

Fig. 1.1 Orbital septum and its relationship with adjacent structures

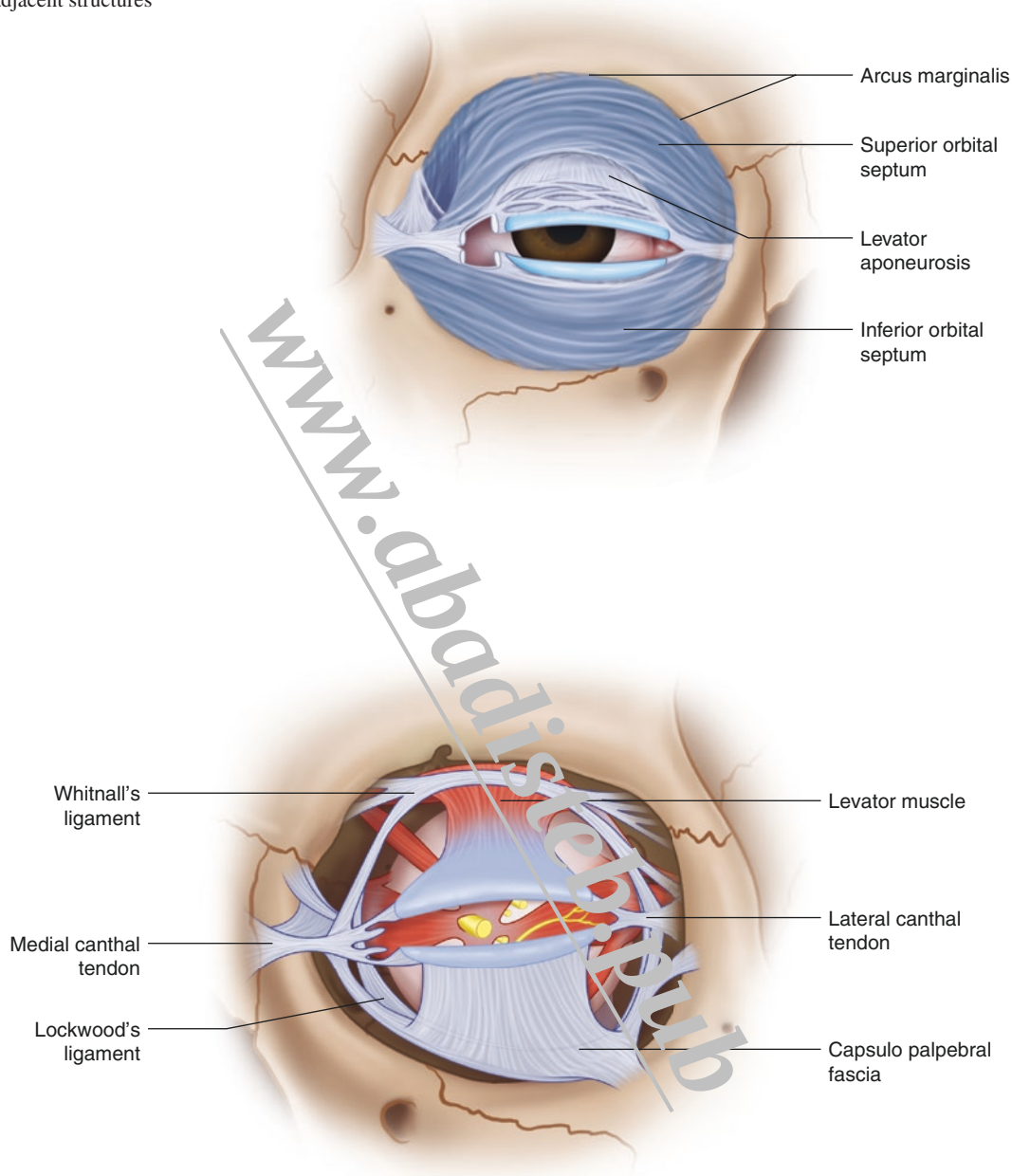


Fig. 1.2 Canthal tendons insertion and Whitnall's ligament

The orbital septum serves as a barrier to infection. Eyelid infection that remains anterior to the septum and is therefore prevented from entering the orbit is termed preseptal cellulitis. When

infection crosses an intact or violated septum, orbital cellulitis results, which is a vision-threatening, and, in some cases, life-threatening condition.

