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## **СОВРЕМЕННЫЕ ХИРУРГИЧЕСКИЕ ПОДХОДЫ К ЛЕЧЕНИЮ РЕФРАКТЕРНОЙ ГЛАУКОМЫ**

**Резюме:** На сегодняшний день актуальную проблему представляет собой лечение так называемой рефрактерной глаукомы (РГ), объединившей наиболее тяжелые нозологические формы глаукомы; одной из отличительных особенностей заболевания является устойчивость к проводимому лечению.

**Ключевые слова:** рефрактерная глаукома, хирургическая реабилитация.

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## **MODERN SURGICAL APPROACHES TO TREATMENT OF REFRACTED GLAUCOMA**

**Resume:** To date, an urgent problem is the treatment of the so-called refractory glaucoma (RG), which combines the most severe nosological forms of glaucoma; one of the distinguishing features of the disease is resistance to treatment.

**Key words:** refractory glaucoma, surgical rehabilitation.

**Relevance.** The combination of glaucoma and cataract is common in the practice of an ophthalmic surgeon of any eye hospital and occurs, according to various authors, in 17-76 [1, 2], and in pseudoexfoliative glaucoma - in 40-85% of cases [1, 7]. Secondary glaucoma after various injuries is observed in 10-50.3% and complicates the surgical rehabilitation of patients with post-traumatic changes in the cornea and irido-lens zone [4, 9]. The need for surgical treatment

of all types of refractory glaucoma is recognized as indisputable [3]. In domestic and foreign literature, the issue of the need to introduce combined operations in ophthalmological practice for combined glaucoma and cataract is widely discussed [6, 8]. These beliefs are based on the fact that combined operations significantly reduce the time of visual and social rehabilitation of patients in uncomplicated cases, and that stage-by-stage surgery of combined pathology has a double psychological and financial burden on the patient. In addition, there are reports of a possible loss of the hypotensive effect from preliminary antiglaucoma surgery (AGO) after cataract extraction (EC) as a result of prolonged intraoperative hypotension, which, according to J.J. Alpar, to desolation and adhesion of the walls of the filter pad [10]. At the same time, in case of advanced stages of glaucoma, the need for stage-by-stage treatment of combined pathology is recognized [6], since the initial state of the eyes predisposes to a higher frequency of operational and postoperative complications due to pronounced disorders of hydro- and hemodynamics, microcirculation disorders and the immunological status of the operated eye. In addition, intraoperative trauma, which is large in volume and time, contributes to a pronounced inflammatory reaction and, as a result, increased scarring of the formed drainage pathways. However, we did not find any reports in the literature concerning the stages of treatment of refractory glaucoma, in which these disorders are catastrophic.

**The aim of this study** was to evaluate the results of the stage-by-stage surgical treatment of patients with refractory glaucoma, combined with pathology of the anterior segment of the eye, according to our developed antiglaucoma operation with further reconstructive surgery.

**Material and research methods.** In the main group under our supervision there were 23 patients (25 eyes) aged 21 to 77 years with refractory glaucoma of various origins. Nine eyes had primary previously operated uncompensated glaucoma, 3 patients in the paired eye were diagnosed with

amaurosis after several unsuccessful antiglaucoma operations, 4 eyes had refractory glaucoma fakotopic, 3 had phacomorphic origin, 4 had post-traumatic origin, 2 had secondary glaucoma with aphakia and pseudophakia. IOP before hypotensive surgery was within 26-47 and averaged 34 mm Hg. Art. The initial stage of glaucoma was established in 1, developed - in 8 (9 eyes), advanced - in 12 (13 eyes) patients, in 2 patients, glaucoma had a terminal stage. The main group of operated patients has developed and advanced stages of glaucomatous process. The observation period was 2 years.

