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ASSESSMENT OF THE PREVALENCE AND TREATMENT OF SECONDARY GLAUCOMA IN THE MULTIDISCIPLINARY CLINIC OF SAMARKAND MEDICAL UNIVERSITY

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Abstract
Phacogenic glaucoma is a form of secondary glaucoma that occurs due to pathological changes in the lens, most often with hypermature cataracts or after their surgical removal. The study included 45 consecutive eyes of 45 patients with phacolytic glaucoma who underwent surgery between January 2025 and December 2025 and who received at least one year of follow-up. Of the 45 eyes, 17 underwent extracapsular cataract extraction (ECE) with primary implantation of a posterior chamber intraocular lens (IOL) (Group 1). The remaining eyes (n = 28) underwent only extracapsular cataract extraction (group 2) due to satisfactory aphakic vision in the contralateral eye. Of the 45 patients diagnosed with glaucoma or suspected of having glaucoma, 35 (7.4%) had secondary glaucoma. The mean age at presentation was 52 ± 17 years, and the male to female ratio was 1.5:1. The most common cause was lenticular glaucoma (25 cases, 32.8%), followed by neovascular 10 (20.3%), steroid 16 (16.3%), traumatic 14 (14.4%), postvitrectomy 7 (3.2%), uveitis 11 (2.1%), pseudophakic 10 (1.9%), aphakic 8 (1.5%), postkeratoplasty 5 (0.9%), and other causes 35 (6.6%).

Keywords: Secondary phacogenic glaucoma, phacolytic glaucoma, medical rehabilitation, extracapsular cataract extraction.

Introduction

Аннотация

Факогенная глаукома представляет собой одну из форм вторичной глаукомы, возникающей на фоне патологических изменений хрусталика — чаще всего при перезрелой катаракте или после её хирургического удаления. В исследование были включены сорок пять последовательных глаз 45 пациентов с факолитической глаукомой, прооперированных в период с января 2025 года по декабрь 2025 года, и которые прошли не менее 1 года наблюдения. Из 45 глаз 17 глаз прошли экстракапсулярную экстракцию катаракты (ЭЭК) с

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первичной имплантацией интраокулярной линзы задней камеры (ИОЛ) (группа 1). Остальные глаза (n = 28) подверглись только экстракапсулярной экстракции катаракты (группа 2) ввиду удовлетворительного афакичного зрения в контралатеральном глазу. Из 45 пациентов с диагнозом глаукома или подозрением на глаукому у 35 (7,4%) была вторичная глаукома. Средний возраст при обращении составил 52 ± 17 лет, соотношение мужчин и женщин составило 1,5:1. Наиболее распространенной причиной была хрусталиковая глаукома 25 (32,8%), за ней следовали неоваскулярная 10 (20,3%), стероидная 16 (16,3%), травматическая 14 (14,4%), поствитрэктомическая 7 (3,2%), увеитная 11 (2,1%), псевдофакическая 10 (1,9%), афакическая 8 (1,5%), посткератопластика 5 (0,9%) и прочие причины 35 (6,6%).

Ключевые слова: вторичная факогенная глаукома, факолитическая глаукома, медицинская реабилитация, экстракапсулярная экстракция катаракты.

Annotatsiya

Fakogen glaukoma - bu ko'z linzasidagi patologik o'zgarishlar tufayli yuzaga keladigan ikkilamchi glaukomaning bir turi, ko'pincha gipermatur katarakt bilan yoki ularni jarrohlik yo'li bilan olib tashlashdan keyin. Tadqiqotga 2025-yil yanvaridan 2025-yil dekabrigacha operatsiya qilingan va kamida bir yillik kuzatuvni olgan fakolitik glaukoma bilan og'rigan 45 bemorning ketma-ket 45 ta ko'zi kiritilgan. 45 ta ko'zdan 17 tasi orqa kamerali ko'z ichi linzasini (IOL) birlamchi implantatsiya qilish bilan ekstrakapsulyar katarakt ekstraktsiyasi (ECE) dan o'tkazildi (1-guruh). Qolgan ko'zlar (n = 28) kontralateral ko'zda qoniqarli afakik ko'rish tufayli faqat ekstrakapsulyar katarakt ekstraktsiyasidan o'tkazildi (2-guruh). Glaukoma tashxisi qo'yilgan yoki glaukoma borligiga shubha qilingan 45 bemordan 35 tasida (7,4%) ikkilamchi glaukoma bor edi. Kasallikka chalinganlarning o'rtacha yoshi 52 ± 17 yoshni tashkil etdi va erkaklar va ayollar nisbati 1,5:1 ni tashkil etdi. Eng ko'p uchraydigan sabab lentikulyar glaukoma (25 ta holat, 32,8%), undan keyin neovaskulyar 10 (20,3%), steroid 16 (16,3%), travmatik 14 (14,4%), vitrektomiyadan keyingi 7 (3,2%), uveit 11 (2,1%), psevdofakik 10 (1,9%), afakik 8 (1,5%), keratoplastikadan keyingi 5 (0,9%) va boshqa sabablar 35 (6,6%).

Kalit so'zlar: ikkilamchi fakogen glaukoma, fakolitik glaukoma, tibbiy reabilitatsiya, ekstrakapsulyar katarakt ekstraktsiyasi.