Fig. 1.4 Pretarsal, preseptal, and orbital orbicularis oculi muscle

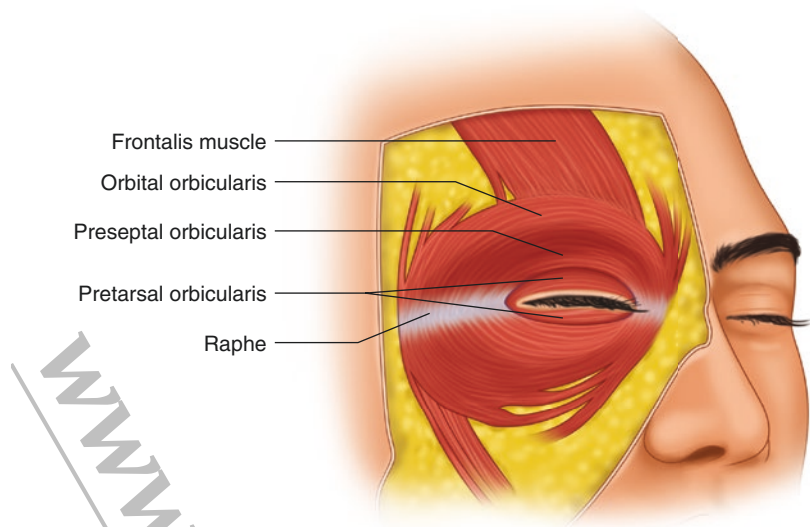
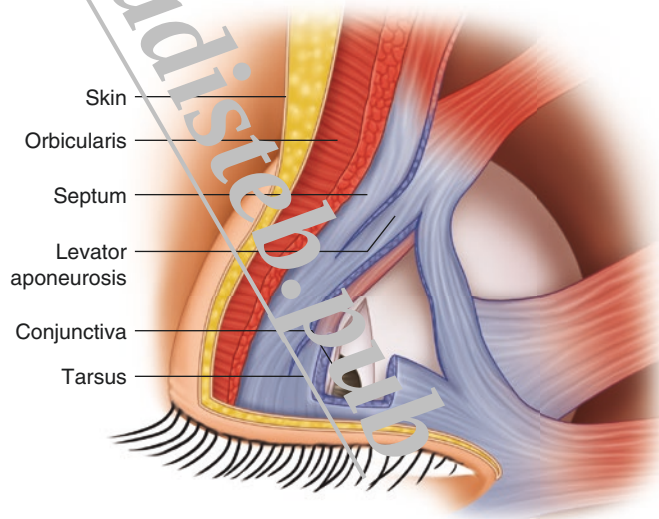


Fig. 1.5 Levator muscle and its relationship to surrounding structures



levator is encircled by Whitnall's ligament [23]. At this point, the levator muscle transitions into the fibrous levator aponeurosis, which courses inferiorly for another 14–20 mm, to attach to the inferior third of the anterior surface of the tarsus. Also at the level of Whitnall's ligament, the leva-

tor sends off lateral and medial horns. The lateral horn attaches to the zygomatic bone. The medial horn fuses with the posterior arm of the medial canthalligament and inserts on the posterior lacrimal crest. The lateral and medial horns help ensure that the upper eyelid maintains a curvature