**Research results.** All patients underwent deep sclerectomy (DSS) or non-penetrating deep sclerectomy (NDES) in our modification with the formation of a wide intrascleral pocket and implantation of a mesh drainage "Repegel" into it. In REPER-NN LLC, by photopolymerization of polyoxypropylene, a copolymer of ethylene glycol monomethacrylate ether and methacrylic acid, a fundamentally new polymer was obtained - diesel, which has both hydrophilic and hydrophobic properties due to its molecular structure. Physicochemical and toxicological properties of the obtained material were studied on the basis of REPER-NN LLC. Morphological studies of the biocompatible properties of the digel were carried out in our clinic [5]. Joint research has established that the digel fully meets the requirements for the creation of drains used in glaucoma surgery: these drains are easily sterilized, stored for a long time, have sufficient elasticity, do not cause an immunological reaction and provide active movement of fluid in the structures of the material. The mesh explant drainage from the digel offered by us has the following dimensions: length 6, width 4 mm, thickness 100 microns. The plate has 100 micron holes.

**Operation technique.** A 5 mm long conjunctival flap is cut out in the intact zone, 8-10 mm away from the limbus. The proposed scleral incision is marked with a triangular marker for antiglaucomatous operations with a side length of 4 mm. The marker is positioned with the base towards the dial. The sclera is cut in the form of a triangle with a truncated apex to a depth of 350-400 microns. The

superficial flap is separated from the apex to the corneal part of the limbus, going into the cornea by 1-2 mm. The sclera is delaminated at the same depth on the sides from the triangular incision to a 6 by 8 mm rectangle, located with the long side toward the limbus, with a sapphire tipped delaminator with a 5 mm blade length. Thus, an additional intrascleral cavity is formed for seamless fixation of drainage, which simultaneously serves as a regulator of daily IOP fluctuations. From the underlying layers of the sclera, a triangular flap of 3.5 by 3.5 mm is cut out and excised almost to the choroid. With deep sclerectomy (DSS), the trabeculus is destroyed with a spatula and basal iridectomy is performed. The mesh drainage from the digel is implanted into the previously formed intrascleral bed, after which the upper scleral bed is put into place and fixed with 2-4 interrupted sutures 8-0. The operation ends with the imposition of a continuous suture on the conjunctiva and subconjunctival injection of a corticosteroid with an antibiotic.

The GSE operation in our modification with mesh drainage implantation was performed in 12 patients (13 eyes). In 11 (12 eyes), the NGSE was performed according to the method proposed by V.I. Kozlov, but also modified by the creation of an extensive intrascleral pocket with mesh drainage implantation.

In the early postoperative period after AGO with the use of drainage from a digel, patients were treated according to the standard method.

The choice of the AGO method was determined by the anatomical, topographic and clinical features of the operated eye. In the early postoperative period, IOP was compensated up to 15-22 mm Hg. Art. in all patients and averaged 18 mm Hg. Art. without additional medication support. In the period from 3 months to 2.5 years after AGO (mainly - 6 months), subject to the obligatory stabilization of hydrodynamic parameters, the anterior segment of the eye was reconstructed in order to improve vision, in some cases - for cosmetic purposes. Complicated cataracts of varying degrees of maturity were diagnosed

and removed in 17 patients (19 eyes). The IOL was implanted in 15 patients. The choice of the method of cataract surgery was determined by the initial state of the eye. Ultrasonic phacoemulsification (FE) was performed in 5 patients. 10 patients with miosis 1.5-2.0 mm in combination with circular synechiae, subluxation of the lens of 1-2 degrees and in the presence of fibrinous films on the surface of the iris and lens underwent extracapsular cataract extraction (EC) with synechiotomy, temporary sphincterotomy. In the presence of grade 2 lens subluxation, 3 patients (4 eyes) underwent intracapsular cataract extraction (IEK) with implantation of an anterior chamber IOL. 3 patients with gross post-traumatic corneal scars underwent penetrating keratoplasty (PSC), in 2 cases with aniridia - with implantation of an artificial irido lens diaphragm (IHD). An anterior chamber IOL model was implanted in a patient with aphakia. Visual acuity before reconstructive surgery in 92% of cases was below 0.1.

