Treatment of a Persistent Hyaloid Membrane in Hypoplasia of the Optic Nerve

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ABSTRACT

Purpose of the study to study the effectiveness of neuroprotectors in the persistence of the hyaloid membrane

Keywords: hyaloid membrane

The relevance of research.

The frequency of congenital pathology of the organ of vision is 2-4%. Genetic changes are the cause of blindness in children in 50% of cases [1,2,5]. The formation of the optic disc (OND) and optic nerve fibers occurs in the period from 3 to 10 weeks of gestation. Violations of the processes of embryogenesis and differentiation during this period lead to anomalies in the development of the optic nerve [3,4,6]. Thus, disturbances in the process of closing the embryonic fissure lead to coloboma, disturbances in the replacement of ganglion cells with fibers to hypoplasia or aplasia of the optic nerve, disturbances in the involution of hyaloid vessels to the persistence of the primary vitreous body. Most of these pathological conditions are sporadic [7,8,11].

Congenital pathology of the optic nerve head occurs under the influence of hereditary factors, with intrauterine infection (rubella, toxoplasmosis, cytomegalovirus and syphilis), toxins (fetal alcohol syndrome), vascular diseases, injuries (rare injuries during paracentesis), metabolic endocrine diseases (diabetes mellitus in mother) [9,10,12]. Some drugs given to pregnant women and environmental chemicals to which they are exposed lead to congenital ocular pathology [13,14,15]. Therefore, it is important to carefully clarify all possible influences of damaging factors during pregnancy. Many congenital anomalies can cause pathological conditions in adulthood, for example: optic disc fossa, oblique entry of the optic disc, drusen of the optic disc, etc.

The problem of managing this category of patients is especially relevant, since the child's body continues to develop and therapeutic measures can contribute to the accelerated differentiation of the ONH tissue, which will reduce the percentage of visually impaired and blindness from this pathology in the future. Therefore, the study of clinical and genetic features and the development of a scheme for managing patients with ONH anomalies is an urgent problem in ophthalmology.

Purpose of the study.

To study the effectiveness of neuroprotectors in the persistence of the hyaloid membrane.

Materials and methods.

The material for the study was 9 patients (11 eyes) with a persistent hyaloid membrane of the ONH, aged from 7 to 21 years. From HEX 6 girls, 3 boys. Distribution of patients by age: from 7 to 14 years - 5 patients, from 15 to 18 years - 4 patients.

Distribution of patients by groups: Group 1 - 4 patients received "the following treatment: local therapy included dexamethasone 0.2 ml and dicynon 0.2 ml in the temple area subcutaneously, vitamins A, B 1, B 2, B 12, B 6 were administered as a general therapy Group 2 patients received the same treatment, as well as parabulbar nootropic - cerebrolysin 0.5 ml. Gliatilin (choline alfoscerate) inside 1 capsule 3 times a day. Of the physiotherapeutic procedures, exposures were performed according to E.S. Avetisov.

For the diagnosis of this pathology, anamnestic and ophthalmological examination methods were used: determination of visual acuity, pupillary reactions, measurement of intraocular pressure, external examination, direct ophthalmoscopy, biomicroscopy of the fundus, reverse ophthalmoscopy of the fundus.

Particular attention was paid to the results of electrophysiological studies (electroretinography, visually evoked potentials of the optic nerve), A and B scans, ultrasound color Doppler mapping. They also performed three-dimensional magnetic resonance imaging (MRI) of the brain, computer eye perimetry to determine the volume of the blind spot and to exclude oncological processes, an ophthalmo-oncologist was consulted.

Results.

From the anamnesis of patients, it was found that heredity is present in 6 patients, in 3 patients, since the mother had a viral infection of the upper respiratory tract during pregnancy.

Ophthalmological methods of examination: in group 1, before treatment, visual acuity was 0.07±0.01, it was not corrected during correction, the visual field indicators were as follows: 435±15.0 degrees. On external examination: the eyelids are located correctly, the growth of the eyelashes is correct, the lacrimal ducts are passable, no deformities were found in the orbit. Biomicroscopy of the eye revealed sluggish pupillary reactions, measurement of intraocular pressure: 16 ± 2.0 mm Hg, transparent lens. Eye refraction convex 2.0±1.0. With direct ophthalmoscopy: the optic disc is pale pink in color, rounded, the boundaries are fuzzy, the hyaloid membrane departs from the optic nerve disc in the form of a strand through the vitreous body towards the lens, almost reaching the last one, the arteries and veins are slightly narrowed, the macular reflex is smoothed .

On electroretinography, a pronounced decrease in rod and cone responses was observed. On B scan: there is a pronounced destruction in the vitreous body, a posterior detachment of the hyaloid membrane, a vitreoretinal cord is observed fixed to the optic nerve head, the retina is adjacent, the contours are uneven.

The ophthalmo-oncologist found the remains of the hyaloid artery, no oncopathologies were identified. No evidence of brain anomalies was found on MRI. With computer perimetry, there is an increase in the size of the blind spot.

In group 2, before treatment, visual acuity was 0.08±0.01, it was not corrected during correction, the visual field indicators were as follows: 465±10.0 degrees. On external examination: the eyelids are located correctly, the growth of the eyelashes is correct, the lacrimal ducts are passable, no deformities were found in the orbit. Biomicroscopy of the eye revealed sluggish pupillary reactions, measurement of intraocular pressure: 18±2.0 mm Hg, transparent lens. Eye refraction convex 2.5±1.0.