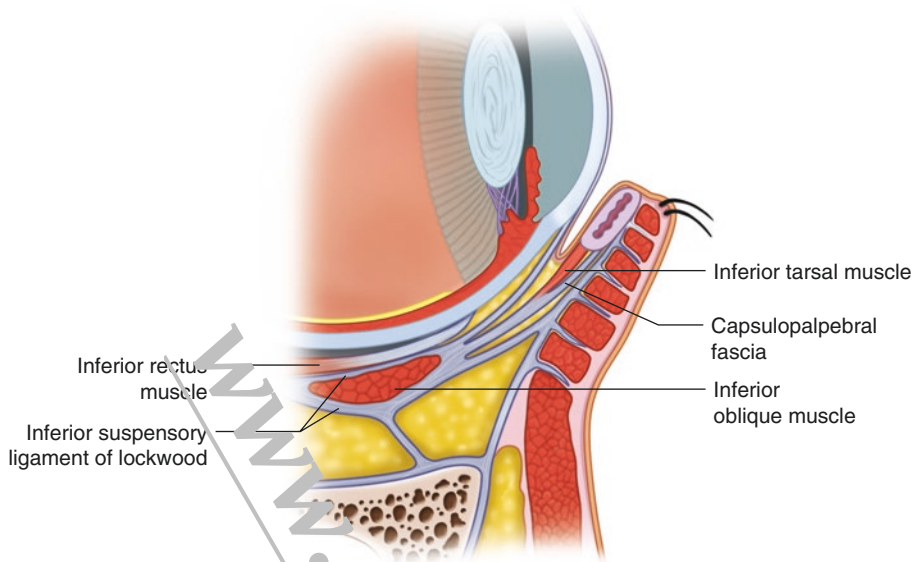


Fig. 1.7 Sagittal view of the capsulopalpebral fascia and its relationship with the lower eyelid retractors

[12], which, like Müller's muscle, is composed of smooth muscle fibers. These two layers are not generally distinct during surgical dissection.

The lower eyelid retractors have three insertions. Posteriorly, the retractors insert on Tenon's fascia. Centrally, the inferior tarsal muscle fibers terminate a few millimeters inferior to the tarsus [12], and a fibrous continuation attaches to the inferior border of the tarsus. Anteriorly, the capsulopalpebral fascia fuses with the orbital septum 4 mm inferior to the tarsus. Fibers continue through the septum and attach to the subcutaneous tissue, forming the lower eyelid crease [5].

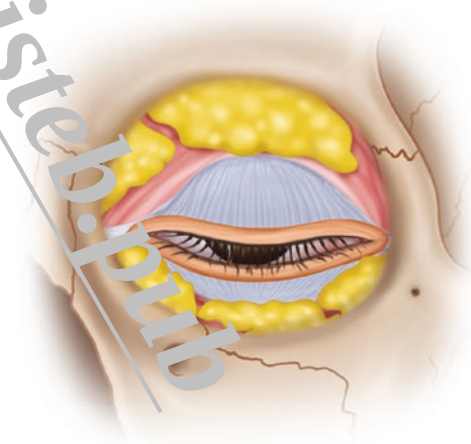


Fig. 1.8 Diagram showing the two fat pads on the upper eyelid, which are located posterior to the orbital septum and immediately anterior to the levator muscle and aponeurosis. The lower eyelid contains three fat pads

Eyelid Fat Pads

The eyelid fat pads (Fig. 1.8) play an important role in the appearance and contour of the eyelids. In the youthful face, eyelid fat imparts a fullness and smoothness to the upper and lower eyelids. With age, atrophy of eyelid fat can cause the eyelids to sink posteriorly, resulting in involutional enophthalmos and a lid crease displaced away from the lid margin [21]. In addition, weakening

of the orbital septum can allow anterior prolapse of the eyelid fat, resulting in a puffy appearance known as steatoblepharon [3, 5].

