.3%, women (60%), urban residents (86%) and office workers (45.3%). Main complaints- dryness (48%) and burning (43.3%). Objectively hyperemia 85.2% and reduction of meniscus 67.2% was revealed. The inconsistency between complaints and objective data is noteworthy. The 20% of patients did not have any subjective complaints, 5,3% of patients examined by us have pseudophakia and all of them (100%) have DED.

Conclusion
DED is a rather common chronic disease, that negatively affects the quality of human life. DED negatively affects the results of ophthalmosurgery and is associated with postoperative complications.

Increase of DED is expected along the aging of the population, as the lifestyle will be closely linked to multiscreen technologies.

THE DRY EYE EPIDEMIC Association of Optometrists England, 2017
Presentation The Changing Landscape of Dry Eye Disease in Europe, Maurizio Rolando, MD, SOE 2017
Presentation The role of the chronic inflammation in the eye surface deseases. Dr. Elisabeth M. Messmer SOE, 2017
nol.2010;3;425-442

DRY EYE DISEASE – DEEP VIEW OF THE "SUPERFICIAL" PROBLEM
Marika Tsertsvadze. Ophthalmologist. Head of Globalmed Ophthalmology Center. Tbilisi, Georgia

According to the studies conducted in 2017, 22% of the European population have DED (2), every 3rd person has a discomfort while working at a computer (1). It is difficult to provide accurate data due to absence of consensus on diagnostic methods and limited cohort studies.

Dry eye has a significant impact on the quality of life and health, it decreases 2-3 times the general activity of the person, the ability to work, which has become a major problem for mega companies.

DED immunopathogenesis. The expression characteristic self-organized positive T-cells - intercellular adhesion molecule-1 (ICAM-1), occurs on the ocular surface, which is associated with lymphocyte- associated antigen 1 (LFA-1), as a result, pro-inflammatory cytokine (IL-1β, TNF-α, IL-17, IFN-γ) expression occurs, CD4 + T-cell infiltration in conjunctiva, death of goblet cells, squamous metaplasia, apoptosis take place. (6)

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ASTIGMATISM CORRECTION IN THE CATARACT SURGERY USING VERION SYSTEM
G. Petriashvili, N. Nikolaishvili, A. Apulava. "Aversi Clinic", Tbilisi, Georgia

Purpose: today in modern ophthalmology the accent is made on the results of refraction. Demand is created on achieving sharp eyesight without correction by surgical operation on cataract by using every resources of an eye. There are many occasions where a person is living with astigmatism disease, accustomed with his/her eyesight and does not know that he/she will have much better eyesight after a correction of astigmatism! After a surgical operation of cataract turns into "compensated" astigmatism and because of that its correction is necessary.

Method: Astigmatism correction in the cataract surgery is made by using VERION system. Preoperational and intra operational procedures are essential for the final results. Using manual markers are not necessary during using VERION device; VERION shows a location of incision and eye lenses.

Conclusion: by VERION system we can individually choose the right operation plan for each patient (choose a number and model of the lenses, location of IOL and incision), this is exactly what enables us to achieve good eyesight after an operation.

APPLICATION OF LANDERS TEMPORARYKERATOPROTHESIS IN COMPLICATED SURGICAL CASES: DAVINCI TEAM EXPERIENCE
Tekla Mamageivili MD, Ana Vachiberidze MD, Nikoloz Labauri MD.FVRS Davinci Eye Clinic, Tbilisi, Georgia

Purpose: To present case series of different complicated scenarios, where application of temporary keratoprosthesis (tKpro) is mandatory to temporarily replace the opaque cornea until surgery is ongoing onto the posterior segment and also it is useful for cases where autotransplantation is performed.
ВНЕДРЕНИЕ НОВОГО МЕТОДА В ДИАГНОСТИКЕ КЕРАТОКОНУСА.

Медицинский центр «Шенгавит» Центр лазерной коррекции зрения. Ереван, Республика Армения. Д.м.н, Зильфян А.А.

Введение

Несмотря на то, что в мире выполняются многочисленные исследования с целью диагностики кератоконуса, точный механизм возникновения его неизвестен. В настоящее время, кератоконус считается многофакторным нарушением, вызванным сочетанием генетических факторов с воздействием окружающей среды. Ряд последних исследований показал ведущую роль интерлейкина-6 и матриксной металлопротеиназы-9 в развитии этого заболевания.

Цель и задачи

Целью данного исследования является выявление корреляции кератоконуса с наличием повышенного содержания матриксной металлопротеиназы-9 в слёзной жидкости.

Материал и методы

Благодаря проведенному нами дважды замаскированного перекрёстного исследования при наличии контрольной группы пациенты обследовались по мере обращения в клинику (данный метод выборки приближается к случайной). Исследование проводилось в медицинском центре «Шенгавит», в городе Ереване, в Армении. Процедура обследования пациентов проводилась в стандартном смотровом кабинете. Уровень матриксной металлопротеиназы-9 был определён с помощью иммуноферментного анализа. Кроме того, всем пациентам был поставлен тест Ширмера. В целом, 120 пациентов (один глаз каждого пациента) были обследованы. Пациентов разделили на 3 группы: 1. Сорок (40) пациентов без какой-либо глазной патологии (в качестве контрольной группы); 2. Сорок (40) пациентов с субклинической формой кератоконуса; и 3. Сорок (40) пациентов в первой, второй и третьей стадии кератоконуса.

Результаты

В третьей группе (пациенты с явной стадией кератоконуса) высокий уровень матриксной металлопротеиназы-9 был выявлен у 37 из 40 пациентов (90%). Во второй группе (пациенты с субклиническим кератоконусом) высокий уровень матриксной металлопротеиназы-9 наблюдался у 35 пациентов из 40 (83.33%). В контрольной группе только один пациент из 40 имел повышенное содержание матриксной металлопротеиназы-9 (5%) в слёзной жидкости (3.33%).

Выводы

На основании проведенных исследований мы пришли к заключению, что слёзная жидкость у пациентов с первой по третью стадию кератоконуса, а также с субклиническим кератоконусом содержит повышенный уровень матриксной металлопротеиназы-9 по сравнению с контрольной группой. Следовательно, определение матриксной металлопротеиназы-9 в слёзной жидкости может служить методом диагностики кератоконуса. Внедрение данного исследования в клинике позволит определять наличие заболевания в субклинической и клинической стадии заболевания.

INTRODUCTION OF NEW METHOD IN DIAGNOSTICS OF KERATOCONUS

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Introduction

Although, much research has been done throughout the world for the purpose of diagnostics of keratoconus, the exact mechanism of its origin is unknown. At the present time, keratoconus is considered as a multifactorial disorder, associated to combination of genetic factor and environmental exploration. A number of latest studies have shown the leading role of interleukin-6 and matrix metalloproteinase-9 in the development of this disease.

Purpose and objectives

It is the purpose of this to identify the correlation of keratoconus in the presence of an increased content of matrix metalloproteinase-9 in tear fluid.

Material and methods

Thanks to the double-masked cross over study in the presence of control group, the patients were examined as they went to the clinic (this method of sampling is about to random sampling). The study was conducted in "Shengavit" Medical Center, in the city of Yerevan, in Armenia. The procedure of patients examination was carried out in a standard examination room. The level of matrix metalloproteinase-9 was determined by enzyme multiplied immunoassay. Additionally, all patients were tested by Schirmer test. On the whole, 120 patients (one eye of each patient) were examined. Patients were divided into 3 groups: 1. Forty (40) patients without any ocular pathology (as a control group); 2. Forty (40) patients with a subclinical keratoconus; and 3. Forty (40) patients in the first, second and third stages of keratoconus.

Results

A high level of matrix metalloproteinase-9 was detected in 37 of 40 patients (90%) in the third group (patients with the apparent stage of keratoconus). A high level of matrix metalloproteinase-9 was observed in 35 patients of 40 (83.33%) in the second group (patients with subclinical keratoconus). Only one patient of 40 had an increased content of matrix metalloproteinase-9 (5%) in tear fluid (3.33%) in the control group.

Findings

On the basis of conducted studies, we came to the conclusion that tear fluid in patients with the first to third stage of keratoconus, as well as with subclinical keratoconus, contains an increased level of matrix metalloproteinase-9 compared to the control group. Consequently, the determination of matrix metalloproteinase-9 in tear fluid can serve as a method for diagnostic of keratoconus. The introduction of this study in the clinic will determine the presence of the disease in the subclinical and clinical stage of the disease.
FERRARA RING APPLICATION IN KERATOCONUS MANAGEMENT: DAVINCI TEAM EXPERIENCE

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Abstract

PURPOSE:
To report the short-term follow-up of Ferrara intrastromal corneal ring segment (ICRS) implantation for the management of keratoconus and its relation to visual acuity improvement and corneal topographical changes.

