

## **OPTIMIZING THE DIAGNOSIS AND TREATMENT OF DUANE SYNDROME**

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**Abstract.** Duane syndrome is a rare anomaly in the development of the extraocular muscles, manifested by limited mobility of the eyeball, especially to the sides, and accompanied by various visual impairments [5, 9]. This pathology is of great importance in ophthalmology, as it can significantly reduce the quality of life of patients, including due to the development of strabismus [3, 7] and retraction of the eyeball [1, 2, 6, 8]. In Uzbekistan, data on the prevalence and clinical characteristics of Duane syndrome remain insufficient [4]. Therefore, improving diagnostic and treatment methods for this syndrome is an urgent task for medical practice.

**Keywords:** Dichorionic, monochorionic, pathology of the placenta and umbilical cord, twin pregnancy

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**The aim of the study** is following the clinical features of Duane syndrome and developing optimal approaches to its diagnosis and treatment to improve visual and cosmetic indicators in

patients.

**Materials and research methods.** The study included 10 patients diagnosed with Duane syndrome who were treated in the eye diseases department of the multidisciplinary clinic of the Samarkand State Medical University. The patients' ages ranged from 5 to 16 years, including 6 boys and 4 girls.

All patients had varying degrees of limitation of outward (temporal) eye movement, diplopia, and corresponding complaints of visual impairment.

The following methods were used to establish a diagnosis and assess the condition of patients: ophthalmoscopy and biomicroscopy to assess the condition of the ocular structures, measurement of the angle of strabismus according to Hirschberg and synoptophore, magnetic resonance imaging (MRI) of the orbit to exclude other structural anomalies of the oculomotor muscles and nerves, and to determine the localization of the extraocular muscles.

Therapeutic treatment tactics depended on the severity of the syndrome. Patients with mild manifestations of the syndrome received conservative treatment, including eye exercises and observation. Patients with severe forms, including pronounced strabismus and retraction of the eyeball, underwent surgical correction using the recession or resection of the eye muscles.

**Technique of operation:** against the background of recession of the internal rectus and resection of the external rectus muscles according to the dosage of Avetisova and Makhkamova, the upper rectus muscle is exposed, as well as the lower rectus muscle - a preliminary suture is applied to the outer sides of these muscles, using small conjunctival scissors, 1/3 of the outer part of the muscle fibers is dissected from the attachment site. These muscles are divided towards the fornix, then the external rectus muscle is exposed, which is taken on a hook and the separated above-mentioned muscles are transposed in the projection of the external rectus muscle and attached using a frenulum suture. A continuous suture is applied to the wound.

**Results and discussion.** Four (40%) patients with mild forms of Duane syndrome showed improvement in their general condition after conservative treatment. They reported a reduction in symptoms of discomfort and stabilization of visual functions. These patients did not require surgical intervention, as the disorders did not significantly affect their quality of life.

6 (60%) patients with more severe forms of the disease underwent surgical treatment. After the operations, most of them showed significant improvement: elimination of diplopia and reduction of the degree of strabismus. Three patients also showed improvement in the appearance of the eyes due to elimination of retraction.

Patients who underwent surgical treatment showed a high degree of satisfaction with the results: 3 (50%) patients reported complete restoration of eye symmetry and normalization of visual functions, in the remaining 3 (50%) patients, cosmetic and functional improvements were less pronounced, but stable.

The obtained results confirm the effectiveness of a differentiated approach to the treatment of Duane syndrome. Surgical methods allow achieving significant success in correcting deviations, and conservative treatment is effective in mild forms of the disease.

**Conclusions.** 1. Duane syndrome requires a comprehensive approach to diagnosis and treatment, using both conservative and surgical methods.

2. Mild forms of the syndrome can be successfully treated with conservative methods, including regular ophthalmological examinations and eye exercises.

3. Surgical intervention is indicated for severe forms of the disease and helps eliminate visual and cosmetic disorders, significantly improving the quality of life of patients.

4. Further research is needed to improve the diagnosis and treatment of Duane syndrome in the context of Uzbekistan, with an emphasis on long-term treatment outcomes.

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