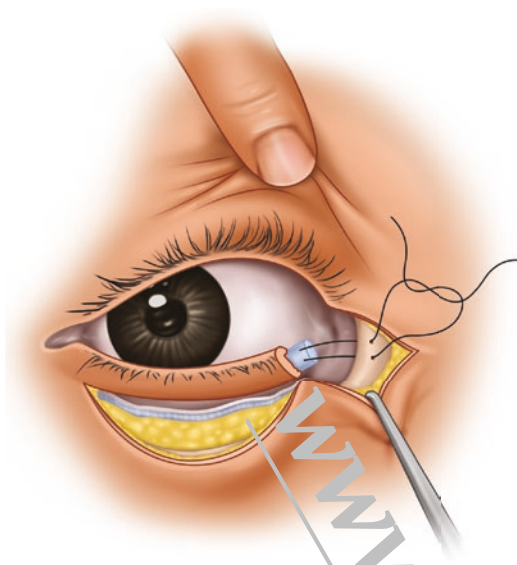


Fig. 2.3 A lateral tarsal strip is used to tighten the eyelid

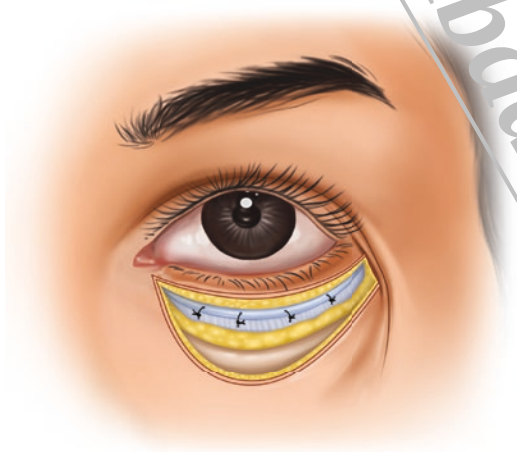


Fig. 2.4 The capsulopalpebral fascia is reattached to the inferior tarsal border

Surgical Management: Wies Procedure

If the entropion is cicatricial in origin, a transverse blepharotomy and marginal rotation (Wies

procedure) is effective for repair of the upper or lower eyelid. Local anesthesia is administered to the eyelid, and a horizontal incision is made 4 mm from the lid through skin and orbicularis. Care is taken to spare the marginal arcade, which lies 2–4 mm from the eyelid margin (Fig. 2.5). The lid is then everted, and a second corresponding incision is made through conjunctiva and tarsus. Westcott or tenotomy scissors are used to extend the full-thickness blepharotomy medially and laterally across the tarsus. Three double-armed 6-0 silk sutures are passed in mattress fashion through the tarsus internally, and over the surface of the tarsus to exit the skin near the lash line (Figs. 2.6 and 2.7). The closer these sutures are passed to the lashes, the more rotation is achieved. The sutures are tied over cotton or rubber bolsters to prevent “cheese wiring” (Fig. 2.8). A small overcorrection is the goal. The skin incision is closed with interrupted or running 6-0 plain gut suture. The silk sutures and bolsters should be removed in 10–14 days.

If the cicatricial entropion is severe, or if the foregoing procedure fails, posterior lamellar augmentation is necessary. A graft may be