METHODS:
Eleven keratoconic eyes, intolerant to contact lenses were implanted with one or two Ferrara rings embracing the keratoconus area. Statistical analysis included preoperative and postoperative UCDVA, BCDVA, refraction, keratometry values and corneal as well as total eye aberrations. Pentacam HR (Oculus) was used to observe K readings, pachimetry and corneal aberrations. NIDEK Optical Path Difference (OPD)-Scan II with OPD-Station software was used to assess Zernike coefficients, point spread function (PSF), and modulation transfer function (MTF). Average follow-up period was 12 months with a minimum of 3 months and a maximum of 12 months.

RESULTS:
Both the UCDVA and the BCDVA has been improved. The mean UDVA improved from 0.02 preoperatively to 0.6 postoperatively and the mean CDVA from 0.3 to 1.0, respectively. The mean preoperative spherical equivalent (SE) decreased from -5.25 D preoperatively to -1.5 D postoperatively. All keratometric parameters improved significantly. The average K1 value changed from 61.3 D to 41.7 D and the average K2 value, from 68.6 D to 42.4 D. Optical path difference also improved. Corneal tomography (Pentacam HR) showed corneal flattening greater at the central 3 mm in all eyes. Zernike coefficients, higher order aberrations, PSF and MTF improved in all cases. KC progression was observed in 1 eye and CXL has been performed 3 months later after ring implant. Neither of them had complications related to rings implants such as infection, extrusion, corneal perforation.

CONCLUSIONS:
Ferrara ICRS implantation helps KC cornea to become regular, consequently cornea flattens, stabilizes and UCDVA as well as BCDVA improves in almost all cases. If calculations and patient selection is proper this procedure is safe, reliable and may also delay the KC progression.

CORNEAL COLLAGEN CROSS-LINKING (CXL) FOR KERATOCONUS TREATMENT

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Purpose
To evaluate the efficacy and safety of keratoconus treatment with CXL with standart and hypoosmolar riboflavin - 12 years experience.

Setting
Tbilisi State Medical University, Eye Clinic “Akhali Mzera”

Methods
The treatment was performed on more than 900 eyes according to the two standard nomogram – with different radiation power (3 mW and 9 mW) and timing of exposure (30 min and 10 min). UCVA, BCVA, manifest refraction, corneal thickness and endothelial cell density were evaluated before and 1, 3, 6, 12 and 24 months after the procedures. Follow up period was more than 24 months for all cases. Solution penetration into anterior chamber was checked before the start of irradiation and to its completion (biomicroscopy).

Results
Before the procedure: UCVA – 0.06-0.2; K-readers - steep 50.5 D - 60.8 D; pachimetry - 332 – 402 μm, endothelial cell density - 2550- 2730 cells/mm2. UCVA slightly decreased during a month after the procedure and returned to initial value or slightly increased at 3 months Post Op. Corneal thickness increased with the application riboflavin solution by ±25.4 μm and was reduced by 15-18 μm after the procedure. K-readers were flattened by 1-1.5 D, endothelial cells were also slightly decreased (by 130-200 cells/mm2). Post op period was uneventful, no serious complications observed. At 4-6 months Post Op contact correction with rigid CL were performed on all the eyes.

Conclusions
CXL is an effective way to halt KC progression. Keratoconus treatment with hypoosmolar riboflavine in thin corneas has the same efficacy and safety as standard CXL procedure; it enables to expand indications of CXL. The method enables to stop KC progression, to avoid PK or DALK, gives an excellent opportunity for correction with Rigid Scleral CL after the procedure.
GALILEI VS ORBSCAN COMPARATIVE ANALYSIS
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Purpose:
To evaluate agreement in main data among the Galilei G6 (Ziemer), Orbscan IIz (Bausch & Lomb) systems.

Material and Methods:
This retrospective comparative study comprised 192 patients, among them in 72 ones undergone consecutive refractive surgery procedures, 32 – surgical treatment of keratoconus, with CCL or ISCRS implantation. The left number used as diagnostic procedures.

Results:
Mean keratometry reading was 44.30±1.49 diopters (D), 44.11±1.47 D Galilei G6 (Ziemer) and Orbscan IIz respectively. Despite a significant difference in mean keratometry (P<.001), the correlation among these three systems was strong. The maximum mean difference between two sets in simulated keratometry and astigmatism was <0.50 D.

In the evaluation of anterior best-fit-sphere (BFS) and posterior BFS, the correlation between Galilei G6 and Orbscan II was found to be 0.96 and 0.94, respectively.

Conclusion:
Despite significant differences in mean keratometry readings and anterior and posterior elevation measurements among the three systems, the keratometry readings can be used interchangeably, as this difference is not clinically significant.

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ПРЕИМУЩЕСТВА ПОЭТАПНОГО СНИЖЕНИЯ ВНУТРИГЛАЗНОГО ДАВЛЕНИЯ ПРИ ХИРУРГИИ ВТОРИЧНОЙ НЕОВАСКУЛЯРНОЙ ГЛАУКОМЫ
Рыков С.А., Новак Н.В. Национальная медицинская академия последипломного образования им. П.Л. Шупика МЗ Украины, г. Киев, Украина.

Вторичная неоваскулярная глаукома по-прежнему занимает одно из лидирующих мест среди резистентных глауком.

Известно, что консервативное лечение такой глаукомы является малоэффективным. Но и большинство предложенных хирургических методов лечения данной патологии сопровождаются серьезными осложнениями геморрагического характера.

Цель работы:
Повысить эффективность хирургического лечения вторичной неоваскулярной глаукомы путем поэтапного снижения внутриглазного давления на фоне применения анти-VEGF терапии.

Материалы и методы.
Нами предложено комбинированное лечение, включающее выполнение ГНСЭ по Козлову-Федорову с одномоментным интравитреальным введением препарата антипролиферативного действия.

В течение 2-4 недель после операции выполнялся II этап снижения внутриглазного давления – лазерная трабекулотомия в зоне экстериализации Шлемова канала.

Результаты.
По предложенной методике прооперировано 14 больных (14 глаз) с II-III стадиями глаукомы и частично открытым УПК.

Неоваскулярная глаукома у этих пациентов возникла вследствие тромбоза у в.с.

Осложнений во время операций и в послеоперационном периоде не было отмечено. Компенсация ВГД достигнута у 86% случаев в течение 6 месяцев.

На наш взгляд, предложенный метод хирургического лечения имеет следующие преимущества:
фильтрация жидкости вследствие оголения трабекулы и лимбального края десцеметовой мембраны (ГНСЭ) приводит к частичному снижению изначально высокого уровня ВГД, что предупреждает развитие интраоперационных осложнений, связанных со вскрытием глазного яблока;
экстериализация канала и удаление юкстаканаликулярной ткани трабекулы способствует дополнительной декомпрессии Шлемового канала;
ADVANTAGES OF THE GRADUAL DECREASE OF INTRAOCULAR PRESSURE IN THE SURGERY OF SECONDARY NEOVASCULAR GLAUCOMA.


Secondary neovascular glaucoma still occupies one of the leading places among resistant glaucoma. It is known that conservative treatment of such glaucoma is low-efficiency. But most of the proposed surgical methods for treating this pathology are accompanied by serious complications of hemorrhagic nature.

Work objective:
Improve efficiency of surgical treatment of secondary neovascular glaucoma by gradual reduction of intraocular pressure associated with the application of anti-VEGF therapy.

Materials and methods
It is hereby recommended combined treatment, including the implementation of non-penetrating deep sclerectomy by Kozlov-Fedorov with a single-step intravitreal administration of drug with antiproliferative action.

Within 2-4 weeks after the surgery, the II stage of reduction of intraocular pressure was done - laser trabeculotomy in the zone of externalization of the Schlemm's canal.

Results
According to the offered method, 14 patients (14 eyes) with stage II-III glaucoma and partially open anterior chamber angle were operated. Neovascular glaucoma in these patients was due to thrombosis. There were no complications during the surgery and in the postoperative period. Compensation of IOP was achieved within 6 months in 86% of cases.

In our opinion, the offered method of surgical treatment has the following advantages:
filtration of the fluid due to exposure of the trabeculae and limbal margin of descemet membrane (non-penetrating deep sclerectomy) leads to a partial decrease in the initially high level of IOP, which prevents the development of intraoperative complications associated with the opening of the eye-ball;
canal exteriorization and removal of the juxtacanalicular tissue of the trabecula contributes to an additional decompression of the Schlemm's canal;
a partial decrease in IOP after performing of non-penetrating deep sclerectomy compensates possible reactive increase pressure in the eye, as a response to intravitreal administration of the drug;
regress of newly formed vessels creates conditions for performing YAG laser trabeculotomy with the aim of creating direct filtration of fluid from the anterior chamber (two-stage sinus-trabeculotomy).

Findings
The offered combined surgical treatment of secondary neovascular glaucoma provides compensation for IOP in 86% of cases and reduces the number of hemorrhagic complications.