In the main group, we did not observe intraoperative complications. In the early postoperative period in one patient after PE

Hemorrhagic complications and reactive ophthalmic hypertension were not observed. Visual acuity improved in 22 eyes (88%), remained at the level of movement of the shadow in the face - in 3 patients with the terminal stage of refractory glaucoma and severe post-traumatic retinopathy (table). Satisfactory cosmetic effect was achieved in 2 patients after PCB with ICD implantation. In the period from 3 months to 1.5 years after reconstructive surgery, 1 patient with PBS and IHD underwent IOP decompensation, for which repeated AGO with mesh drainage implantation was performed, which subsequently provided a persistent hypotensive effect. In the rest of the patients, IOP decompensation was not observed during the observation period.

**Conclusion.** Our operations and the early postoperative period in patients with severe forms of glaucoma proceeded without exudative and hemorrhagic complications due to our sparing technology and minimization of intraoperative trauma due to a phased approach to the treatment of combined pathology.

As a result, due to the preparatory stage - surgical normalization of IOP - the indicators of hydro- and hemodynamics and autoimmune status stabilized, which made it possible to perform the reconstructive stage with a minimal risk of intra- and postoperative complications. Implantation of mesh drainage "Repegel" during AGO in our modification prevented adhesion of the walls of the filtration cushion, increased uveoscleral outflow and ensured the preservation of drainage pathways in the early and late postoperative period, which is confirmed by ultrasound biomicroscopy data.

Thus, staged surgery in patients with refractory glaucoma provides the least intraoperative trauma to the eye tissues, significantly reduces the number of complications in the early and late postoperative periods, which significantly affects the improvement of visual functions, a decrease in the time of postoperative rehabilitation and stabilization of hydrodynamic parameters.

#### **BIBLIOGRAPHY:**

1. Abramov VG and other Outcomes of cataract extraction in persons with surgically normalized ophthalmotonus in open-angle glaucoma // Ophthalmol. zhurn. 1993. No. 2. S.83-86.

2. Alekseev B.N. Simultaneous microsurgery of cataract and glaucoma // Problems of cataracts. Kuibyshev, 1975.S. 31-37.

3. Bessmertny A.M., Elichev V.P. Algorithm for the surgical treatment of refractory glaucoma // Glaucoma: problems and solutions: Sat. scientific. Art. M., 2004.S. 271-275.

4. Wenger G.E., Chudnyavtseva N.A. Secondary glaucoma in eye injuries complicated by damage to the lens // Ophthalmol. zhurn. 1987. No. 4. S. 201-205.

5. Pashtaev N.P. et al. New polymer - digel in the surgical treatment of refractory glaucoma. Experimental substantiation of the application // Congress of ophthalmologists of Russia, 8th: Abstracts of reports. M., 2005.S. 208.

6. Egorova E.V. and other Glaucoma: problems and solutions: Sat. scientific. Art. M., 2004.S. 351-356.
7. Krol D.S. Pseudoexfoliative syndrome and exfoliative glaucoma: Author's abstract. dis. ... Dr. med. sciences. M., 1970.32 p.
8. Malyugin B.E., Dzhndoyan G.T. Long-term results of simultaneous phacoemulsification and non-penetrating tunnel sclerectomy // Modern technologies of cataract surgery: Sat. scientific. Art. M., 2000.S. 109-115.
9. Violin V.K. Secondary glaucoma with eye injuries // Ophthalmol. zhurn. 1987. No. 4. Pp. 198-201.
10. Alpar J.J. Cataract extraction and implantation in the eyes with pre-existing filtering blebs // Am. Intraocular Impant. Soc. J. 1979. Vol. 5, No.1. P. 33-35.