Fig. 2.5 A skin incision is made 4 mm below the eyelid margin

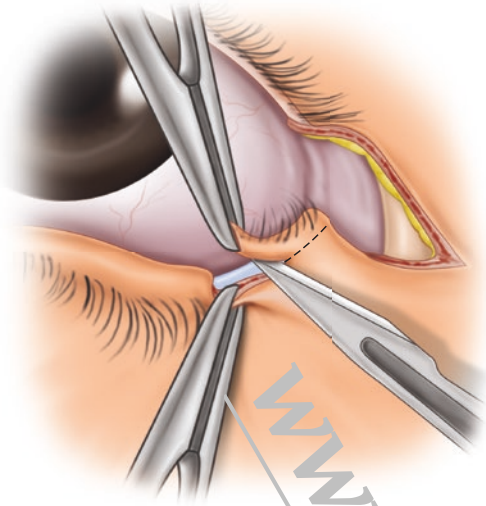


Fig. 3.3 The eyelid margin is removed, including the lashes

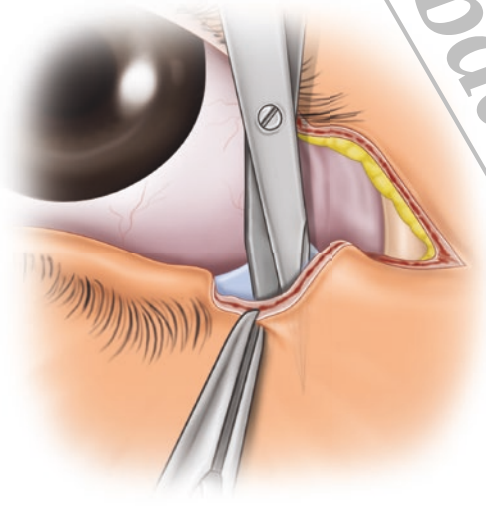


Fig. 3.4 Skin and orbicularis are dissected from the anterior tarsal surface

der, scissors are used to make an incision through conjunctiva and lower lid retractors. The blade should be used to de-epithelialize the conjunctiva on the posterior surface of the segment. A vertical incision with scissors completes the creation of the strip by trimming the tarsal strip to a length of 2–3 mm. Dissection to the periosteum of the lat-

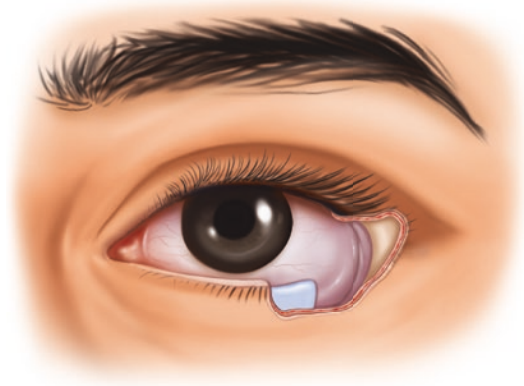


Fig. 3.5 The lateral orbital rim periosteum is exposed

eral orbital rim is then carried out with scissors and blunt dissection to obtain good visualization (Fig. 3.5). Both arms of a double-armed 5-0 Prolene mattress suture are passed through the tarsal strip, from posterior to anterior, and then through the periosteum (Fig. 3.6). The suture is then tied to an appropriate tension, so the lid can still be distracted 2–4 mm off the globe. The lateral canthal angle is reformed with a single 6-0 plain gut suture, using a circular suture technique to bury the knot in the wound. The muscle and skin are closed with 6-0 Vicryl and 6-0 plain gut, respectively.

Medial Canthal Tendon Plication

If there is significant medial canthal tendon laxity, this condition should be addressed because either of the aforementioned procedures will pull the punctum laterally. We recommend a minimally invasive, posterior approach to medial canthal tendon plication. This procedure also works well for isolated punctal ectropion with medial canthal tendon laxity. This is accomplished by incising a diamond shape or ellipse of conjunctiva and lower lid retractor tissue 4 mm inferior to the punctum (Fig. 3.7, Video 3.3). The ellipse should be about 6 mm in length and 3–4 mm in height. Through this ellipse, Westcott scissors are used to bluntly dissect a tunnel toward the posterior lacrimal crest. Care is taken to avoid the lacrimal canaliculi and sac. Once the crest has been identified by palpation and dissection, both

