

Hydrogel orbital implants

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Aim: Hydrogel orbital implants are self-inflating tissue expanders that use the osmotic principle to gain volume. They are used for the treatment of congenital anophthalmia or microphthalmia and postenucleation socket syndrome (PESS).

The aim of our study is to present our results and experience with the treatment of congenital anophthalmia and PESS with the implantation of hydrogel orbital implants.

Material & Method: 21 patients who received the hydrogel orbital implant were included in the study. All patients were treated in the same hospital and by the same surgeon from October, 2010 to April, 2016. Hydrogel orbital implants were implanted primarily in 1 patient with congenital anophthalmia and secondarily in 20 patients with PESS. The indication for primary implantation was expansion of the orbit while indications for the secondary implantation were compensation for volume deficiency in the orbit, shallow fornices, loose eyelids and therefore incorrect movement and positioning of the artificial eye prosthesis. In the group of patients with PESS there were 14 male and 6 female patients (average age 54.5, ranging from 35 to 85 years). Besides 1-year-old girl were treated for congenital anophthalmia. The size of hydrogel implants ranged from 0,24 ml to 5 ml.

Results: In 13 patients (62%) we achieved satisfactory result. In 2 patients (9,5%) extrusion of the hydrogel orbital implant due to infection occurred. In these 2 cases we performed revision of the conjunctival sac and conjunctivoplasty with transplantation of amniotic membrane. Topical and systemic antibiotic and anti-inflammatory therapy was prescribed.

In 4 patients (19%) we noticed insufficient compensation for volume deficiency in the orbit. Additional procedures are planned.

Dehiscence of the conjunctiva was noticed in 2 patients (9,5%), what was successfully managed by suturing of the defect.

Conclusion: Congenital anophthalmia and PESS remain a therapeutic challenge. Its treatment consists of different surgical techniques. According to our study implantation of hydrogel orbital implants in such patients is a successful treatment option.