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"MORNING GLORY" SYNDROME (CLINICAL CASE)

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Annotation. Relevance. One of the optic nerve malformations with enlargement and excavation of the optic disc in the form of a whorl is the "morning glow" syndrome. **Purpose of the study.** To present a clinical case of a 13-year-old child with a rare anomaly of excavation of the optic disc of the right eye. **Materials and methods.** Standard ophthalmological and instrumental examination. **Results and conclusion.** The clinical picture and diagnostic methods necessary to make a diagnosis are reflected. The child received 2 courses of a special therapy program aimed at correcting amblyopia. Visual acuity increased from 0.01 to 0.02 with correction. The patient is recommended to undergo active follow-up and repeat courses of pleoptic treatment with stimulating devices

Key words: «creeper» syndrome, «morning glory» syndrome, optic disk excavation, developmental anomaly.

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СИНДРОМ «УТРЕННЕГО СИЯНИЯ» (клинический случай)

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Аннотация. Актуальность. Одним из пороков развития зрительного нерва с увеличением и экскавацией диска зрительного нерва в виде вьюнка является синдром «утреннего сияния». **Цель исследования.** Представление клинического случая наблюдения ребенка 13 лет с редко встречающейся аномалией экскавации диска зрительного нерва правого глаза. **Материалы и методы.** Стандартное офтальмологическое и инструментальное исследования. **Результаты и заключение.** Отражены клиническая картина и методы диагностики, необходимые для постановки диагноза. Ребёнок получил 2 курса специальной программы терапии, направленной на коррекцию амблиопии. Острота зрения повысилась от 0,01 до 0,02 с коррекцией. Пациенту рекомендовано активное динамическое наблюдение и повторные курсы плеоптического лечения стимулирующими аппаратами.

Ключевые слова: синдром «вьюнка», синдром «утреннего сияния», экскавация диска зрительного нерва (ДЗН), аномалия развития.

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«ERTALABKI YOG'DU» SINDROMI (KLINIK HOLAT)

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Annotatsiya. Dolzabligi. Ko'ruv nerv rivojlanishining patologiyalaridan biri ko'ruv nervining kengaytirish va ekskavatsiyasi («ertalab porlashi» sindromi). **Tadqiqot maqsadi.** 13 yoshli bolada o'ng ko'zning optik diskini qazib olishning kam uchraydigan anomaliyasi bilan kasallangan klinik holatni taqdim etish. **Materiallar va usullar.** Standart oftalmologik va instrumental tekshiruv. **Natijalar va xulosa.** Tashxis qo'yish uchun zarur bo'lgan klinik ko'rinish va diagnostika usullari aks ettirilgan. Bola ambliyopiyani tuzatishga qaratilgan maxsus terapiya dasturining 2 kursini oldi. Ko'rish keskinligi tuzatish bilan 0,01 dan 0,02 gacha ko'tarildi. Bemorga faol kuzatuvdan o'tish va stimulyator asboblar bilan pleoptik davolash kurslarini takrorlash tavsiya etiladi.

Kalit so'zlar: «bog'lovchi o't» sindromi, «morning glory» sindromi, ko'ruv nerv diskining (KND) excavatsiyasi, rivojlanish anomaliyasi.

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Relevance. Diseases of the optic nerve are in first place among the causes of low vision in children (34.8%) [3,5,15]. There are several different optic nerve abnormalities, some of which have a characteristic appearance. The most common anomalies are precisely the anomalies of the excavation of the optic nerve, one of which appears to be the "morning glory syndrome" (MGS). It was first named by Dr. W. Reis in 1908, who noticed that the fundus of the eye resembles a flower in shape, which is why the second name for this pathology is "bindweed" syndrome — the blossoming purple bindweed of the South American morning glory. According to available data, its frequency is 1 case in 2 million people. Since this pathology is extremely rare, epidemiological data and etiology are still not precisely known, its pathogenesis has not been sufficiently studied, there are only several hypotheses for the development of this syndrome [7,8,9]. According to the literature, this is a unilateral, non-progressive pathology (up to 70% of cases affect the right eye), occurs mainly in females, more often in children [6, 11].

A number of authors believe that this syndrome is combined with various anomalies in the development of the visual organs and other somatic diseases [12,14]. Their visual acuity is usually reduced, and retinal detachment occurs in 1/3 of the affected eyes [10,13]. Rehabilitation of children with this pathology involves correction of developing ametropia with glasses or contact lenses, and the use of pleoptic methods using occlusions of the better-seeing eye [2]. With a high degree of anisometropia and strabismus, surgical methods are effective [1].