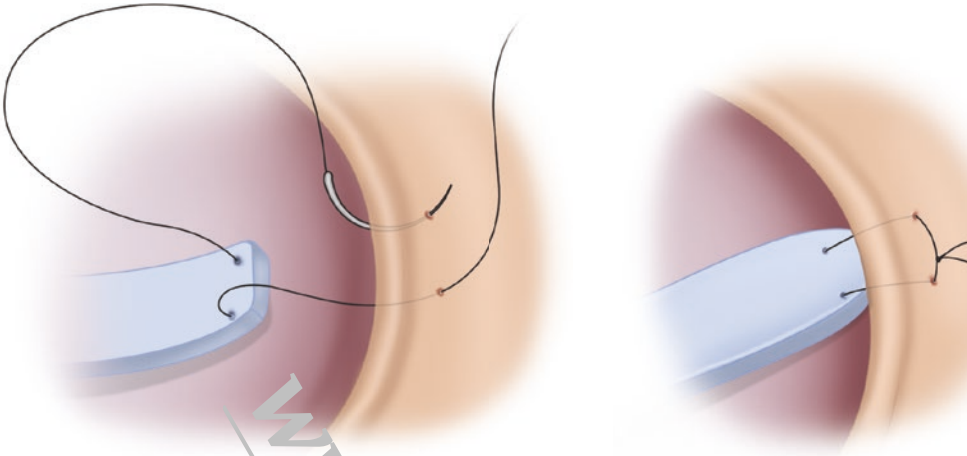


Fig. 3.6 A mattress suture fastens the tarsal strip to the periosteum

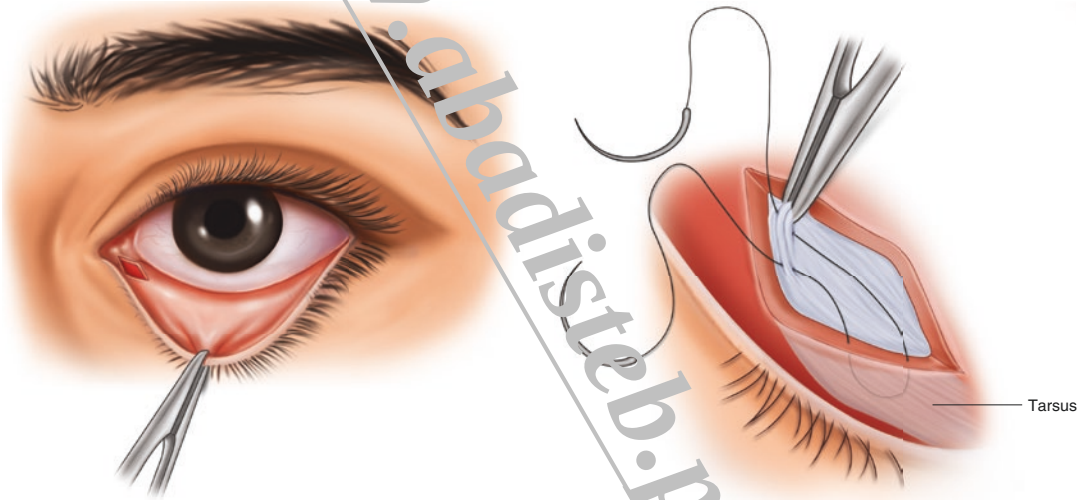


Fig. 3.7 A diamond-shaped excision of conjunctiva and retractors is performed

Fig. 3.8 The medial canthal tendon is plicated with a permanent suture

needles of a double-armed 5-0 Prolene suture are passed through the inferomedial edge of the tarsus that has been exposed through the elliptical incision, from posterior to anterior. A forceps is then passed into the tunnel and the medial canthal tendon attachment to the posterior lacrimal crest is grasped and exposed (Fig. 3.8). Each arm of the mattress suture is passed through this tissue, and the suture is tied to the appropriate tension. Closure of the elliptical incision with interrupted,

buried 6-0 plain gut suture will further facilitate inward rotation of the punctum to complete the medial ectropion repair.