SURGICAL MANAGEMENT OF IRIS DEFECTS
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Purpose:
To describe the different techniques of iris suturing in different clinical scenarios.

Methods:
8 eyes of eight patients were operated. Among them are the following iris defects with different iris patterns such as iris coloboma, traumatic iris dyalisis, pupil rupture, partial aniridia, mydriasis, postoperative Urrets-Zavalia syndrome, peripheral and sectoral iridectomy. 10-0 double armed polypropylene suture is used in all cases with modified Siepser knot technique. Every patient has crossed one year Follow up period.

Results:
All patients had improvement of VA. Reduced or absent diplopia and glare. Neither of them had suturing related complications such as uveitis or secondary glaucoma.

Conclusions:
Suturing the iris defect is mandatory when one has monocular diplopia, glare or haloes. To be familiar with all kind of techniques to suture iris is necessary for the operating surgeon to achieve optimal functional and anatomical outcomes.
ფერადი გარსის დეფექტების ქირურგიული მკურნალობა

თვალის კლინიკა "ახალი მზერა". ღონისძიება გრიგოლ ქამუშაძე, თბილისი. საქართველო

მიზანი:
აღვწეროთ სხვადასხვა მეთოდები ფერადი გარსის მიკროქირურგიული რეკონსტრუქციის გარეშეგანგრეული კლინიკური შემთხვევებისთვის.

მეთოდი:
ოპერაცია ჩატარდა რვა პაციენტს რვა თვალზე. მათ შორის იყო ფერადი გარსის სხვადასხვა დეფექტები, როგორიც არის:
ფერადი გარსის კოლობომა, ფერადი გარსის ტრამვული დიალიზი, ტრამვისშემდგომი გაგლეჯილი ფერადი გარსი, ნაწილობრივ ანირიდია, პოსტტრამვული მიდრიაზი, პოსტოპერაციული "ურეთს ზავალია" სინდრომი, პერიფერიული და სექტორული ირიდექტომია.

ქირურგიული ჩარევის დროს ყველა პაციენტთან გამოყენებულ იქნა 10.0 პოლიპროფილენის ძაფი მოდიფიცირებული სიფსის კვანძით. პაციენტები იმყოფებოდნენ მდგომარეობით ერთი წლის განმავლობაში.

შედეგები:
ყველა პაციენტს აღენიშნებოდა მხედველობის გაუმჯობესება, შემცირება და გაქრობა ისეთი ჩივილების, როგორიც არის მონოკულარული დიპლოპია, ჰალო და სიკაშკაშე.
არცერთ პაციენტთან არ გამოვლინდა პოსტოპერაციული გართულებები, როგორც არის უვეიტი ან მეორადი გლაუკომა.

დასკვნა:
ფერადი გარსის დეფექტის აღდგენა წარმოადგენს აუცილებლობას, თუ პაციენტს აღენიშნება ისეთი ჩივილები, როგორიც არის მონოკულარული დიპლოპია, ჰალო და სიკაშკაშე.
ფერადი გარსის მიკროქირურგიული რეკონსტრუქციის გარეშე გამოყენება ქირურგ ფლობდეს მაღალ ქირურგიულ უნარებს, აუცილებელია იცოდეს ფერადი გარსის მიკროქირურგიული რეკონსტრუქციის ყველა ტიპის ტექნიკა, რომ მივაღწიოთ სხვა ფუნქციურ და ანატომიურ შედეგებს.

ENDOILLUMINATOR-ASSISTED SCLERAL BUCKLING IN THE TREATMENT OF PRIMARY RHEGMATOGONOUS RETINAL DETACHMENT

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Introduction:
Primary retinal detachment, complicated by proliferative vitreoretinopathy of grade C is the actual problem in the ophthalmology despite the use of many modern vitreoretinal surgical techniques.

There are many surgical methods commonly used for repair of primary rhegmatogenous retinal detachment including pars plana vitrectomy (PPV) with or without gas or silicone oil tamponade, pneumoretinocerclage, scleral buckling, including endoilluminator-assisted scleral buckling or a combination of these procedures. Despite the advances in surgical techniques and instrumentation the anatomic and functional results stay still not as impressive and often the patients requiring multiple procedures.

Purpose:
To evaluate the efficiency and the safety of surgical treatment of primary rhegmatogenous retinal detachment (RRD) with 23 G vitrectomy plus encircling band and endoilluminator-assisted scleral buckling (EASB).

Methods:
Fifty-six eyes of 56 patients (37 males and 19 females) with primary RRD complicated by proliferative vitreoretinopathy ≤C. All patients were divided into two groups: 44 eyes were with “macula-off” RRD (78.5 %) and 11 eyes were with “macula-on” RRD (21.5 %) were evaluated during 2-year period (2014-2015). Baseline characteristics including age, etiological diagnosis, duration of detachment, preoperative visual acuity (VA), lens status and PVR grade were recorded. All patients underwent 23G vitrectomy plus encircling band and endoilluminator-assisted scleral buckling after retinal tear visualization in 32 patients (69,9 %). Successful break determination was followed by standard scleral buckling under surgical microscope with a non-contact wide angle viewing system. Endotamponade was performed in 93.6% patients: 48.5% by gas (SF6), 27.7% by silicon oil. Patients were assessed for anatomical retinal attachment and VA change at 1st day, 1 and 4 weeks, 3 months and 3 monthly there after till 2 years.

Results:
At least one intraoperative break could be localized in 29 of 56 (48,2 %) eyes. Median age of these patients was 46 years (range: 17-72). 38 eyes (67.5 %) were phakic, 18 (32.5 %) were pseudophakic. Good final visual prognosis was significantly associated with initial visual acuity ≥ 20/200 and “macula-on” retinal detachment. Anatomical success (attachment of retina) was achieved in 81.6 % eyes with EASB and in 83.3 % eyes with cerclage and 23G vitrectomy. All eyes remained attached at the end of 2 years. Significant improvement in mean visual acuity (VA) was achieved at the end of follow-up in 91.7 % cases.

Conclusions:
Vitrectomy plus equatorial cerclage and endoilluminator-assisted scleral buckling can be considered an effective surgical method in primary rhegmatogenous retinal detachment (RRD) cases.
PARS PLANA VICTRECTOMY DURING DETACHMENT OF RETINA. GAS OR SILICON?

G. Petriashvili, N. Nikolaishvili, A. Apulava. “Aversi Clinic”, Tbilisi, Georgia

Purpose:
Retina attachment and stopping eyesight decline or recovering eyesight.

Method:
surgical operation is the only one way to stop retina deterioration, which may be divided in two categories:
1. Scler Cerklage
2. Pneumatic retinopexis (gas or silicon)
3. Vicrectomy

During vicrectomy we use Perfluorocarbon liquid for retina correction. Finally the air (SF6 or C3F8) or silicon oil remains in an eyeball. We mostly choose the air that lasts long time and we are doing 360˚– retinopexis

Results:
Vicrectomy leads us to the success in 80–90 % cases.

Conclusion:
air is absorbed and another operation is not required. Silicon extrusion is required in case of using silicon. Sharpness of eyesight is higher when air is inside an eyeball rather than silicon. After extrusion of silicon retina may deteriorate. In many occasions silicon is emusificated and penetrates an anterior chamber, which increases the pressure inside the eyeball. It shall be noted that after vicrectomy progressive cataract develops in every patient above 50 and because of that it is important to conduct a combined operation.
Preoperative best corrected visual acuity (BCVA) ranged from hand motion to 20/200, postoperative BCVA improved in 12 eyes, did not change in 6 eyes. Retinal reattachment with silicone oil tamponade was achieved in all 18 eyes. Complications: iatrogenic retinal breaks were in 4 patient, subretinal PFO was identified in 3 eyes intraoperatively.

Conclusion:
The recurrent retinal detachment in patients with single eye can be successfully treated with combined scleral buckle surgery and pars plana vitrectomy. Silicone oil removal in patient’s single eye should be strictly individual on account of high risk recurrent retinal detachment. Supporting (delicate) encircling band with scleral buckling procedures are the treatment of choice for the majority of recurrent retinal detachment, complicated by PVR. The patient’s perception to visual acuity and anatomic condition even after successful repeated surgery can deeply affect quality of life and psychological status.

