

Long-term outcome of fornix reconstruction in severe symblepharon using stage-by-stage approach

O. Buznyk^{1,2}, S. Iakymenko²

¹*Institute of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden,*

²*Department of Eye Burns, Ophthalmic Reconstructive Surgery, Keratoplasty & Keratoprosthesis, The Filatov Institute of Eye Diseases & Tissue Therapy, Odessa, Ukraine*

Aim: To evaluate the results of symblepharon repair with full-thickness oral mucosa grafts using stage-by-stage approach.

Material & Methods: This study included retrospective analysis of a case series consisting of 89 eyes (85 patients) with severe symblepharon (grade III-IV, Kheirkhah A, *et al.*, 2008). After symblepharon lysis, if remnants of palpebral conjunctiva were present (grade III) they were secured to tarsal plate using double-armed suture(s) tied on the skin (69/89 eyes). Full-thickness OMG was secured episclerally both near the limbus and down in fornix to cover the exposed sclera. In fornix it was also secured to adjacent Tenon's capsule. If no remnants of palpebral conjunctiva were present (grade IV) the second OMG was used to cover the tarsus throughout to fornix, where it was secured to the OMG covering the sclera (20/89 eyes). No mytomycin was used. If eyelid retraction with entropion and lagophthalmos occurred after the initial surgery the 2nd stage was performed (usually in 2-4 weeks after the first surgery): eyelid posterior lamella was elongated using additional OMG and tarsorrhaphy was performed. Eyelids were opened in 4-5 months after the 2nd stage.

Outcome was defined as complete success (restoration of an anatomically deep fornix), partial success (focal recurrence of scar), or failure (return of symblepharon). Differences between groups were checked with Fisher exact test.

Results: Etiology of symblepharon included chemical burn (n = 68), thermal burn (n = 11), Stevens-Johnson syndrome (n = 5) and mucous membrane pemphigoid (n = 5). Eyelid retraction with entropion and lagophthalmos occurred after the initial surgery in 77/89 eyes: grade III - 59/69 eyes, grade IV – 18/20 eyes, P = 0.463). The 2nd stage of surgery was performed in these cases. Motility restriction was present in 80/89 eyes preoperatively (89.9%). Mean follow-up was 13.6 ± 9.3 months.

The anatomical outcome included complete success in 79/89 eyes (88.9%), partial success in 8/89 eyes (9.0%), and failure in 2/89 (2.2%). In grades III and IV symblephara, the outcomes were complete success in 62/69 eyes (89.8%) and 16/20 eyes (80%) – P = 0.208, partial success in 6/69 eyes (8.7%) and 3/20 (15%) – P = 0.325, and failure in 1/69 (1.4%) and 1/20 (5%), respectively. Both failures occurred in patients with auto-immune disorders (2/10 eyes – 20%), no failures were observed in post-burn patients (0/79 eyes) – P = 0.011. No motility restriction was noted in any eye postoperatively. Complications included transient intraocular pressure elevation (n = 12) – cases of simultaneous both eyelid symblephara repair.

Conclusion: Stage-by-stage approach of severe symblepharon repair using full-thickness oral mucosa grafts is a safe and effective method of fornix reconstruction. Auto-immune disease seems to be a main risk factor of symblepharon recurrence.