Medial Ectropion Repair

Punctal ectropion with normal medial canthal tendon function can be repaired via a posterior lamellar shortening procedure. An ellipse of conjunctival and lid retractor tissue is excised and

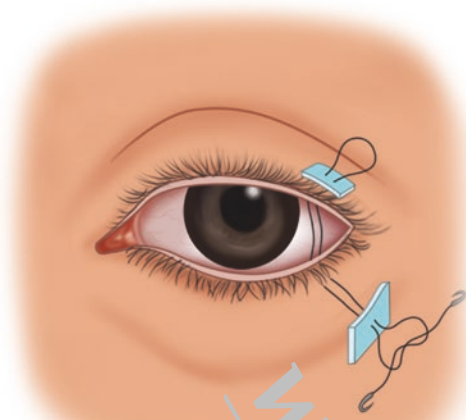


Fig. 4.5 Permanent lateral tarsorrhaphy

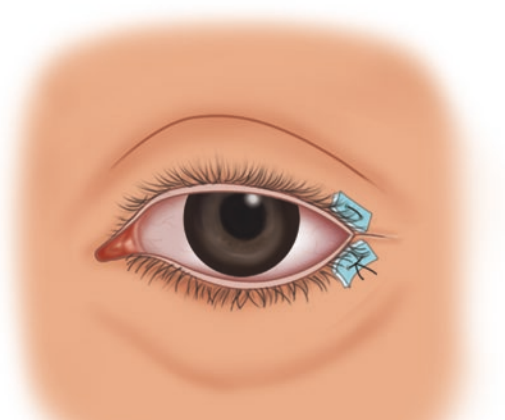


Fig. 4.6 The conjunctiva is incised at the superior tarsal border over the temporal two-thirds of the eyelid

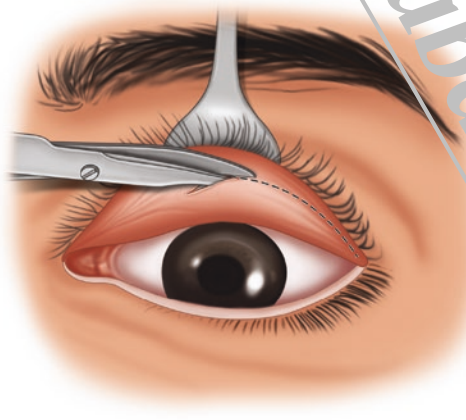
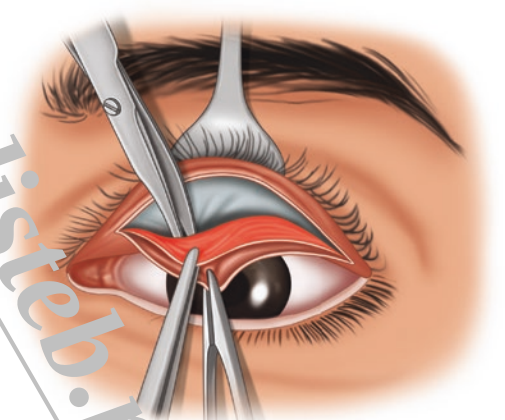


Fig. 4.7 Müller's muscle is dissected off the levator aponeurosis



is then freed from its attachments to Müller's muscle with Westcott scissors.

Another buttonhole incision is made temporally at the superior border of the tarsus through Müller's muscle. Anatomical awareness of this muscle is fundamental for this surgery. Müller's muscle originates from the undersurface of the levator aponeurosis at Whitnall's ligament, 14–16 mm above the superior border of the tarsus. This sympathetically innervated muscle inserts on the superior border of the tarsus and has some attachments to the conjunctival fornix.

Once the buttonhole incision has been made, Müller's muscle is disinserted from the superior tarsal border along the temporal two-thirds of the eyelid. Müller's muscle is then detached from the levator aponeurosis carefully using blunt and sharp dissection (Fig. 4.7). The eyelid is then flipped back into position and the patient is placed in an upright position. The patient is asked to open his or her eyes to allow the surgeon to determine the height and contour of the upper eyelid. If the height and contour are appropriate, Müller's muscle is infiltrated with the local anes-