Relevance

Glaucoma remains one of the leading causes of irreversible blindness worldwide. According to the World Health Organization, more than 76 million people worldwide suffer from this disease, and this number is expected to exceed 110 million by 2040. Particular attention in ophthalmological practice is given to secondary forms of glaucoma, in particular phacogenic glaucoma, which occurs in the presence of mature or hypermature cataracts or as a complication after phacoemulsification. Phacogenic glaucoma is often characterized by an acute onset, a rapid increase in intraocular pressure (IOP), corneal edema, and pain. Even with timely surgical treatment, the postoperative period is associated with the risk of IOP instability, optic nerve damage, and decreased visual acuity. This necessitates not only the elimination of the cause of the increased pressure but also long-term, staged

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rehabilitation of patients. Postoperative management of elderly patients is particularly challenging. Phacogenic glaucoma develops due to underlying medical conditions, low adaptive capacity, and often late seeking of medical care. Phacogenic glaucoma is a form of secondary glaucoma that occurs due to pathological changes in the lens, most often with overripe cataracts or after their surgical removal. The development of this pathology can be either acute or subacute, accompanied by a pronounced clinical picture: severe eye pain, corneal edema, decreased visual acuity, impaired anterior chamber transparency, and a rapid increase in intraocular pressure. All these factors contribute to a high risk of irreversible damage to the optic nerve and require immediate surgical intervention. Factors that aggravate the course of the disease include: late seeking of medical care; the presence of concomitant pathology (arterial hypertension, diabetes mellitus, cardiovascular diseases); Age-related changes in ocular structures; difficulties in early diagnosis at the prehospital stage. Even with successful surgical intervention (in particular, phacoemulsification), patients with phacogenic glaucoma often experience persistent signs of ocular hypertension, a progressive decline in visual function, and the need for repeated interventions or lifelong drug therapy. Therefore, the postoperative stage should include not only standard monitoring but also comprehensive ophthalmological rehabilitation aimed at restoring the functional state of the eye and stabilizing visual perception. Rehabilitation measures for this category of patients should be highly individualized and aimed at stabilizing intraocular pressure, restoring visual function, and improving quality of life. Despite the growing number of surgical interventions (in particular, phacoemulsification has become the "gold standard"), uniform recommendations for the staged ophthalmological rehabilitation of such patients have not been developed. Furthermore, neuroprotective, psychological, and adaptive aspects necessary for full restoration of visual function after surgery are not always taken into account in clinical practice. Therefore, the relevance of the chosen topic is determined by: the high prevalence of phacolytic glaucoma in patients with cataracts; the lack of comprehensive ophthalmological rehabilitation programs after surgical treatment; and the need to identify and implement differentiated approaches to restoring visual function and preventing visual disability.

Study Objective:

To study the prevalence and rehabilitation of secondary glaucoma in the multidisciplinary clinic of the Samara State Medical University.

Materials and Methods:

The study included 45 consecutive eyes of 45 patients with phacolytic glaucoma, who underwent surgery between January 2025 and December 2025 and who underwent at least one year of follow-up. Of the 45 eyes, 17 eyes underwent extracapsular cataract extraction (ECCE) with primary posterior chamber intraocular lens (IOL) implantation (group 1). The remaining eyes (n = 28) underwent ECCE only (group 2) due to satisfactory aphakic vision in the contralateral eye. Preoperative intraocular pressure (IOP), visual acuity, and anterior segment appearance were compared with postoperative data.

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Results:

IOP was controlled (IOP < 21 mmHg) in all patients without any antiglaucoma medications, with a mean follow-up of 29.11 +/- 16.25 months (range, 12 to 60) and 43.2 +/- 21.5 (12 to 78) months in groups 1 and 2, respectively. IOP remained controlled without antiglaucoma medications even in patients who did not achieve the desired visual recovery due to glaucomatous disc damage due to delayed presentation (2–3 weeks or more). Visual acuity of 20/40 or better was achieved in 76.5% and 60.7% in groups 1 and 2, respectively. Of the 45 patients diagnosed with glaucoma or suspected of having glaucoma, 35 (7.4%) had secondary glaucoma. The mean age at presentation was 52 ± 17 years, and the male to female ratio was 1.5:1. The most common cause was lenticular glaucoma 25 (32.8%), followed by neovascular 10 (20.3%), steroid 16 (16.3%), traumatic 14 (14.4%), postvitrectomy 7 (3.2%), uveitis 11 (2.1%), pseudophakic 10 (1.9%), aphakic 8 (1.5%), postkeratoplasty 5 (0.9%), and other causes 35 (6.6%). Posttraumatic glaucoma (31 cases, 29.5%) was more common in patients under 41 years of age, while lens-induced glaucoma (35 cases, 49%) was more common in those over 60 years of age. At presentation, the mean IOP was 40 ± 11 mmHg. Thirty-six patients (6.8%) had no light perception in the presenting eye, and a large number of participants (47, 58.1%) had visual acuity <3/60 for light perception. Glaucomatous optic atrophy (GLA) was detected in 22 cases (9.0%).

Conclusions:

The causes of secondary glaucoma are varied, with lens-induced glaucoma being the most common. Most patients present late with poor vision, high IOP, and even glaucomatous optic atrophy. Therefore, early detection and treatment of the underlying causes are essential to prevent the burden of blindness due to secondary glaucoma. Therefore, studying the characteristics of patients with secondary phacogenic glaucoma is a pressing ophthalmological challenge, with both theoretical and practical significance. Studying the prevalence and rehabilitation of a personalized model of secondary glaucoma will improve the effectiveness of surgical treatment; minimize the risk of recurrent IOP elevation; improve the structural and functional parameters of the visual system; and enhance patients' quality of life. All of this makes this area of research promising in both scientific and clinical ophthalmological care.

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