PAST, MODERN & FUTURE ANTI-NEOVASCUlar AGENTS IN TREATMENT OF RETINAL VASCULAR DISEASES
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Angiogenesis is a clue process for tissue development and function, both in normal and pathological conditions. This process is regulated by multiple molecular factors. Retinochoroidal vascular diseases and neovascularization process is the leading causes of blindness in the developed world. One of the most potent is vascular endothelial growth factor (VEGF) and its receptor (VEGFR) system is well known and studied for many years to treat such diseases. The future of treatment of retinochoroidal vascular diseases, particularly AMD, has become more exciting due to agents such as PDGF antagonists. Several different therapies are currently under consideration for the aforementioned disorders. In the following presentation, agents targeting platelet-derived growth factor (PDGF) are discussed as a potential therapeutic option for retinochoroidal vascular diseases. PDGF plays an important role in the angiogenesis cascade that is activated in retinochoroidal vascular diseases. The mechanism of action, side effects, efficacy, and the potential synergistic role of these agents in combination with other treatment options is discussed. The future of treatment of retinochoroidal vascular diseases, particularly AMD, has become more exciting due to agents such as PDGF antagonists.
Laser treatment remains an effective method of treatment of progressive retinopathy of prematurity. Despite the treatment administered, complications were detected in 17 patients (5.8 ± 1.4% of cases). A positive result of treatment was achieved in 281 patients (95.3 ± 1.2% of cases). In 4.7 ± 1.2% (14 patients) the disease progressed to 4a-4b stage of the disease, despite the treatment administered. Complications were detected in 17 patients (5.8 ± 1.4% of cases), out of which cataracts were diagnosed in 2 children, the epiretinal membrane was detected in 7 children and partial hemophthalmia in 4 children. During the further observation, 9 patients (3.1 ± 1.0%) died due to a worsening of the somatic condition not associated with the treatment of retinopathy of prematurity.

CONCLUSION:

The diagnostics and treatment were carried out according to the international classification (ICROP) and ETROP criteria. Indications for Pan Retinal laser Photocoagulation (maximum density and high intensity) were the presence of a “pre-threshold” stage of Type 1 (Zone I, ROP at any stage, less than the threshold; Zone II, ROP stage 2 without the symptom “plus disease”; Zone II, ROP stage 3 with the symptom “plus disease”, but less than the criteria of the threshold disease), the “threshold” stage of the active phase of the disease - Stage III ROP in Zone 1 or 2, with the duration of 5 common hours or 8 total hours with the symptom “plus disease”), posterior aggressive retinopathy of prematurity (AP-ROP). All newborns underwent laser coagulation of the avascular retina within 48-72 hours after establishing the diagnosis.

RESULTS:

A positive result of treatment was achieved in 281 patients (95.3 ± 1.2% of cases). In 4.7 ± 1.2% (14 patients) the disease progressed to 4a-4b stage of the disease, despite the treatment administered. Complications were detected in 17 patients (5.8 ± 1.4% of cases), out of which cataracts were diagnosed in 2 children, the epiretinal membrane was detected in 7 children and partial hemophthalmia in 4 children. During the further observation, 9 patients (3.1 ± 1.0%) died due to a worsening of the somatic condition not associated with the treatment of retinopathy of prematurity.

CONCLUSION:

A positive result of treatment was achieved in 281 patients (95.3 ± 1.2% of cases). In 4.7 ± 1.2% (14 patients) the disease progressed to 4a-4b stage of the disease, despite the treatment administered. Complications were detected in 17 patients (5.8 ± 1.4% of cases). Laser treatment remains an effective method of treatment of progressive retinopathy of prematurity.
Распространенность ретинопатии недоношенных в Одесской области (2009-2016)
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Введение:
Ретинопатия недоношенных (РН) занимает одно из ведущих мест среди причин детской слепоты и слабовидения и характеризуется аномальным сосудистым развитием сетчатки у недоношенных детей. Распространенность заболевания в разных странах мира, по данным литературы варьирует в пределах 15 – 36,5% от общего числа детей группы риска. Учитывая опыт стран, в которых проблемой РН занимаются более 10 лет, в Украине прогнозировалось 200 – 250 случаев слепоты каждый год. Однако в настоящее время статистические данные по данной проблематике в Украине весьма ограничены.

Цель:
Проанализировать встречаемость РН у детей с массой тела при рождении до 2500 г и гестационным возрастом до 35 недель в Одесской области (2009 -2016 г.)

Материал и методы:

Результаты:
В период с января 2009 г. по декабрь 2015 г. в Одесской области родилось 202130 детей. Из них, с массой тела до 2500 г 11291 детей.
Показатели рождаемости недоношенных детей группы риска за 2009 – 2015 гг. не различались, при усреднении результатов использовалась модель фиксированных эффектов. Среднее значение показателя рождаемости недоношенных детей группы риска, составило 5,6% (95% ДИ 5,5% - 5,7%).
За время исследования было осмотрено 2682 младенца. При этом с каждым годом число обследованных детей увеличивалось и в 2016 возрастло практически в два раза, по сравнению с 2009 годом. С усреднением количества осмотренных детей на протяжении срока наблюдения возросло число выявленных случаев РН, при этом частота патологии колебалась в пределах от 10,0% в 2009 г. до 43,8% в 2011 г. При проверке данных на гетерогенность выявлено статистически значимое различие (степень гетерогенности I²=94,2%, p<0,001). Среднее значение частоты случаев РН за 2009–2016 гг. составило 24,7% (95% ДИ 18,2% – 31,7%).
Частоты выявления случаев первой и второй стадии РН за 2009–2016 гг. существенно различались, при усреднении результатов использовалась модель случайных эффектов. Среднее значение частоты случаев первой и второй стадии РН за 2009–2016 гг. составило 19,4% (95% ДИ 13,6%–25,9%). Среднее значение частоты случаев, при которых, понадобилось лазерное лечение (3 стадия, АЗ – РН) за 2009–2016 гг. составило 4,9% (95% ДИ 3,6% – 6,8%). При этом 3 стадия РН выявлена в 3,7% случаев (95% ДИ 2,5%–5,0%), Агрессивная задняя РН в 1,2% случаев (95% ДИ 0,6%–2,1%). После введения систематического скрининга, частота РН на ранней стадии возрастает (p<0,001) и если в 2009 г. среди случаев выявленной ретинопатии РН 1–2 составило 47,6%, то в 2016 г. – 87,9%.
Заключение:
Частота выявленных случаев РН за 2009–2016 гг. в Одесской области отличалась высокой степенью гетерогенности (показатель I²=94,2%, p<0,001) и, в среднем, составила 24,7% (95% ДИ 18,2% – 31,7%). Из них, ретинопатия недоношенных 1 – 2 стадии в 19,4% случаев (95% ДИ 13,6%–25,9%), 3 стадия РН в 3,7% случаев (95% ДИ 2,5%–5,0%). Агрессивная задняя РН в 1,2% случаев (95% ДИ 0,6%–2,1%).

Превалирование ретинопатии предмaturityности в Одессе (2009-2016)
S.V. Katsan, E.S. Zaichko. The Filatov Institute of Eye Diseases and Tissue Therapy of the National Academy of Medical Sciences of Ukraine, Odessa, Ukraine.

Introduction:
Retinopathy of prematurity (ROP) is one of the leading causes of children’s blindness and poor vision and is characterized by abnormal vascular development of the retina in premature infants. The prevalence of the disease in different countries of the world, according to the literature varies within 15 - 36,5% of the total number of children in the risk group. Taking into consideration the experience of the countries in which the problem of ROP has been dealt with for more than 10 years, in Ukraine, there were predicted 200 to 250 cases of blindness per year. However, at present the statistical data on this problem in Ukraine are rather limited.

Goal:
Analyze the occurrence of ROP in children with birth weight up to 2500 g and gestational age up to 35 weeks in the Odessa region (2009 -2016)

Material and methods:
A retrospective study of 2,682 premature infants was conducted at the Filatov Institute from 2009 to 2016. Criteria for selecting of the children at risk were weight at birth to 2500 g. and gestational age up to 35 weeks. Ophthalmoscopy in dynamics was repeated at intervals of two weeks until the completion of vasculogenesis of the retina in the absence of signs of disease, or once a week in the formation of the first - second stage of ROP. Registration of the examination data was carried out according to the recommendations.
of the International Committee on Retinopathy of Prematurity using the modern ROP classification. The analysis was carried out in the packages MedCalc v.16.8.4 (MedCalc Software bvba, 1993-2016) and MedStat (Yu.E. Lyakh, V.G Guryanov, 2004 - 2011).

RESULTS:
In the period from January 2009 to December 2015 in the Odessa region there were born 202130 children, 11,291 children out of these with a body weight of up to 2500 g. During the study there were examined 2,682 infants. At the same time, the number of examined children was increasing every year and practically doubled in 2016, as compared to 2009. With the increase in the number of the examined children, during the observation period, the number of detection of ROP cases increased, while the pathology frequency ranged from 10.0% in 2009 to 43.8% in 2011. When inspecting the data for heterogeneity, a statistically significant difference was found (Degree of heterogeneity I² = 94.2%, p <0.001). The average value of the incidence of ROP in 2009-2016 was 24.7% (95% CI 18.2% - 31.7%).

Indices of the birth rate of premature infants at risk in 2009 - 2015 did not differ, with the averaging of the results the model of fixed effects was used. The average value of the birth rate of premature infants at risk was 5.6% (95% CI 5.5% - 5.7%).