Therefore, early diagnosis of congenital anomalies of the optic nerve contributes to the success of therapeutic measures to improve visual acuity and reduce the degree of amblyopia [4]. Not only are the diseases themselves rare, but our personal experience of treating such patients can be called rare. For this reason, we decided to present our case.

The purpose of the study. Is to present the results of a clinical case with morning glow syndrome, a rare abnormality of optic nerve excavation.

Materials and methods. Patient A., from Jambay district of Samarkand region, born in 2010. appealed to the department of eye diseases of the multidisciplinary clinic of the Samarkand state medical university with complaints of low vision and deviation of the eyeball to the outside. From the anamnesis it is known (according to the mother) that the vision in the right eye has been poor since childhood; the cause of the disease is not known and is not associated with anything. We contacted the district clinic at our place of residence several times. Glasses were prescribed, which the patient could not tolerate. The reason for contacting our department was that over the last 2–3 years, divergent strabismus has appeared. Heredity is not burdened.

To assess the state of the functions of the organ of vision and the refractive apparatus, standard ophthalmological studies were carried out: biomicroscopy, determination of refraction with a narrow pupil and against the background of cycloplegia (on an autorefractometer and skiascopy), determination of visual acuity using the Golovin-Sivtsev table (visometry), measurement of the anterior-posterior axis (PZO) of the eye using an echo-ophthalmograph (ultrasound biometry), examination of the fundus by direct and reverse ophthalmoscopy (ophthalmoscopy), examination of the peripheral visual field on a spheroperimeter (perimetry), measurement of intraocular pressure (ophthalmotonometry) (Table 1.)

Autorefractometry: complex myopic astigmatism that could not be corrected.

Ultrasound scanning: OD is a thickened cord that goes from the optic disc to the anterior part of the eye. There are single floating opacities in the vitreous body (Figure 1).

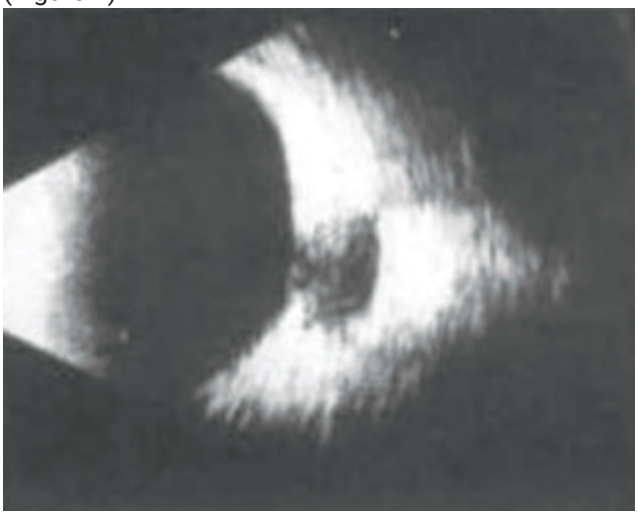

Figure 1. Ultrasound of the right eyeball

Table 1. Ophthalmological status on admission

Divisions of the eyes	OD	OS
Eyelids Correct position	Correct position	
Conjunctiva, lacrimal organs	Pale pink, smooth Lacrimal puncta are immersed in the lake of tears	
Eyeball	The position of the eyes in the orbit is correct, the eyeball moves in full, symmetrical location	
	Deflected outward by 20°	Ball-shaped
Sclera	White, smooth	
Cornea	Transparent, shiny, mirror-like, sensitive, smooth, spherical	
Anterior chamber	Medium depth, transparent moisture	
Iris	Relief preserved; color not changed	
Pupil	Narrow, black, clear boundaries, round in the center, reaction to light is lively	
Vitreous body	Transparent	
Lens	Transparent	
Fundus (reflex from the fundus is pink).	The optic disc is pale, enlarged in size (megalopapilla), with a large deep excavation, and there is glial tissue around the disc. The vessels are straight and of the same caliber and are defined radially along the edge of the excavation.	The optic disc is pale pink, the boundaries are clear, the ratio of the vessels is not changed. The retina is present in all sections.
Visus (without correction)	0,01	1,0
Visus (with correction)	sph -2,75Д ^ cyl -2,0 Д axa 90°= 0,01	
IOP	17 mm Hg	19 mm Hg
Refraction	M	Em
Muscles of the eyeball	Movement of the muscles of the eyeball is not limited	

Table 2. Ultrasound biometrics of eyes

Eyes/Options	**OD, mm**	**OS, mm**
anteroposterior axis length	23,1	22,6
anterior chamber depth	3,6	3,2
lens thikness	3,8	3,8

Ultrasound biometry: the data of ocular biometric parameters of eyes are presented in Table 2.

