Tarsal Switch Levator Resection for the Treatment of Myopathic Blepharoptosis

184

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Progressive myopathic ptosis is often associated with fair to poor levator function. These patients usually adopt a head-back/chin-up position with heavy recruitment of the frontalis muscle to see, resulting in chronic neck pain and visual fatigue. In addition, these patients often have a poor Bell's phenomenon, and the orbicularis muscle can be weak, resulting in poor eye protective mechanisms. Surgical procedures to correct blepharoptosis in patients with poor eye protective mechanisms are associated with an increased incidence of postoperative lagophthalmos and corneal exposure.

The goal in these patients is to lift the eyelid to a level that allows them to see without placing them at risk for lagophthalmos/exposure keratopathy and without having to tilt their head back. We describe a tarsal switch levator resection procedure that predictably raises the upper eyelid a predetermined amount and elevates the lower eyelid to almost the same distance. This essentially shifts the patient's palpebral fissure cephalad, thereby unmasking their visual axis in primary gaze (Fig. 184.1).

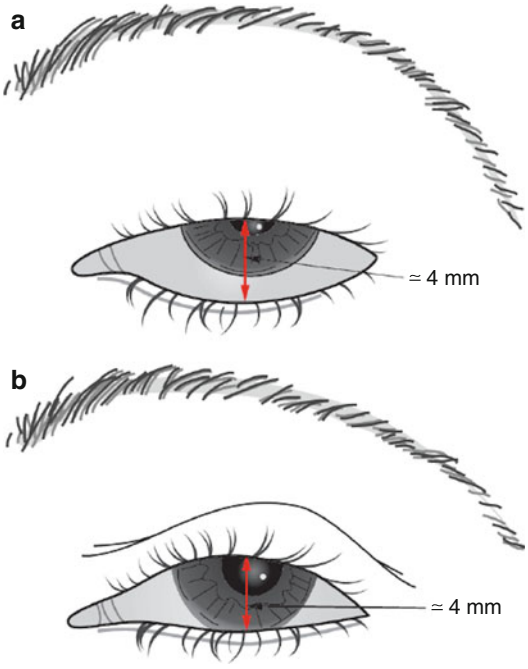

Fig. 184.1 Artist sketches depicting movement of palpebral fissure cephalad. (**a**) Before surgery. (**b**) After surgery

Surgical Technique

The skin to be excised from the upper eyelid is marked as is done for a conservative upper eyelid blepharoplasty surgery, leaving 2.5 cm of

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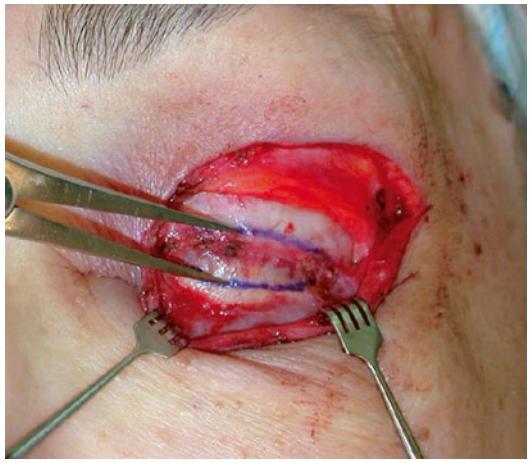