During the study there were examined 2,682 infants. At the same time, the number of examined children was increasing every year and practically doubled in 2016, as compared to 2009. With the increase in the number of the examined children, during the observation period, the number of detection of ROP cases increased, while the pathology frequency ranged from 10.0% in 2009 to 43.8% in 2011. When inspecting the data for heterogeneity, a statistically significant difference was found (Degree of heterogeneity I² = 94.2%, p <0.001). The average value of the incidence of ROP in 2009-2016 was 24.7% (95% CI 18.2% - 31.7%).

Aggressive posterior ROP in 1.2% of cases (95% CI 0.6% - 2.1%). After the introduction of systematic screening, the frequency of ROP at an early stage increases (p <0.001) and if in 2009 among the cases of detected retinopathy ROP 1-2 was 47.6%, in 2016 it was 87.9%.

Conclusion:
The frequency of detected cases of ROP in 2009-2016 in the Odessa region was characterized by a high degree of heterogeneity (Value I² = 94.2%, p <0.001) and, on average, made 24.7% (95% CI 18.2% - 31.7%). Out of these, retinopathy of prematurity of stage 1 - 2 in 19.4% of cases (95% CI 13.6% - 25.9%), ROP stage 3 was detected in 3.7% of cases (95% CI 2.5% - 5.0%). Aggressive posterior ROP was detected in 1.2% of cases (95% CI 0.6% - 2.1%).

REFRACTIVE OUTCOMES – AFTER THE BEVACIZUMAB MONOTHERAPY FOR ROP
Lana Datushvili, Ophthalmologist. Clinic "L&J", Kutaisi, Georgia

Introduction: We observe children who were treated with Bevacizumab (Avastin) for type 1 ROP. We examined 50 patients (born in 2011, 2012, 2013 and 2014), gestational age - from 25 to 33 weeks, birth weights from 700 to 2000 grams. Among them:
<table>
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<tr>
<th>Year of birth</th>
<th>2011</th>
<th>2012</th>
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<th>2014</th>
<th>2015</th>
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<tr>
<td>The number of patients</td>
<td>5</td>
<td>6</td>
<td>10</td>
<td>2</td>
<td>27</td>
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The observation was conducted in two clinics - in the 'Clinic LJ' - Kutaisi and in 'IQ clinic'-Tbilisi.

Results and Discussion:
Research revealed the following: during cycloplegy
20 - patient had the low hyperopia ≤ 2.0 D
15 - hyperopic astigmatism – between 0.5 to 2.0D – AX from 70° to 130°
10 - low myopia ≤ 2.0d and myopic astigmatism from -0.5 to 2.0D AX from 20° to 160°
10 - anisometropy with high myopia ≤ 9.0 D.

10 of these 50 patients – had esotropia, 1 child was operated by esotropia.

Myopic and anisopetropic changes were mostly observed in children with gestational age 30-32, birth weight ≤1500, 3 of them were twins.

We found that – after treatment with Avastin - 70% of treated infants have mild or moderate level of hypermetropia or hypermetropic astigmatism.

Conclusion:
The goal of our research and future plan – is to provide more extensive information on the ocular status of Bevacizumab (Avastin) treated infants including - documentation the fundus before and after treatment (with a Retinal camera) and long term observation: refractive and fundus changes. We need more coordination between neonatologists, pediatricians, neurologists, and ophthalmologists in order to estimate the optimal treatment scheme and the future social status of premature infants.

Acknowledgement:
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FEATURES OF BLOOD CELLS’ FATTY ACIDS CONTENT IN PATIENTS WITH DIABETIC RETINOPATHY

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The problem of developing effective regimens for the treatment of diabetes retinopathy (DR) continues to be relevant and includes the study of hemorheological disorders in type 2 diabetes. The metabolism of fatty acids (FA) has a significant effect on the structure and physical properties of cell membranes (LC).

The goal is to compare the FA composition in the blood cells of patients with DR, and to determine the most informative model for studying the structural features of the body cells during of lipid metabolism disorders.

Materials and methods:
Blood plasma, leukocytes, platelet-rich plasma and erythrocytes were investigated in 16 patients of the ophthalmological department (the ratio of women and men 8/8), whose average age was 56.9±9.2 years and who had been diagnosed with proliferative stage DR (one or both eyes).

The average duration of type 2 diabetes in this group was 16.6±3.7 years, the blood glucose level at the research moment was 11.55±1.09 mmol/l. The indices of identical in age and sex healthy donors were studied for comparison; the level of glucose of venous blood in them was 4.57±1.9 mmol/l. The FA composition was studied by gas chromatography. Patients were selected with an error of deviation of the FA content in substrates no more than ±10 %.

Results and discussion:
Analysis of the FA content and spectrum showed a significant difference in erythrocytes and platelets in patients with DR compared with a group of healthy donors. Calculations of the Spearman rank correlation coefficient found a high correlation of erythrocyte and healthy donor indices r=0.97 (p<0.001).

The FA concentration and content in the patients with metabolic shifts plasma is constantly changing, so that the study of the FA spectrum in plasma complicates the interpretation of the data. The study of FA in cell membranes is more appropriate. We measured the FA content in healthy donor’s different blood cells and determined the most informative environment for the FA metabolism analysis.

The methodological features of the substrate taking showed that the cell membrane which maximally isolated from the plasma can be obtained only in erythrocytes. We found that a decrease in the arachidonic FA in erythrocytes and platelets is one of the most significant signs of impaired metabolism of FA in patients with DR.

Arachidonic acid is found in large numbers in platelets and performs one of the most important functions of platelets when they are activated. The study of the processes and mechanisms of changing the structure of the membrane, accompanied by fluctuations of the arachidonic FA is impractical to conduct on platelets. Mix of the pathogenetic mechanisms can influence the interpretation of the results.

Conclusion:
We think that the erythrocyte membranes FA study is the most methodologically correct in investigation the metabolism of LC in comparing all blood cells.
В нашем исследовании сформировано 4 группы пациентов (80 глаз):

Контрольная группа — пациенты, перенесшие операцию «фронтальное подвешивание»

Пациенты, получавшие в раннем послеоперационном периоде электромиостимуляцию в течение 15 дней, продолжительностью 6 минут, с силой тока 500 мкА. Повторный курс проводится спустя 3 месяца

Пациенты, получавшие Неоритм в раннем послеоперационном периоде: 10mg № 15 в/м инъекций, далее по 1 таб (20 mg)× 2 раза в день — в течение месяца. Спустя 3 месяца курс повторяется

Основная группа — пациенты, получавшие в послеоперационном периоде электромиостимуляцию леватора верхнего века параллельно с лечением препаратом Неоритм

В отдаленном послеоперационном периоде провисание силиконовой ленты и как следствие — ухудшение результата наблюдалось в контрольной группе в 5 случаях (25%), в I группе — в 2 случаях (10%), во II группе — в 3 случаях (15%), в основной группе стойкий результат сохранялся во всех случаях.

Таким образом, мы можем утверждать, что предлагаемый нами комплексный подход с использованием хирургического, физиотерапевтического и медикаментозного лечения позволяет добиться высокоэффективных и стойких результатов лечения пациентов с блефароптозом при снижении или отсутствии функции леватора.
Neurologist Denny-Brown back in 1955 demonstrated that it is enough for the muscle fiber to contract for 6 minutes daily for being not
muscular tone [6,12,19].

The main cause of development of blepharoptosis is hypoplasia of the upper eyelid levator and weakening of its tone. The dystrophic
muscle, maintaining the correct contour of the eyelids, increasing the contractile function of the levator, and preserving the cosmetic
function and the ptosis of the upper eyelid [4,5,16].

As early as in 1831, Hunt drew attention to the ability of the frontal muscle, like a levator, to lift the upper eyelid [5]. Reduction or
absence of the function of the levator is an indication for suspension surgery, in which the function of the levator is imposed on the
patient, visual acuity and a number of other criteria. Nevertheless, the main criteria are the degree of preservation of the levator
function and the ptosis of the upper eyelid [4,5,16].

As early as in 1831, Hunt drew attention to the ability of the frontal muscle, like a levator, to lift the upper eyelid [5]. Reduction or
absence of the function of the levator is an indication for suspension surgery, in which the function of the levator is imposed on the
frontal muscle with the help of various auto- and allografts [1,8,13,14]. The technique of the operation was first proposed by E. Payr in
1909 [10], while a deep fascia of the thigh was used as a suspending material. [3,5]. At present, this technique is not used because of
suspending materials were developed [2,5,9,15].

The aim of the study, proposed by us, is to develop an improved method for eliminating blepharoptosis in the absence or weak function

In our study, in the surgical treatment of ptosis of the upper eyelid, an operation of “frontal suspension” using a silicone tape is per
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The only factor acting directly on the muscle tone is electromyostimulation, i.e. strengthening the tone of the muscles by stimulating them with an electric current. Current impulses, acting on excitable muscular and neural tissue, cause muscle fiber contraction, as well as muscle strengthening \[6,12,17\].

