

INSTABILITY OF THE CAPSULE-LIGAMENT DEVICES IN CHILDREN

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Abstract. *In this article, the authors studied an analysis of the occurrence and causes of instability of the capsular-ligamentous apparatus in children. For the period 2014-2023. The authors examined 78 children (78 eyes) from 2 to 15 years old, (average age 3.7 years) patients undergoing inpatient treatment in the eye department of the TashPMI clinic (Tashkent Pediatric Medical Institute) with insufficiency of the capsular ligamentous apparatus.*

Keywords: *capsular-ligamentous apparatus; low vision; blindness; visometry; biomicroscopy; keratometry; ophthalmoscopy.*

Relevance. The history of the development of ophthalmology is inextricably linked with cataract surgery, since cataract continues to be the main cause of functional failure of the visual analyzer in the world, causing 33% of low vision and 51% of total global blindness, with 82% of all blind people over 50 years of age (Fedorov S.N. ., 1997; Pascolini D., Mariotti S. P., 2011; Fraser M. L. et al., 2013; The relevance of the problem of surgical treatment of complicated cataract is also determined by the fact that, according to the literature, in 5-15% of cases it is accompanied by obvious and in 20% of cases by hidden concomitant weakness of the ligamentous apparatus of the lens, which complicates the surgical technique and significantly increases the risk of developing surgical and postoperative complications , thereby can significantly reduce the functional result of the operation [1,2,4,10,11,12]. First proposed by Malbran E. in 1986, the method of transciliary suture fixation of IOLs is becoming increasingly widespread when removing a subluxated or dislocated lens into the vitreous body, rupture of the lens capsule during surgery, IOL replacement, secondary implantation [1,3,5,6,13 ,14]. The literature presents various methods of transciliary fixation, which differ in the method of thread placement, the IOL fixation meridian, surgical access, and the use of various models of intraocular lenses (Malyugin B.E., Rahim Fayez, Demyanchenko-Shulga S.K., 2005; Dzharulla-Zadeh Ch. D., Jalilova E. R., 2010; Scharioth G. B. et al., 2010; al., 2013).

It is known that nowadays insufficiency of the capsular ligamentous apparatus is a pressing problem in pediatric ophthalmology throughout the world, remaining one of the most difficult pathological conditions in terms of surgery and severe in terms of outcomes. It is known that without surgical treatment, this disease leads to low vision in 100% of cases. The problems of treating insufficiency of the capsular ligamentous apparatus in children are most acute due to the lack of specialists and equipment in state children's medical institutions [7,8,9,15,16].

The prevalence of ligamentous weakness in patients with cataracts is, according to various authors, 15-20%. In addition, approximately 20% of patients have hidden disorders of the ligamentous apparatus of the lens, which cannot always be identified in the preoperative period. Defects in the fibers of the ligament of Zinn, identified already on the operating table, often force the surgeon to change the surgical tactics and urgently solve the problem of choosing an IOL (intraocular lens) with adequate fixation in this situation [16,17,18,19].

Purpose of the study. To analyze the occurrence and causes of instability of the capsular-ligamentous apparatus in children.

Materials and methods. For the period 2014-2023. We examined 78 children (78 eyes) from 2 to 15 years old, (average age 3.7 years) patients undergoing inpatient treatment in the eye department of the TashPMI clinic (Tashkent Pediatric Medical Institute) with insufficiency of the capsular ligamentous apparatus.

All patients had a carefully collected history of life and illness.

It is true that to assess concomitant somatic pathology, all children were examined by a pediatrician, neurologist, otolaryngologist and other related specialists as necessary.

All patients underwent standard and special ophthalmological examination methods (visometry, biomicroscopy, A/B scanning, keratometry, ophthalmoscopy), clinical and laboratory research methods.

Results. Among the hospitalized children, children of primary school age predominated.

When examining children with insufficiency of the capsular ligamentous apparatus, the largest number were children with post-traumatic aphakia, who had a defect in the posterior capsule of the lens of more than 4-6 mm in 31 eyes (39%). The average age in this group was 8.6 years.

Children with aphakia were in second place in number; after extraction of congenital cataracts, 25% of the average age was 1.2 years. Further, 18% of children were children with a congenital anomaly of the lens with spherophakia of 25%, the average age was 4.6 years, in whom the zonules of Zinn when examined by ultrasound biomicroscopy were less than 75%. Fewer children with early anterior chamber displacement IOL implantation who underwent repeat surgery were 11%, mean age 3.9 years.

The application of a transscleral suture with immersion of nodes under the conjunctiva is a standard technique for fixing various intraocular implants (intraocular lenses, artificial iris, etc.) in the ciliary sulcus. In some cases, erosion of the nodes is noted, which increases the risk of developing endophthalmitis. Dr. Szurman et al. developed a method for fixing implants with a Z-shaped suture, which eliminates the likelihood of developing postoperative complications.

All patients underwent surgical treatment with transcleral fixation with the application of a continuous Z-shaped suture according to P. Szurman, which is the optimal method of lens implantation with minimal intra- and postoperative complications.

Conclusion. Thus, an analysis of the insufficiency of the capsular-ligamentous apparatus of the lens showed the most frequent occurrence in young children with congenital cataracts, in whom lenticonus was detected during surgery. In preschool children, there was an anomaly in the development of the lens, spherophakia and pseudophakia by subluxation of the IOL into the anterior chamber. In school-age children, the most common cause of insufficiency of the capsular ligamentous apparatus is post-traumatic aphakia.

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