

**ORBITAL VARIX**© **V.V. Potemkin^{1,2}, E.V. Ageeva¹**¹Academician I.P. Pavlov First St Petersburg State Medical University of the Ministry of Healthcare of the Russian Federation, Saint Petersburg, Russia;²City Ophthalmologic Center of City Hospital No 2, Saint Petersburg, RussiaFor citation: Potemkin VV, Ageeva EV. Orbital varix. *Ophthalmology Journal*. 2017;10(4):61-63. doi: 10.17816/OV10461-63

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✧ In the article, we report on pathogenesis, clinical features, and methods of diagnosis and treatment of orbital varix.

✧ **Keywords:** orbital varix.

ВАРИКОЗНОЕ РАСШИРЕНИЕ ВЕН ОРБИТЫ© **В.В. Потёмкин^{1,2}, Е.В. Агеева¹**¹ФГБОУ ВО «Первый Санкт-Петербургский государственный медицинский университет им. академика И.П. Павлова» Минздрава России, Санкт-Петербург;²СПб ГБУЗ «Городская многопрофильная больница № 2», Санкт-Петербург

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✧ В статье описаны патогенез, клинические проявления, а также методы диагностики и лечения варикозного расширения вен орбиты.

✧ **Ключевые слова:** варикозное расширение вен орбиты.

Orbital varix, which is a venous malformation, belongs to the group of vascular hamartomas. It represents less than 1.3% of all orbital neoplasms [6, 8–10]. The pathogenesis of the disease is not fully understood. An orbital varix is supposed to develop following weakening of the vein wall, leading to blood flow stagnation. The absence of valves in the orbital veins promotes an increased blood volume and slowed blood flow. Thus, the main mechanisms of orbital varix development are weakening of the vein wall and slowing of the blood flow [1, 4].

In most cases, this disease is diagnosed between the ages of 10 and 30 years. *V. orbitalis superior* is affected most frequently, but other orbital veins may also be affected. The main clinical

manifestation of orbital varix is positional proptosis. The proptosis increases when the patient is in the supine position, bends, or performs the Valsalva maneuver [5]. In some cases, the onset of the disease may be acute and may manifest as painful proptosis and decreased vision due to compressive optic neuropathy [1, 12]. However, such an onset is more typical for orbital lymphangioma [2].

Orbital varices can be either primary or secondary. The primary lesion is limited to the orbit and is not associated with intracranial arteriovenous malformations. Secondary lesions are associated with intracranial arteriovenous malformations, which shunt the blood into the orbital venous system and lead to secondary varicose veins of the orbit [3].

Diagnosis of an orbital varix usually is performed by computed tomography (CT), magnetic resonance or color Doppler imaging, ultrasound examination (US), or X-ray examination. At examination, it is necessary to use the Valsalva maneuver [1, 7, 11, 13].

There is no single approach to the treatment of orbital varices. In most cases, patients require only observation. Indications for treatment include reduced visual acuity, pain syndrome, high risk

of complications, and cosmetic defects. Treatment generally includes sclerotherapy, embolization, and ligation [4, 6].

Here, we present a clinical case of orbital varix. In May 2017, a 59-year-old female patient complaining of an intermittent appearance of an oval formation in the middle third of the upper eyelid, mainly with the head inclined downwards, and edema of the upper eyelid, presented to the Microsurgical Department V of Saint Petersburg Budgetary Public Health Facility City Multi-Field Hospital No 2. According to the patient, the symptoms persisted for approximately 7 years. B-scanning of the orbit was performed on an out-patient basis. This revealed a space-occupying lesion of $2.06 \times 1.61 \times 0.94$ cm in the middle third of the upper eyelid, with non-uniform echogenicity and inclusions of average echogenicity. No invasion into the orbit was revealed (Figure 1).

An orbital CT was also performed using two projections in the standard supine position, without use of the Valsalva maneuver, revealing no



Fig. 1. B-scan ultrasonography of the right orbit

Рис. 1. В-сканирование правой орбиты



a



b



c

Fig. 2. Appearance of a patient on admission: *a* — head is straight, *b* — head is tilted, *c* — after tilting the head

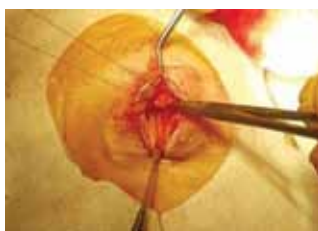
Рис. 2. Внешний вид пациентки при поступлении: *a* — при положении головы прямо, *b* — при наклоне головы, *c* — после наклона головы



a



b



c



d

Fig. 3. Surgical procedure (description in the text)

Рис. 3. Ход операции (описание в тексте)



Fig. 4. Appearance of a patient in 7 days after surgical procedure

Рис. 4. Внешний вид пациентки на 7-е сутки после операции



a



b

Fig. 5. Appearance of a patient in 2 months after surgical procedure

Рис. 5. Внешний вид пациентки через 2 мес. после операции

pathology. During physical examination, a round soft-tissue formation was observed in the outer parts of the orbit, in the projection of the middle third of the upper eyelid. The formation became more prominent with head tilt (Figure 2).

The location of the varix in the anterior orbital region facilitated ligation. The patient underwent transpalpebral suprapariosteal orbitotomy. We accessed the varicose vein directly under the preaponeurotic (central) fat compartment (Figure 3a, 3b) via the fold of the upper eyelid. We fixed the vein with a clamp, sutured with a U-shaped suture (Vicryl 4/00), and coagulated it (Figure 3c). The skin defect was sutured with interrupted sutures (Vicryl 6/00) (Figure 3d).

The patient exhibited no abnormalities over the course of the postoperative period (Figures 4, 5, a, b). There is no single, efficient approach to the treatment of orbital varices due to the high risk of complications in the intra- and postoperative periods. Varix location in the anterior parts of the orbit enables optimal visualization during surgery and safe ligation performance.

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Information about the authors

Vitaly V. Potyomkin — PhD, assistant professor. Department of Ophthalmology. Academician I.P. Pavlov First Saint Petersburg State Medical University; ophthalmologist. City hospital No 2, Saint Petersburg, Russia. E-mail: potem@inbox.ru.

Elena V. Ageeva — ophthalmologist. City Hospital No 2, Saint Petersburg, Russia. E-mail: ageeva_elena@inbox.ru.

Сведения об авторах

Виталий Витальевич Потёмкин — канд. мед. наук, доцент кафедры офтальмологии. ФГБОУ ВО «Первый Санкт-Петербургский государственный медицинский университет им. акад. И.П. Павлова» Минздрава России; врач-офтальмолог. СПб ГБУЗ «Городская многопрофильная больница № 2», Санкт-Петербург. E-mail: potem@inbox.ru.

Елена Владимировна Агеева — врач-офтальмолог. СПб ГБУЗ «Городская многопрофильная больница № 2», Санкт-Петербург. E-mail: ageeva_elena@inbox.ru.