The eyelid zone is very sensitive to electromyostimulation. Due to the proximity of the periosteum, the use of impulses of a rectangular, sinusoidal and many other forms causes severe pain sensations. Therefore, for procedures in the periocular area, only devices with neural-like impulses close to physiological ones can be used. The multichannel myostimulator Neorhythm with a physiological impulse (neuroimpulse), which was developed specifically to restore the atrophied muscles of the cosmonauts (rehabilitation after weightlessness) meets all these requirements.

In addition to the effect of devices on weakened muscle fibers, there are also medications increasing the muscle tone. As it is known, anticholinesterase drugs restore the contractile activity of a number of muscle fibers. Therefore, conditions are created to prevent muscle atrophy due to inactivity \[18, 19\]. In our study, patients who underwent the operation of “frontal suspension” were prescribed an anticholinesterase drug Neuromidine, which increases the contractile activity of muscles with the effect of acetylcholine and other mediators: adrenaline, serotonin, histamine and oxytocin, directly affecting myofibrils in this way.

Four groups of patients (80 eyes) were formed in our study:

- Control group - patients who underwent the operation of “frontal suspension”
- Patients receiving the electromyostimulation in the early postoperative period for 15 days, lasting 6 minutes, with current strength of 500 μA. The repeated course is conducted in 3 months.
- Patients receiving Neuromidine in early postoperative period: 10mg #15 i/m injections, then 1 tablet (20 mg) 2 times a day - for a month. The course is repeated in 3 months,
- The main group - patients receiving the electromyostimulation of the left upper eyelid levator in the postoperative period in combination with the treatment with Neuromidine.

In the long-term postoperative period, the sagging of the silicone tape, and as a result, the deterioration of the result was observed in the control group in 5 cases (25%), in I group-in two cases (10%), in II group - in 3 cases (15%), in the main group, the persistent result was maintained in all cases.

Therefore, we can state that proposed by us integrated approach using the surgical, physiotherapeutic and medicinal methods of treatment can achieve highly efficient and persistent treatment results in patients with blepharoptosis with reduced or absent function of the levator muscle.

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MODERN RECONSTRUCTION OF THE ORBIT USING COMPUTER MODELING METHODS

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Rehabilitation of sufferers with post-traumatic defects and orbit deformation remains an actual medical and social problem, caused by high frequency of visual disturbances and aesthetic disorders. One of the main reasons for their occurrence is the change in the volume of the orbit due to the formation of defects of its walls. Their elimination is carried out with the use of different implants and transplants. Study purpose was estimation of the results of treatment of patients with post-traumatic defects and orbit deformation by determining its postoperative volume and analyzing the anatomic shape with the use of three dimensional computer modeling.

Materials and methods: A retrospective analyse of the CT results with the use of computer modeling methods was performed in 17 patients, who previously were given medical treatment by unilateral reconstruction of the orbit walls with titanium implants and/or autogenous bone regarding post-traumatic defects and deformation. CT data were analyzed in the software environment of SimPlant 11.04 (Materialize Dental, Leuven Belgium), where the models of orbits of the operated and undamaged sides were created, which volume was determined in cm³. The volume of the obtained models were compared with each other and the difference was calculated, which was considered as a numerical expression of the volume change of the operated orbit. For a comparative evaluation of the shape of the restored orbit, its virtual reflection and comparison with the model of the undamaged side were carried out.

Results and their discussion
According to the results of computer modeling, the volume of the orbit of the undamaged side in women (n = 5) was 26.1 ± 1.4 cm³, in men (n = 12) - 29.7 ± 3.4 cm³. The analysis of virtual models of orbits revealed that after the surgical treatment the average volume of the restored orbit was 30.6 ± 3.1 cm³ for women (n = 5), and for men (n = 12) - 31.1 ± 3.1 cm³. At the same time, the minimum difference in the healthy and undamaged side was 0.018 cm³, the maximum difference was 7.4 cm³. Among the patients who were enrolled in the study, good treatment results based on the orbital volume recovery criterion were found in 30% of cases, satisfactory in 17.6%. More than half of the cases (52.4%) failed to achieve an acceptable recovery of the orbital volume during the first surgical intervention. After analyzing the reasons of unsatisfactory results, it was noted that in most cases they were associated with incorrect positioning of implants in the posterior third part of the floor of the orbit.

Findings
Conventional treatments of post-traumatic defects and orbit deformation with the use of autogenous bone and/or titanium implants...
fails to achieve optimum effect in regards to recovery of orbit volume in more than 50% of cases. The use of computer modeling in determining the orbit volume is an effective method of assessing the extent of traumatic injury and the results of surgical treatment. While under reconstruction of the orbit, it is necessary to achieve restoration of its anatomical structure, especially in the back of its section, taking into account the relief and the spatial layout of its walls.

КОЛЛАГЕНОВЫЙ ИМПЛАНТ BIORIPAR® ПРИ ЭНУКЛЕАЦИИ ГЛАЗНОГО ЯБЛОКА С УБЕАЛЬНОЙ МЕЛАНОМОЙ БОЛЬШИХ РАЗМЕРОВ (ПРЕДВОРИТЕЛЬНЫЕ ДАННЫЕ)
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При больших размерах уvealной меланомы, когда нет возможности применить орнагнозированные методы лечения, выполняться энуклеация глазного яблока. При отсутствии противопоказаний к эндопротезированию, для достижения косметического эффекта, широко применяется синтетические орбитальные импланты. Однако, нередки осложнения в виде отторжения эндопротеза за счет хронической воспалительной реакции в глазничной полости как ответ организма на синтетические, не рассасываемые материалы с формированием вокруг них грубой рационации тканей, склонной к контрактуре и последующей миграции имплантата. Цель: с целью предотвращения выше перечисленных осложнений, мы предлагаем покрывать синтетический имплант перикардиальной коллагеновой мембраной bioripar®.

Материалы и методы: за период 07.2016г.-10.2017г. была проведена энуклеация глазного яблока с эндопротезированием ситетовым имплантатом (полиметилметакрилат) под общим обезболиванием у 6 пациентов (6 глаз) с уvealной меланомой больших размеров (высота≥10мм); средний возраст пациентов 58±10,2. синтетический имплант предварительно был обернут в нереконструированный коллагеновый материал bioripar® (assut europea srl италия) из бычьего перикарда (коллаген i типа), обработанной по специальной методике, позволяющей сохранить природную структуру коллагена, основными достоинствами которого является отсутствие токсических и канцерогенных свойств, слабая антигенность, во время операции все прямые экстраокулярные мышцы были фиксированы на поверхности перикарда для обеспечения большей функциональной подвижности эндопротеза. пациентам ежемесячно проводилась эхоскопия с цветным допплеровским картированием послеоперационной области, для отслеживания поведения материала bioripar®. пациенты продолжают находиться под активным динамическим наблюдением.

Результаты: за время наблюдения (6-15месяцев, сп. 10,6±2,7) послеоперационных осложнений не выявлено. у всех пациентов получено желаемый косметический эффект с хорошей подвижностью эндопротезом при последующей энуклеации. bioripar® проявил себя как материал обладающий хорошей пластичностью, выраженным гемостатическим эффектом, в результате усиления фагоцитарной способности гранулоцитов и макрофагов, пролиферации фибробластов, стало возможным образование новой ткани, барьерное предотвращение вторичной инфекции. к клиническим преимуществам следует отнести значительное ускорение процесса заживления ран, уменьшение боли и раневого воспаления в полеоперационном периоде. имплантированная коллагеновая матрица медленно заместилась окружающей имплантат тканью в течение процесса заживления. Заключение: покрытие синтетического орбитального имплантата перикардиальной мембранны BioRipar® облегчает размещение орбитального имплантата в мягкие ткани глазницы за счет гладкости оберточного материала и снижение сопротивление тканей; способствует формированию в послеоперационном периоде вокруг всей поверхности прочной, здоровой, хорошо васкуляризированной ткани; позволяет удержать имплантат в правильном положении и тем самым предотвращает его обнажение и экспозицию; обеспечивает точную фиксацию прямых мышц на поверхности мембраны, улучшая моторику протеза; создаёт дополнительный барьер, сводя к минимуму риск заражения имплантата и обеспечивает, в конечном итоге, наибольший комфорт и эстетически симметричный вид. Исследование требует дальнейшего наблюдения.

COLLAGENE IMPLANT BIORIPAR® IN THE ENUCLEATION OF THE EYE WITH LARGE SIZES UVEAL MELANOMAS (PRELIMINARY DATA)
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At large sizes of uveal melanoma, when there is no possibility to apply organ-saveway methods of treatment, enucleation of the eyeball is performed. In the absence of a contraindication to endoprosthetics, to achieve a cosmetic effect, synthetic orbital implants are widely used. However, complications, like a rejection of the endoprosthesis, are not rare. It is due to the chronic inflammatory reaction in the orbital cavity as a response of the body to synthetic, not resorbable, materials with the formation around them of a rough granulation tissue, prone to contracture with subsequent migration of the implant. Purpose: in order to prevent the above complications, we suggest covering the synthetic implant with a pericardial collagen membrane bioripar®.

