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When evaluating adults for superior visual field obstruction, I break down the evaluation into three categories. The issue may be any combination of the levator muscle, the eyelid skin, or the eyebrow. The majority of acquired ptosis cases are aponeurogenic; however, careful assessment must be made to determine any comorbidities as failure to address these may lead to poor functional and aesthetic outcome. The treatment and evaluation of these conditions are discussed throughout this book.

Ptosis repair is one of the most challenging surgeries to master with published data showing revision rates of 0–72 % depending on clinical scenario and technique (Chang et al. 2012; McCord et al. 2007). There are over 100 methods described in the literature, with most centers honing one technique to fit the majority of situations. There is no level one data (and likely will never be) available that can direct treatment, and surgeons are left to evaluate a seemingly infinite combination of variables in choosing which technique is best for the patient to maximize outcomes and reduce revision rate. Identifying a patient with levator aponeurotic dehiscence prior to surgery can help narrow down your best option to an anterior approach levator advancement surgery.

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The clinical features suggestive of a patient with acquired levator aponeurotic dehiscence include good levator function, higher than normal eyelid crease, and increased translucency of the eyelid above the tarsus allowing the iris color to be seen through the eyelid. Sudden onset of ptosis following ocular procedures or trauma is also suspicious for dehiscence (Mehat et al. 2012; Ideta et al. 2009). It is common to see older patients develop levator aponeurotic dehiscence following cataract surgery, glaucoma surgery, and even after periocular injections. Slow onset of ptosis is more often related to levator aponeurotic attenuation and stretching but may still involve dehiscence. I have seen pure dehiscence in cases of recurrent or prolonged uveitis and in younger patients with contact lens use.

Surgical Technique

The lid crease is often indistinct or elevated in levator aponeurotic dehiscence. Measurement of the dominant lid crease should be performed with the patient in downgaze with the eyes open. Minimal anesthetic should be injected in order to avoid distortion of the anatomy and minimize epinephrine effect on Muller's muscle which may be more exposed with the attenuation of the levator aponeurosis. A No. 15 blade is then used to make the skin incision. Blunt Westcott scissors are then used to carefully divide the orbicularis muscle fibers along the incision to expose the septum. Bipolar cautery

is used to maintain hemostasis, with careful attention to avoid injury to the skin edge.

Additional anesthetic is then injected superiorly underneath the septum. This small amount of fluid (<0.2 mL) helps with anesthesia during the next portion of the procedure and also delineates the tissue planes to identify orbital fat and safely open septum without injuring the arcade or Muller's muscle. Retracting the anterior lamella superiorly with four prong rakes and gently retro-pulsing the globe are also helpful in finding orbital fat which may be retracted in cases of dehiscence. Open the septum with blunt Westcott scissors. Apply a Desmarres retractor superiorly to assist with better visualization of the relevant structures.

If there is predominantly levator aponeurotic dehiscence, what you will see is a distinct white tarsal superior margin which is accentuated by the superior red peripheral vascular arcade (Fig. 188.1a). There may be a very thin white layer overlying the arcade and Muller's muscle which represents attenuated septum and aponeurosis, but then there will be a distinct dense white edge of the levator aponeurosis. The aponeurosis should then have a consistent thickness up to the beginning of the levator muscle fibers. Use the blunt Westcott scissors to dissect through the septum down to bare tarsus approximately 2 mm below the arcade (Fig. 188.1b). Place a double-armed 5-0 Vicryl suture on an S-14 needle through the central aspect of the tarsus. This should be placed slightly medial to the mid-pupillary line and 2 mm below the top of the tarsus, with a width of no more than 2 mm. Each arm of the Vicryl suture should be passed superiorly through the leading edge of the aponeurosis, leaving a cuff of 1 mm between the inferior edge and the needle pass (Fig. 188.2).

The patient is asked to open her eyes, and contour and height are assessed. The suture can be adjusted if peaking is encountered, but the height is usually on target. Occasionally, there will be an overcorrection in the OR related to stimulation of Muller's muscle. If we are doing both sides, I will recheck the eyelid after completing the other side. If it is a unilateral case, I will ask the patient to look down and then up as I hold the eyelid down to stretch out the Muller's muscle fibers. A