Perimetry: scotomas in the field of view on the right eye.

Study of the orbit and brain using MRI: deformation of the posterior parts of the right eyeball in the area of the optic nerve head like a hernial protrusion measuring 0.3x0.3x0.2 cm. To clarify the diagnosis, the patient was sent to the Eye Center of A.A. LLC. Yusupov» for a detailed examination of the fundus using a retinophot device and fundus lenses, which allow not only to examine the retina, optic disc, vessels, but also to photograph the fundus. Examination with a fundus lens OD: Optic disc is pale, large in size with a funnel-shaped depression, surrounded by a white circular ring, a wide and deep non-round excavation, which is filled with a whitish translucent mass, reminiscent of a thin translucent (nylon) white fabric. chorioretinal changes with areas of pigment. The vessels are visible along the edge radially, their number is increased, they start from the periphery of the excavation, the distinction of arterioles and venules is difficult. The diagnosis was established on the basis of: the presence of a shallow excavation in the posterior pole of the eye, in the center of which a glial bundle is identified, and along the perimeter there are atrophic areas of the retinal pigment epithelium, and an abnormally straight course of the retinal vessels. OS: the optic disc is pale pink, the boundaries are clear. The vessels are branched, their course and caliber are not changed. The retina is dense, adjacent in all sections (Figure 2).

Based on the above examinations, a diagnosis of “morning glow” syndrome, secondary divergent monolateral strabismus, and obstructive amblyopia of the right eye was made.

This girl was prescribed pleoptic treatment using occlusions of the better-seeing eye for the treatment of amblyopia, and spectacle or contact vision correction in the future.

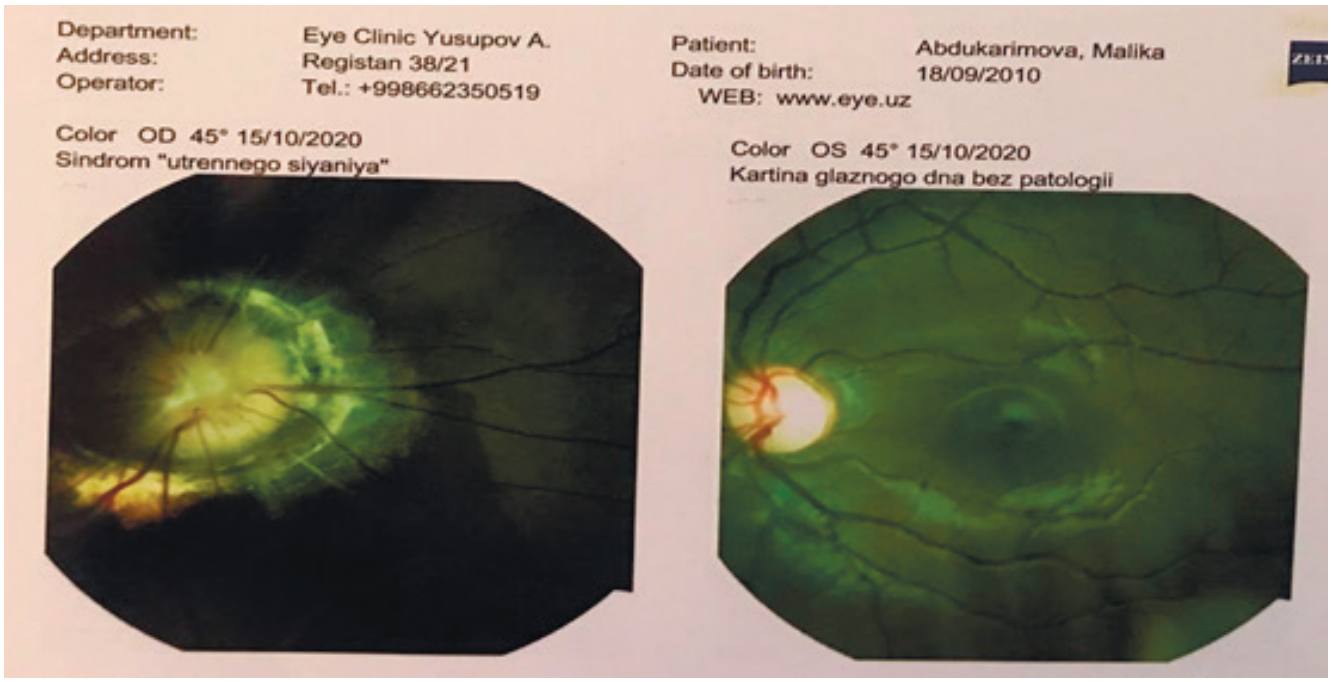

Figure. 2. Fundus picture: examination with fundus lens OD and OS.