Methods: for the period 07.2016-10.2017 eyeball enucleation, with a synthetic implant (polymethylmethacrylate) under the general anesthesia, was done in 6 patients (6 eyes) with large uveal melanoma (height ≥10 mm); mean age of patients 58±10,2. the synthetic implant was preliminarily wrapped in a non-reconstructed bioripar® collagen material (assut europea srl italy) from bovine pericardium (collagen type i), which was processed by a special technique that allows preserving the natural structure of collagen, the main advantages of...
which are the absence of toxic and carcinogenic properties, weak antigenicity, during the operation, all the direct extraocular muscles were fixed on the surface of the pericardium to ensure greater functional mobility of the endoprosthesis. Patients underwent monthly echoscopy with color doppler mapping of the postoperative area to track the behavior of the BioRipar® material. Patients continue to be under active dynamic supervision.

Results:
During follow-up (at this stage it is 6-15 months, on average 10.6 ± 2.7), postoperative complications have not been revealed. All patients received the desired cosmetic effect with a well-movable endoprosthesis for subsequent exoprosthesis. BioRipar® has proved to be a material with good plasticity, pronounced hemostatic effect. As a result of increased phagocytic ability of granulocytes and macrophages, proliferation of fibroblasts, it became possible to form new tissue, barrier prevention of secondary infection. Clinical advantages of this material include significant acceleration of wound healing, reduction of pain and wound inflammation in the postoperative period. The implanted collagen matrix was slowly replaced by the surrounding tissue during the healing process.

Conclusions:
The coating of the synthetic orbital implant with the pericardial membrane of BioRipar® facilitates the placement of the orbital implant in the soft tissues of the orbit due to the smoothness of the wrapping material and a decrease in tissue resistance; promotes the formation in the postoperative period around the entire implant surface of a strong, healthy, well vascularized tissue; allows to hold the implant in the correct position and thereby prevents its exposure; provides accurate fixation of the rectus muscles on the surface of the membrane, thereby improving the motility of the prosthesis; creates an additional barrier, minimizing the risk of infection of the implant and provides, in the end, the greatest comfort and aesthetically symmetric appearance. The study requires further monitoring.

Purpose:
The aim of research is to find out:
Is BT- A injection safe for children? Does “the after-effect” last longer?
What are the side effects and if it appears how long does it last?
Is there correlation between botulinum toxin dosage and deviation degree?

Methods:
The research is based on retrospective analysis of each clinical case. 2013-2016 yy in 12 patients were used Dysport injection, age range 2-6y/o.

Majority of the patient had the diagnosis acquire partial or non-accommodative alternative esotropia, only one patient had infantile esotropia. Major of patients wore full correction glasses; all this patients had deviation in glasses.

Previously, none of them had strabismus surgery.

Deviation was 5-40 degree. 7 patients had Low-Moderate Hyperopia, 2 patients had High Hyperopia and 3 patients had Low-Moderate Myopia. The Dysport injection dosage was 6-40 units simultaneously into both medial rectus muscles-MR. After general anesthesia Dysport was injected by 27G needle under direct vision through a small conjunctival incision (the muscle was released with hook and incision was closed sutureless). When the effect of BT-A wears off, some of histology changes will persist, that changes the alignment of the eye- “the after-effect”. Usage of both products (bupivacaine and botulinum toxin) together, just as a surgical recession and resection, may augment each other’s effects.

The research approved botulinum toxin-A is safe and may alternate to traditional surgery for small-angle esotropia. Using BT-A can minimize the number of muscles operated on, thus preserving future surgical options.

Abstract
Background: Botulinum toxin-A is used as a treatment of different types of strabismus more than 30 years. The correction of non-accommodative strabismus requires surgical manipulation of the extraocular muscles.

At the end of the 20th century, the study was designed to develop and evaluate an alternative treatment for strabismus; for this purpose was injected alcohol into extraocular muscles, however, the effects were either inadequate or permanent paralysis, and the experiments were abandoned.

Injection of the anesthetic Bupivacaine into the muscles causes damage to muscle fibers and myocytes, the new muscle fibers that replace them within the next 10 to 20 days make the muscle larger, stiffer and stronger than before. Botulinum toxin-A works by paralyzing the extraocular muscle that is pulling the eye out of alignment. In the initial period of paralysis, there will be an overcorrection of strabismus as the normally functioning antagonist overpowers the paralysed muscle – “the effect”. With this overcorrection there will be contraction of the antagonist and stretching of the paralysed muscle. During this time the length of the paralysed muscle and its antagonist will change, and the length–tension curve within these muscles will also change. When the effect of BT-A wears off, some of histology changes will persist, that changes the alignment of the eye- “the after-effect”. Usage of both products (bupivacaine and botulinum toxin) together, just as a surgical recession and resection, may augment each other’s effects.

The research approved botulinum toxin-A is safe and may alternate to traditional surgery for small-angle esotropia. Using BT-A can minimize the number of muscles operated on, thus preserving future surgical options.
exotropia—"the effect" occurred in 11 cases during 3-7 days;
no infection;
no perforation;
no retrobulbar hemorrhage;
no anterior segment ischemia;
no allergy reaction.

Research did not indicate direct proportional correlation between toxin dosage and alignment degree, but the maximum benefit was achieved in patients with small-angle deviation (5-10 dg) when 8-10 units were injected.

Conclusion: We found that Dysport injection is safe and the most effective solution in small-angle deviation (5-10 degrees) when 8-10 units were injected. In case of angle – 15dg and more, after injection we reached decreased deviation and hope to preserve LR for future surgical options or give the patient repeat injection. We noticed that in patients who had Myopia and large-angle deviation usage Dysport 15-40 units caused non-transient exotropia, in patients who had high Hyperopia usage Dysport 6-8 units were not enough, we think Refractive errors should be taken into account.

Conclusion: We found that Dysport injection is safe and the most effective solution in small-angle deviation (5-10 degrees) when 8-10 units were injected. In case of angle – 15dg and more, after injection we reached decreased deviation and hope to preserve LR for future surgical options or give the patient repeat injection. We noticed that in patients who had Myopia and large-angle deviation usage Dysport 15-40 units caused non-transient exotropia, in patients who had high Hyperopia usage Dysport 6-8 units were not enough, we think Refractive errors should be taken into account.

Our observation indicates that injection of Dysport is less effective in infantile and genetic forms of strabismus than acquired.

EXPERIMENTAL STUDY OF THE INFLUENCE OF NEURAL CREST-DERIVED MULTIPOΤENT STEM CELLS ON THE STATE OF THE VISUAL ANALYZER IN GLAUCOMA


Development of new effective treatments for glaucomatos optic neuropathy is one of the most acute aspects of a modern ophthalmology. The aim of our study was to design adrenal-induced glaucoma (AIG) condition in rats, followed by evaluation of morphological changes in retina and effects of different cell administration modes using cultured adult neural crest-derived multipotent stem cells (NC-MSCs) on retina restoration.

Materials and methods:
Modeling of AIG was performed on Wistar rats (males, 10-12 months) via intraperitoneal administration of 0.18% solution of adrenaline hydrate at a dose ranging from 10-15 μg per 100 g (20 injections over 6 weeks). Measurement of intraocular pressure (IOP) was carried with use of applanation tonometer. Adult NC-MSCs were isolated from the bulge region of whisker follicle by explant method. Adult NC-MSCs were expanded in vitro and then characterized by immunocytochemistry and directed differentiation assay into NC-derived cell types. NC-MSCs administration modes: i/v 5×10^6 cells per animal; retro- and parabulbar injections of 0.5×10^6 cells per animal. Retina and optic nerve histomorphometric analysis was done on H&E stained sections.

Results:
NC-MSCs have a phenotype of nestin+p75+Sox10+cytokeratin-. IOP in rats before modeling was 7-10 mmHg. During the injection IOP was increased in all experimental animals from 15 to 22 mmHg and remained increased after modeling. AIG modeling led to development of stable through 3 months glaucoma-characteristic dystrophic and degenerative changes. i/v administration reduced the swelling of the optic nerve, and all the retina layers, but didn't restore retina structure. Parabulbar administration of NC-MSCs resulted in a reduction of swelling and restoration of layers' structure, most pronounced in the ganglionic layer and inner plexiform layer. In the outer plexiform layer, outer nuclear layer and layer of rods and cones significant swelling remained. Retrobulbar administration of NC-MSCs decreased swelling and layers' structure restoration was most pronounced. Compared with a model, the number of nuclei in the inner and outer nuclear layers was statistically increased, although it was lower than in intact animals. NC-MSCs administration induced positive changes for all cell delivery methods.