Fig. 184.2 Demarcation of free graft

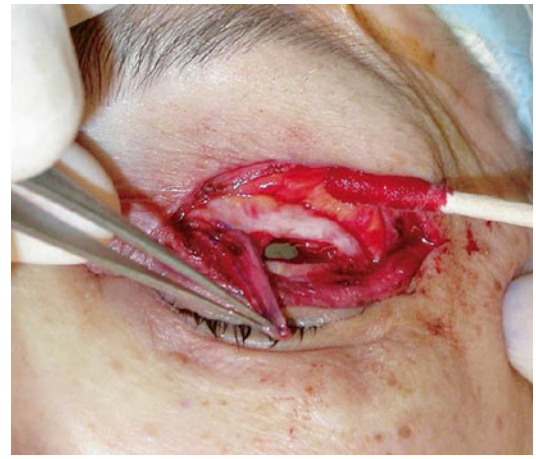

Fig. 184.3 Excision of free graft

skin for eyelid closure. A corneal protective shield is placed in the eye. The upper eyelid skin is incised and skin only is removed, leaving the orbicularis muscle in place. The orbicularis oculi muscle is divided at the upper border of the wound to expose the orbital septum. The orbicularis is dissected free from the underlying septum, which is then opened horizontally. Preaponeurotic fat is liposculpted or retracted superiorly. The upper anterior surface of tarsus is exposed by dissecting in the suborbicularis fascial plane, creating a flap of orbicularis muscle hinged inferiorly. Centering on the superior border of tarsus, a 6×20 mm ellipse is marked on the surface of levator aponeurosis and tarsus. The ellipse is excised resulting in a composite graft resection of 3 mm of tarsus/conjunctiva and 3 mm of levator aponeurosis/Müller's muscle/conjunctiva (Figs. 184.2 and 184.3). The graft is preserved in a saline-soaked gauze.

The elliptical defect in the posterior lamella of the upper eyelid is closed with 7-0 polyglactin 910 sutures (Vicryl™; Ethicon, Inc.) placed partial thickness through the upper border of tarsus and through the distal end of the levator aponeurosis/Müller's muscle complex. Care is taken to ensure that the sutures do not protrude through the conjunctival surface posteriorly. The orbicularis muscle is then closed with interrupted 7-0 polyglactin 910 sutures (Vicryl™; Ethicon, Inc.) with the knot buried. Skin is closed with a running suture of 6-0 silk or 6-0 Polypropylene.

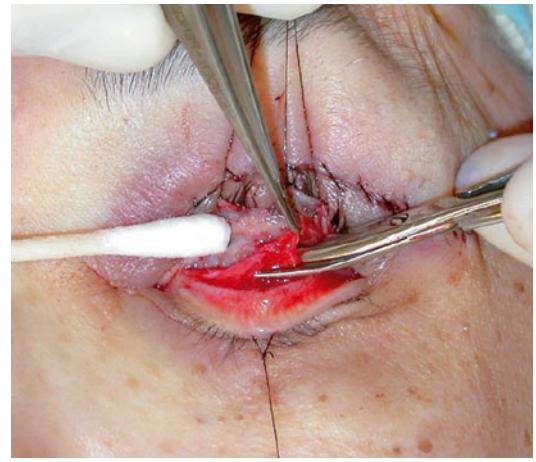

Fig. 184.4 Excision of lower eyelid retractors

Attention is directed to the lower eyelid. A 6-0 silk traction suture is placed and the lid is everted. A horizontal conjunctival incision is made at the inferior tarsal border extending from the punctum to the lateral canthus. The lower eyelid retractors are dissected free from the conjunctiva to the level of Lockwood's ligament and are excised (Fig. 184.4). The composite graft taken from the upper eyelid is

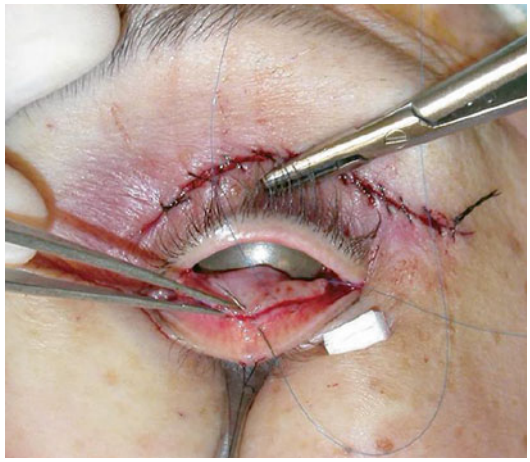

Fig. 184.5 Placement of lower eyelid graft

positioned in the lower lid with the tarsal edges abutting and the conjunctival surface of the graft directed toward the globe. The graft is sutured in position with a running suture of double-armed 6-0 Polypropylene externalized and tied on silicone bolsters (Fig. 184.5). The corneal protective shield is removed. Suture tarsorrhaphies of 6-0 Polypropylene are placed medially and laterally and tied over bolsters. These tarsorrhaphies are removed at 1 week postoperatively.

Figure 184.6 illustrates a typical patient with oculopharyngeal muscular dystrophy. He underwent the surgical technique described in this chapter. At 1 year postoperative follow-up (Fig. 184.7), he has a clear visual axis and improved head position.

Fig. 184.6 Preoperative photo; had to lift chin to see

Fig. 184.7 Twelve-month postoperative photo, chin normal

Suggested Reading

DeMartelaere SL, Blaydon SM, Shore JW. Tarsal switch levator resection for the treatment of blepharoptosis in patients with poor eye protective mechanisms. Ophthalmology. 2006;113:2357–63.