

When the Eyelids Heal Together: Two-Lamellar Reconstruction of a Rare Post-Traumatic Medial Canthal Ankyblepharon

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Purpose: Post-traumatic medial canthal ankyblepharon is an uncommon acquired cicatricial eyelid deformity that can result in severe eyelid contracture, visual obstruction, and functional impairment. When both anterior and posterior lamellar tissues are involved, simple adhesiolysis may be insufficient and may predispose to recurrent contracture. We present a two-lamellar reconstructive strategy combining complete synechial release, sequential Z-plasty, and vascularized inferior palpebral conjunctival tissue.

Methods: A 66-year-old man presented with a unilateral left medial canthal eyelid deformity approximately one year following a motor vehicle accident. The upper and lower eyelids were cicatrically fused from the medial canthus toward the central one-third of the eyelid, resulting in restricted eyelid opening and visual impairment. Intraoperative exploration demonstrated dense cicatricial synechiae with contracture involving both the superior and inferior eyelids and disruption of the anterior and posterior lamellar architecture. Complete synechial release was performed. Multiple z-plasties were designed on the superior/anterior lamella to reorient the scar and provide tissue lengthening. Inferior eyelid contracture was released through a lower blepharoplasty-type approach. The resulting posterior lamellar defect was reconstructed using an inferior palpebral conjunctival wedge flap. Providing vascularized native tissue coverage.

Result: The procedure restored separation of the upper and lower eyelids re-established the medial canthal architecture. Postoperatively, the patient achieved eyelid opening comparable to the contralateral eye with satisfactory eyelid closure. No wound infection or dehiscence occurred. The patient reported satisfactory functional and aesthetic improvement with a marked improvement in quality of life.

Conclusion: Post-traumatic medial canthal ankyloblepharon should be considered a complex three-dimensional cicatricial deformity rather than a simple eyelid adhesion. Successful reconstruction requires simultaneous correction of the contractile forces and restoration of the ephitelialized surfaces of both eyelid lamellae. The combination of synechial release, Z-plasty-based anterior lamellar lengthening, and vascularized conjunctival resurfacing provides a tissue-perservinig release-reorient-resurface stratify for restoring eyelid separation and function.

Keywords: Ankyloblepharon, post-traumatic scar, eyelid reconstruction, conjunctival flap ; cicatricial contracture; lamellar reconstruction.