Results and its discussion. The patient was sent to the Samarkand Regional Children's Multidisciplinary Center, in the children's eye department of which there is an Amblio care system — a high-tech development of complex treatment for amblyopia. There is an Amblio care package, which includes: stimulation of the optic nerve using physiotherapeutic methods, computer pleoptics; frequency contact stimulation of the macula, etc.

Amblyopia is a complex functional condition; it does not go away on its own and is almost impossible to correct optically. Therefore, a course of treatment is required, it is necessary to take several courses. The number of sessions and courses is determined by the attending physician.

For this patient, a pediatric ophthalmologist and strabismologist selected an individual therapy program (stimulating devices) aimed at effectively correcting this amblyopia, helping to cope with congenital disorders.

The advantages of these hardware techniques are: effectiveness during a course of treatment; non-invasive, painless, hardware treatment provides a general healing effect, has a strengthening, stimulating effect.

After the first course, a re-examination was carried out to assess the effectiveness of the therapy. This is very important — to monitor and, if necessary, change something or prescribe additionally to stimulate vision.

The method of transcutaneous electrical ophthalmic stimulation is a method of improving vision in patients with partial atrophy of the optic nerves by activating the peripheral part of the visual analyzer through its transcutaneous electrical stimulation in a special mode using an electrical stimulator developed for this purpose. The course included 12 sessions of 10–15 minutes each. In this case, visual acuity can increase from hundredths to several tenths and from several tenths to complete restoration of vision (Figure 3).

Figure 3. CMS-12

Figure. 4. ESOFI-01

Table 3. Differential diagnosis of congenital anomalies of optic disc excavation

Types of anomaly excavation of the optic disc	Indicators					
	Optic nerve disc	Excavation	Retinal vessels	Retinal detachment	Eye anomalies	Congenital vascular anomaly
Syndrome "morning glow"	Enlarged, poorly differentiated, in the center of the excavation	Funnel-shaped depression with sagging edges, shallow excavation	Changed	Often	Rarely	Often
Coloboma optic nerve	Enlarged, the upper edge coincides with the excavation	Spherical, displaced downwards	-	Often	Often	Often
Peripapillary staphyloma	Relatively normal, in the center of the excavation	Cup-shaped, round defect, deep excavation	-	-	-	Very rare

CMS-12 is a magnetic-light stimulator — the device is designed to stimulate the organ of vision in diseases such as partial atrophy of the optic nerve, amblyopia, etc. The action of the device is based on stimulation of the optic tract with synchronized light and magnetic impulses. Stimulation is carried out through a closed eyelid, which greatly simplifies the use of the device when treating young children (Figure 4).

Dynamic observation of the patient 3 weeks after the use of stimulating devices: the patient notes a slight improvement in visual acuity of the right eye: from 0.01 to 0.02 with correction. A positive therapeutic effect (increased acuity and expansion of visual fields, reduction and disappearance of scotomas) can be observed with repeated courses of electrical stimulation.

Congenital anomalies of optic nerve excavation often mislead practitioners. Therefore, the "morning glow" syndrome must be differentiated from optic disc coloboma, peripapillary staphyloma. Adequate diagnosis of anomalies has a huge role in genetic counseling for children. The fundamental differences between these anomalies are given in Table 3, based on ophthalmoscopy data.

Diagnosis of this disease can cause difficulties for ophthalmologists, since its clinical manifestations are polymorphic, and in the domestic literature there are only a few reports characterizing the symptoms and tactics of managing this pathology.

Modern diagnosis of this pathology has made it possible to stabilize further progression of the process, prevent the development of retinal detachment and improve visual functions. Infrequently occurring diseases are of interest to doctors, since, first of all, novice ophthalmologists have not yet encountered such diseases in their personal practice.

Conclusions. 1. In the practice of ophthalmologists, the "morning glow" syndrome is rare and can be mistaken for optic disc coloboma, peripapillary staphyloma.

2. Pediatric ophthalmologists should be vigilant and attentive to the symptoms of eye pathologies of unknown etiology: it is advisable to refer such children to specialized ophthalmological clinics to clarify and confirm the diagnosis, as well as to determine further treatment tactics.

3. Active follow-up is recommended for all patients.

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