With direct ophthalmoscopy: the optic disc is pale pink in color, round in shape, the boundaries are indistinct, the hyaloid membrane departs from the optic disc in the form of a strand through the vitreous body towards the lens, almost reaching the last one,

the arteries and veins are slightly narrowed, the macular reflex is slightly smoothed.

On electroretinography, a pronounced decrease in the rod response was observed. On B scan: there is a pronounced destruction in the vitreous body, a posterior detachment of the hyaloid membrane, a vitreoretinal cord is observed fixed to the optic nerve head, the retina is adjacent, the contours are uneven. Also, the ophthalmo-oncologist found the remains of the hyaloid artery, no oncopathologies were detected. No evidence of brain anomalies was found on MRI. With computerized perimetry, there is an increase in the size of the blind spot.

After the treatment, the following was observed: in group 1, visual acuity increased to 0.1±0.05, visual fields were 445±10.0 degrees. With direct ophthalmoscopy, the fundus, B scanning and MRI studies without dynamics.

In group 2, visual acuity was 0.4±0.05, visual fields increased to 495±10.0 degrees. The picture of the fundus, as well as MRI data unchanged, with computer perimetry, a narrowing of the size of the blind spot was noted.

Conclusions.

The use of Cerebrolysin and Gliatilin in the complex treatment of congenital anomalies of the optic nerve head (OND), in particular, the persistent hyaloid membrane of the optic nerve disc, has an integrated effect on the function of neurons, thereby increasing visual functions, increasing visual fields, and reducing the size of the blind spot.

References

1. Gulyamova, Shakhzoda S., et al. "ALGORITHM OF COMPUTER PROGRAM FOR PERSONALIZED DYNAMIC OBSERVATION OF HYPERTENSIVE PATIENTS IN PRIMARY HEALTH CARE." *Central Asian Journal of Medicine* 2020.1 (2020): 5-19.
2. Kamilov, Kholidjon M., et al. "Comprehensive Approach To The Treatment Of Congenital Anomalies Of The Optic Nerve." *Solid State Technology* 63.6 (2020): 15178-15201.
3. Khasanov N. N., Zakirkhodzhaev R. A. Clinical manifestation of ophthalmopathological signs in vertebrobasilar insufficiency.— Advanced Ophthalmology. — 2023;1(1):177-179. DOI: https://doi.org/10.57231/j.ao.2023.1.1.041
4. Rustam, Zakirkhodjaev, and Kamalova Komila. "ANALYSIS OF RESULTS OF INTEGRETED TREATMENT OF PATIENTS WITH UVEITIS IN SYSTEMIC DISEASES OF CONNECTIVE TISSUE." *Editorial Board of the Uzbek medical journal*: 32.
5. Zakirhodjaev, R. A. "Features of surgical treatment of congenital cataracts with the implantation of an intraocular lens and thereabilitationof childrenwith artifakia." *Referens. Diss… c. м. s* 2009 (2009).
6. Abdukarimovich, Oralov Behruz. "USE OF PHOTODYNAMIC THERAPY IN CHEMICAL BURNS OF DIFFERENT ETIOLOGIES OF THE SURFACE OF THE EYE." *International Journal of Medical Sciences And Clinical Research* 2.11 (2022): 36-41.
7. Zakirhodjaev, R. A. "Features of surgical treatment of congenital cataracts with the implantation of an intraocular lens and thereabilitationof childrenwith artifakia." Referens. Diss… c. м. s 2009 (2009).
8. Zakirhodjaev, Rustam Asralovich. "Clinical management of the patients with optic disc pit." *Pediatrician (St. Petersburg)* 4.2 (2013): 62-64.
9. Zakirhodjaev, Rustam Asrorovich. "Prophylaxis of central serous choriopathy in the patients with fossa of optic nerve." *The Third European Conference on Biology and Medical Sciences*. 2014.
10. Бахритдинова, Ф. А., et al. "Оценка состояния слезного комплекса у пациентов с синдромом сухого глаза в процессе лечения." *Российский офтальмологический журнал* 12.4 (2019): 13-18.

11. Нарзикулова, Кумри Исламовна, et al. "Разработка и оценка эффективности фотодинамической терапии при воспалительных заболеваниях глазной поверхности." Офтальмологические ведомости 13.3 (2020): 55-65.
12. Zakirkhodjaev, R. A., et al. "THE APPLY OF VARIOUS CONCENTRATIONS OF TROPICAMIDE IN ACCOMMODATION SPASM THERAPY." *Central Asian Journal of Pediatrics* 2.1 (2019): 220-222.
13. Zakirkhodzhaev R. A., Makhmudov R. Sh. Ophthalmotonus disorders in ededematic form of endocrine opthalmopathy. Advanced ophthalmology. 2023;3(3):59-62 DOI: https://doi.org/10.57231/j.ao.2023.3.3.012
14. Zokirkhozhaev R. A., Zainiddinova G. U., Asrorkhozhaeva I. R. Features of the clinical course of optic neuropathy in patients with discirculatory encephalopathy.—Advanced Ophthalmology. —2023;1(1):65-68. DOI: https://doi.org/10.57231/j.ao.2023.1.1.015
15. Hasanov, N. N., and R. A. Zakirkhodjaev. "Principles of Screening of Visual Functions in Cases of Vertebro-Basiliar Deficiency." *Scholastic: Journal of Natural and Medical Education* 2.4 (2023): 19-23.