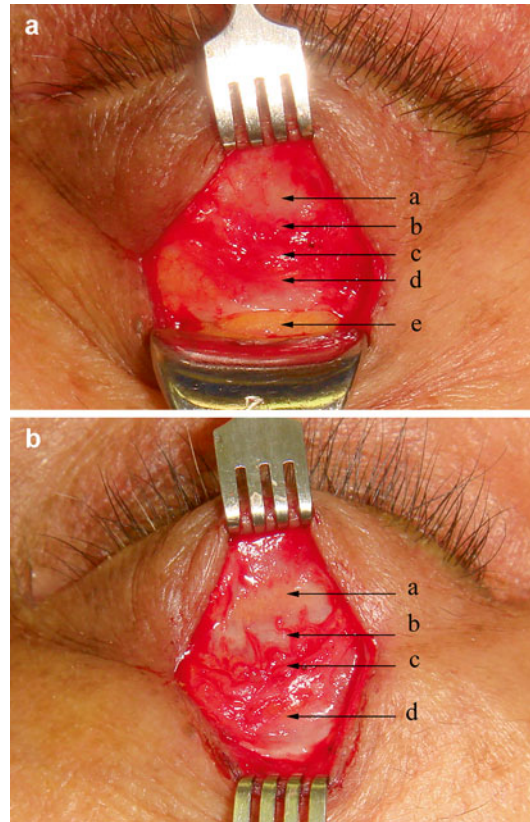


Fig. 188.1 (a) Visualization of aponeurotic dehiscence upon opening septum superiorly: *a* tarsus; *b* peripheral vascular arcade; *c* Muller's muscle; *d* levator aponeurotic edge; *e* orbital fat (b) Visualization of the peripheral arcade upon disinserting septal fixation on the tarsus: *a* tarsus; *b* peripheral vascular arcade; *c* septal edge; *d* levator aponeurotic edge

second fixation suture is always placed using the 5-0 Vicryl to attach the levator aponeurosis to the superior aspect of the tarsus. The skin is then closed using a running 6-0 plain gut suture.

I find that the correction is exact when this anatomy is encountered with good response of the eyelid height intraoperatively and postoperatively (Fig. 188.3). I will usually not adjust for height even if the eyelid looks under- or overcorrected on the operating table. This can be attributed to Muller's activity, orbicularis weakness, and mechanical effects of edema or ecchymosis. In bilateral cases, it is often the more ptotic eye to start with that ends up slightly lower. By preparing patients for this possibility preoperatively, I likely increase acceptance of mild asymmetry. Less than 5 % of patients require revision.

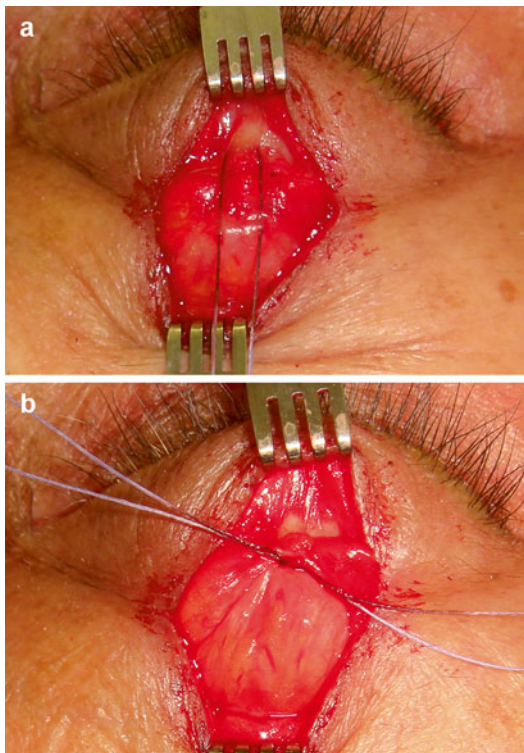


Fig. 188.2 (a) Placement of Vicryl suture in a mattress fashion reattaching levator aponeurosis to tarsus (b) Slip knot tightened to advance the levator aponeurotic edge

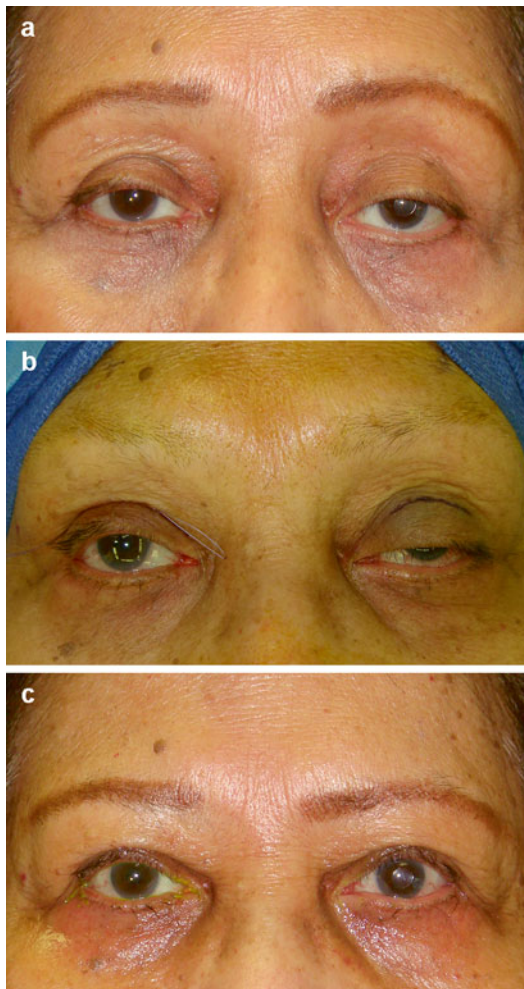


Fig. 188.3 (a) Preoperative photograph bilateral levator aponeurotic dehiscence following cataract surgery. Poor eyelid creases, compensatory brow elevation, and hollowing of superior sulci (b) Intraoperative photograph after repair of the right side (c) Postoperative photograph 1 week after surgery

References

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