

## INTRAOPERATIVE ADMINISTRATION OF HEMAZA IN THE TREATMENT OF CHILDREN WITH TRAUMATIC CATARACTS

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Traumatic cataract, being the most frequent and severe outcome of eyeball injuries, occupies a leading place in the structure of visual disability in children. It most often (76-84.6% of cases) develops as a result of penetrating wounds. A distinctive feature of traumatic cataracts in children is its combination with post-traumatic changes in the eyeball [1].

From the beginning of the development of intraocular correction, unilateral traumatic cataracts and post-traumatic aphakia were considered the main indications for implantation of intraocular lenses in children. In children with traumatic cataracts, anterior and posterior synechiae and posttraumatic deformation of the capsular sac, implantation of posterior chamber IOLs is a traditional technique [3]. A certain traumatic nature of the operation and the degree of postoperative exudative reaction dictate the need to find new, highly effective ways to prevent them.

Until recently, the arsenal of ophthalmic surgeons did not have a drug with sufficient specific fibrinolytic activity that could be used in surgical interventions for traumatic cataracts. With the appearance of the original recombinant pro-urokinase ("Hemase") preparation, which is comparable in fibrinolytic activity to the tissue plasminogen activator (t-PA), it became necessary to study the possibility of its use in pediatric ophthalmology [2]. We have not found a description of the results of intraoperative use of this drug for traumatic cataracts in children in the literature.

In connection with the above, **the aim of this study** was to optimize the results of a comprehensive surgical technique for traumatic cataracts in children using a recombinant prourokinase (Hemase) preparation.

## RESEARCH MATERIAL AND METHODS

47 children (47 eyes) were operated on with traumatic cataracts that developed in 78.8% of cases due to penetrating wounds (37 eyes), in 21.3% - as a result of contusions (10 eyes), complicated by corneal scars in 75.0% of cases and post-traumatic pathology of the iris in 65.6% of cases. 22 children (22 eyes) and 25 people (25 eyes) were operated by the traditional method using the Hemase preparation.

The technique of the operation was traditional. Cataracts were removed by aspiration through sclerocorneal tunnel incisions (2.7-3.0 mm), synechiotomy was performed in 15 children (48%) before IOL implantation. Soft folding IOLs Acrysof, Alcon models MA60VM and SA30AL and Hydroview, Storz models M60H were implanted using viscoelastics Provisc, Viscoat, Ocucoat. In seven cases, in the presence of post-traumatic sphincter tear and other pathology of the iris, after implantation of the IOL, sutures were applied to the pupillary edge and iris by closed iridoplasty. In 25 eyes (84.3%) with pronounced splices in the anterior chamber with damage to the anterior lens capsule, which led to deformation of the capsular sac, massive effusion of fibrin into the anterior chamber of the eye or hyphema, the anterior chamber of the eye was washed with a hemase solution. In this case, 1 ampoule of the drug was dissolved in 1 ml of 0.9% NaCl solution, after which 0.2 ml (1000 ME) or 0.1 ml (500 ME) of the resulting solution was diluted to 0.5 ml with 0.9% NaCl solution.

Implantation into the capsular sac was performed in 15.7% of cases (5 eyes) in the presence of complete traumatic cataracts (most often contusion) and in the absence or minor fusion of the iris with the lens capsule.

The effectiveness of treatment was evaluated according to the following criteria: increased visual acuity, relief of signs of inflammation, resorption of inflammatory exudate and fibrinous plaque, relief of hemorrhagic foci, and reduction of treatment time.

## RESEARCH RESULTS

In the postoperative period, during operations performed according to the traditional method, an exudative reaction of I-II degree was observed in six eyes (18.8%), the appearance of fibrinoid exudate – in 18.8% of cases (6 eyes), relapse of posterior synechiae-in 15.6% (5 eyes), hyphema-in 15.6% (5 eyes), pupil capture - 6.3% (2 eyes), hemophthalmos - 6.3% (2 eyes).

Visual acuity increased to 0.3-1.0. The need for intraoperative inclusion of the Hemase preparation in children's traumatic cataracts has become obvious to prevent the development of the above-mentioned complications.

The operations performed with the use of Hemase were performed without any special features. In all cases, it was possible to form a continuous circular capsulorhexis in the area of separated anteroposterior synechiae and implant a folding IOL in the capsular sac, in the presence of its post-traumatic deformities. The postoperative period was smooth: there was no exudative reaction of the eye membranes to the operation, recurrence of synechiae and pupil capture. Children received the usual anti-inflammatory therapy in the form of three instillations of Neladex drops for 5-7 days. At discharge, visual acuity increased in all children to 0.5-1.0.

In the long-term period (2-6 months), 13 patients operated on using the Hemase preparation were observed. In all cases, the IOL position was stable, and there were no violations of the IOL position (dislocation, lens decentration, or pupil capture). Visual acuity was 0.6-1.0.

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