

# **SCIENTIFIC SECTION OF THE FILATOV INSTITUTE OF TISSUE THERAPY OF THE NATIONAL ACADEMY OF MEDICAL SCIENCES OF UKRAINE**

## **Orbital floor fractures in children: features of clinic and surgical treatment**

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Orbital floor fractures are among the most common facial fractures in pediatric patients (Roth et al, 2010; Soliman et al. 2023). This type of orbital fracture is a typical consequence of the orbital region direct blunt trauma, which can lead to prolapse of the orbital cavity contents into the maxillary sinus. If sufficiently large volume of orbital tissue is prolapsed and strangulated in the fracture zone, the typical clinical picture, including enophthalmos, hypoglobus, limitation of upward mobility of the eyeball, as well as functional visual disorders in the form of diplopia, develops. Various materials, such as high-density polyethylene, hydroxyapatite, titanium plates and meshes, as well as donor allo-implants and autologous implants were proposed to restore the integrity of the inferior orbital wall.

The aim of the work is to study the features of clinic of orbital floor fractures and surgical treatment using autologous tissues in children.

**Material and methods.** 9 children aged 7-15 years (mean age  $11,1 \pm 2,4$  years) were operated on for orbital floor fracture at the Pediatric Ophthalmopathology Department of the Filatov Institut. All children complained to diplopia. Clinically in all cases the enophthalmos in the range of 5-7 mm, limitation of upward eyeball mobility, decreased visual acuity of the eye on the side of fracture were determined. CT examination of the orbit revealed the presence of fracture signs - a slit-like defect of the lower wall of the orbit with 3-4 mm diastasis of the edges or bone fragments of various sizes. Also the prolapse of a significant orbital fat fragment and also in 7 cases the inferior rectus muscle into the maxillary cavity with infringement in the fracture zone was noted.

Surgical treatment was performed in terms of 18-28 days after trauma, according to the time of applying to the institute. The restorative operation was performed by a transconjunctival approach using a fragment of the patient's auricular cartilage, which was taken from the posterior surface of the auricle at the first stage of the operation. After the fracture zone revision and sparing reposition of the prolapsed, the autcartilage plate was located under periosteum, overlapping the fracture zone, and fixed with sutures to the lower edge of the orbit. In cases before 21 days after trauma the process of orbital tissues repositioning was less difficult.

Results and discussion. The operation and postoperative period proceeded without complications. After subsiding of postoperative edema and inflammation the normalization of the position and motility volume of the eyeball was marked. The phenomena of diplopia gradually decreased until complete disappearance on the 6-18 days after the operation.

The control CT examination 3-6 months after the operation showed a stable position of the autocartilage plate implanted to the fracture zone, confirmed the absence of hernial protrusion of the orbital content.

Conclusion. The delayed terms of orbital floor fractures surgical restoration up to 14-21 days after injury in cases when early intervention was impossible are the optimal to avoid the soft tissues fibrosis development in the fracture zone, which worsens the conditions for safe reposition of orbital cavity contents.

The fracture restoration using autocartilage for plasty of the lower orbital wall has all the advantages of autoplasmic interventions, including the absence of the rejection reaction, danger of implant dislocation and extrusion. The proposed orbital floor fractures repairing technique is a highly effective alternative to the use of synthetic materials.

## **ULCERATIVE PSEUDOMONAS KERATITIS ASSOCIATED WITH CONTACT LENSES WEARING.**

**Olga Ivanova, Galyna Drozhzhyna.**

The aim: To analyze cases of severe ulcerative Pseudomonas keratitis, associated with soft contact lenses (SCL) wearing.

Material and methods. In 2022 there were 28 patients (28 eyes) with severe infectious corneal inflammation associated with refractive SCL wearing.

Results. We have conservatively treated - 6 eyes, the average visual acuity increased from 0,17 ( $M = 0.17 \pm SD 0,40$ ) till 0.5 ( $M = 0.49 \pm SD 0,37$ ). In 3 cases was performed therapeutic keratoplasty, stepped penetrating keratoplasty - in 2 eyes, biological covering by method N.A. Puchkovskaya - in 1 case.

Conclusions. Ulcerative Pseudomonas keratitis is severe complication due to wearing SCL, it is registered in 56% of cases of bacterial keratitis associated with SCL wearing. As a result of the treatment infectious inflammatory process was stopped in all patients. It was possible to avoid urgent keratoplasty in 66% of cases due to the early (from 12 hours to 6 days) handling of patients in the hospital.