Conclusion:
Positive effect of the NC-MSCs administration was observed in terms of swelling regression, retina and optic nerve restoration. Retrobulbar mode had the most prominent effect on the recovery of ganglionic layer, restoration of the structure of inner and outer nuclear layers and layer of rods and cones. Further studies of mechanisms involved in retina recovery should be done.
AMNIOTIC MEMBRANE AS MATRIX FOR BIOLOGICALLY ACTIVE SUBSTANCES FOR TRANS- TENON’S DELIVERY
Tbilisi State medical University Children Eye Disease Department. Tbilisi State Medical University Pharmaceutical Technology Department. Amnion Transplantation Bank. D.Shengelia; A. Bakuridze; N.Karanadze; B. Shengelia; M.Kurtanidze; T. Jikurashvili; T.Chanuyvadze

The authors created a new amniotic membrane Trans-Tenon’s delivery medicinal form with Liposome derived drug for treatment of eye diseases.

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AMNIOTIC MEMBRANE TRANSPLANTATION AS THE SURGICAL APPROACH IN THE TREATMENT OF CORNEAL DISEASES
Teona Tchanukvadze, Tinatin Jikurashvili, Nino Karanadze. Ophthalmologist surgeon “Akhali mzera”, “Aversi”, Chichua Medical Center “Mzera”, “Lions Eye Clinic”.

Introduction:
Amniotic membrane transplantation has been used in different medical subspecialties for several decades. We have used amniotic membrane grafting for the surgical treatment of corneal diseases.

Methods:
We have treated 29 patients, among them were 16 patients with persistent corneal ulcer, 2 patients with thermal burns, 2 descemetocele, 2 corneal perforations with iris prolapse, 4 corneal perforations, 2 traumatic ulcer, 1 abscess of the cornea. In all cases Amniotic membrane transplantation with blepharotarsoraphy was done.

Results:
The time of observation was lasting from 3 months till 1.5 years. During this period there wasn’t any case with complications, in all cases we get the stabilization of processes—by means of organ saving in some cases, and visual function improvement in others. Conclusion—amniotic membrane transplantation is the effective, unexpensive and reachable method of treatment.

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კონტაქტური ლინზების როლი ანიზომეტროპიის კორექციაში
ნანა აფხაზავა, იდვალუროვანი როლი თბილისი, საქართველო.

პრობლემის აქტუალობა:
ანიზომეტროპია (1 დიაფოტრაზე მეტი) არის ამბლიოპიის განვითარების შეუქცევადი მიზეზი. დიპლოპია, ასთენოპიური ჩივილები ხდება სათვალთმოსამსახურის თანხვედრას. ხშირად შეუწყეტებლად კორექცია დომინანტური თვალის სასარგებლო მედიცინური შესადგენად ამბიენტია ამბოჰში.

მკურნალობის კორექციის ფრონტი სათვალთმოანაზომეტრულობის, გარდა შემდეგ შეუკმარისობის, სტერეო შემდეგ შეუძლია. 1 დოთხვითში შეერთებული საჭირო შემოქმედების ფუნქცია.

მეთოდოლოგია და თეორიული ორიენტაცია:
კატეგორიაში შემოკლებული პაციენტებს ინასოფლობდნენ კორექციის შემდეგ სახეები: სათვალთმო, სათვალთმო და ოკლუზია, კონტაქტური კოლობომა და დომინანტური თვალის ოკლუზია.

კატეგორიაში შემოკლებული 25 ადამიანი, 20 თვალი, 6 ოთხწლიდან 35 ოთხწლამდე, 9 მამაკაცი და 16 ქალი.

15 თვალი მიოპია და ასტიგმატიზმი, 5 თვალი ჰიპერმეტროპია, ჰიპერმეტროპია და ასტიგმატიზმი.

ტარდებოდა შემდეგი კვლევები:
ვიზომეტრია, რეფრაქცია, სკიასკოპია, ქოვერ ტესტი, დომინანტური თვალის ოკლუზია, სათვალთმო კორექცია, კონტაქტური ლინზებით კორექცია, ბიომიკროსკოპია, სტერეო ტესტი, სათვალთმო კორექცია.

დასკვნები:
14 პაციენტს აღენიშნებოდა მხედველობის გაუმჯობესება კონტაქტურ ლინზებით. აქედან 3 პაციენტი გააჩნია სათვალთო ჰიპერმეტროპია ანიზომეტროპია სათვალთმო კორექციიდან.

2 პაციენტისთვის შეარჩევეთ სათვალთმო ჰიპერმეტროპია, ნაგები სათვალთო, სათვალთო, ჰიპერმეტროპია, ჰიპერმეტროპია და ასტიგმატიზმი.

2 პაციენტს აღენიშნებოდა მხედველობის გაუმჯობესება და არაპირდაპირი ოფთალმოსკოპია.

2 პაციენტს შეარჩევეთ სათვალთო, გავარაგებული სათვალთო, სათვალთო სათვალთმო კონტაქტურ ლინზებით.

დასკვნა და მნიშვნელობა:
1. არსებობს ყველაზე ეფექტური კორექციის სახე მხედველობის გასაუმჯობესებლად მიდის.

2. 70%-100%ზე მეტი უმჯობესდება მხედველობა ნებისმიერი ხარისხის მიოპიური ასტიგმატიზმის კორექციისას. 60% ში სათვალთმო კონტაქტური კორექციის დახმარებით, 40 %ში კონტაქტური კორექცია შეაგია ოფთალმოსკოპიის თანხვედრის თურბაზ(2/2/2 და 2-4 სათვალთო)

3. არსებობს ქარგი შეუწყეტებლად მოთხოვნა ანიზომეტროპიის კორექციას.

4. პოსტოპერატიული პერიოდი ასპექტებში და შესაბამისად საჭირო ანიზომეტრია თვალგზა კორექცია პირველ დღესასწორედ და არაპირდაპირი ოფთალმოსკოპია. რეზულტატები, დასკვნები და მნიშვნელობა.
THE ROLE OF CONTACT LENSES IN THE MANAGEMENT OF ANISOMETROPIA

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Topicality of the problem:
Anisometropia (more than 1 diopter) is an irreversible cause for development of amblyopia. Diplopia, asthenopic complaints become the cause of intolerance of eyeglasses. The retinal images do not match. Often the selected correction is resolved in favor of the dominant eye, and therefore, amblyopia is formed the in non-dominant eye.

In correction of the vision, it should be considered, that except for high vision, binocular balance, stereo vision, Anisometropia over 1 diopter already means the deficit of the stereo vision.

Methodology and theoretical orientation:
Patients participating in the study were prescribed the following types of correction: eyeglasses, eyeglasses and occlusion, contact lenses, contact lenses and the dominant eye occlusion.
The survey included 25 people, 20 eyes, from 6 months to 35 years old, 9 males and 16 females.
15 eyes myopia and astigmatism, 5 eyes hypermetropia, hypermetropia and astigmatism.
The following studies were conducted:
Visometry, refractive keratometry, sciascopy, Cover Test, determination of the dominant eye, Stereo Test, correction with eyeglasses, correction with contact lenses, biomicroscopy, indirect ophthalmoscopy, determination of the eye long axis.

Conclusions:
Fourteen patients had a sharp improvement in contact lens. In 3 patients out of them with the divergent strabismus ++ myopic astigmatism, strabismus was completely compensated. It was sufficient only to prescribe contact lenses to this patient to improve vision.
We had better results with 4 patients with the combination with occlusion.
We had no results with 4 patients, the primary diagnosis for 2 patients was the sclera coloboma, and for other 2 patients: convergent strabismus + high degree hypermetropia (+ 7.0) on one eye.
In 2 patients improvement of the vision was observed, however, the primary diagnosis - convergent strabismus was decompensated and we returned to the correction with eyeglasses.

Conclusion and importance:
Contact correction as the most effective type of correction for improvement of the vision is indicated:
1. In case of any degree of Anisometropia
2. The vision is improved by 70% -100% in correction of any degree myopic astigmatism. In 60%, it is enough to prescribe the contact a correction, and in 40% occlusion of the dominant eye is added to the contact correction to (2/2/2kv or 2/4 hr. dayly)
3. Good results are obtained in patients with myopic astigmatism and divergent strabismus.
4. Hypermetropic combined astigmatism and convergent strabismus require the correction with eyeglasses on the first stage and, if necessary, after the surgery performed for the strabismus the correction with contact lens is effective.
Any correction may be prescribed (from sph + 30.0 to -30, from cyl -0.75 to -5.75, with a step of Ax 5-10’) from the very first days of life to age of adult including.
The difficulty is to manipulations of putting in and removing the lens, that requires the readiness of the patient or parents. Keeping terms and hygiene is directly related to the safety of the contact lens. For preventive purposes, the lubricants without the preserving agents are prescribed initially at the beginning.
Anisometropia is no longer the cause of the development of amblyopia (and strabismus in the future).