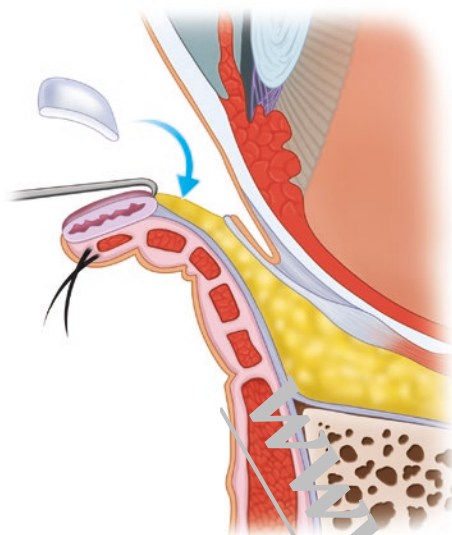


Fig. 4.10 The retractors of the lower eyelid have been recessed from the inferior tarsal border

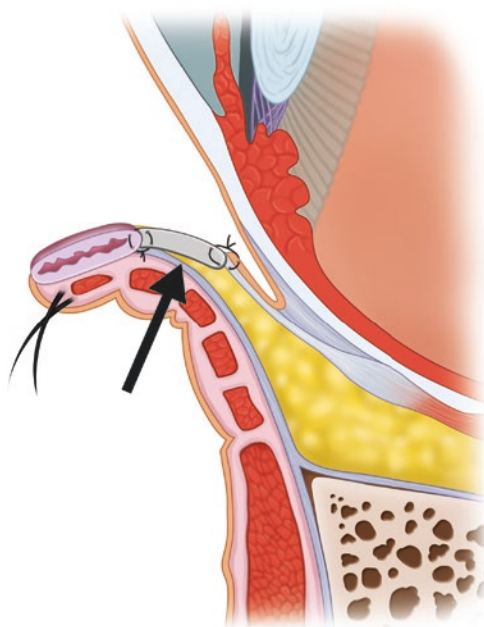


Fig. 4.11 A spacer graft is inserted between the inferior border of the tarsus and the recessed edge of the retractors

(Fig. 4.11). The lower lid is then pulled superiorly with the 4-0 traction suture and taped above the brow with Mastisol and Steri-Strips, placing the lower lid on gentle stretch during healing. Ophthalmic ointment is placed within the eye, and two eye pads are taped above the surgical site with paper tape. The dressing and traction suture are typically removed in one week (Video 4.5).

Retraction Repair of Lower Lid with Capsulopalpebral Fascia Recession

A 50:50 mixture of 2% Lidocaine with 1:100,000 epinephrine and 0.5% bupivacaine with 1:100,000 epinephrine is injected into the lateral upper and lower lid, the inferior fornix, and the periosteum of the lateral orbital rim using a 5 mL syringe with a 30-gauge needle. A lateral canthotomy is performed by crushing the lateral canthus with a hemostat and making a 10 mm incision straight out from the canthal angle with Westcott scissors (Fig. 4.12). The inferior crus of the lateral canthal tendon is identified with palpation by the tips of the scissors. The tendon is cut, freeing the lateral portion of the lower lid. An incision is then made along the length of the inferior tarsal border to the level of the punctum with Westcott scissors to

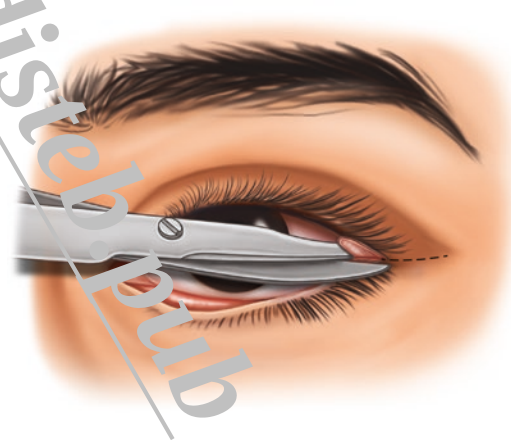


Fig. 4.12 A lateral canthotomy is made with scissors

release the conjunctiva and capsulopalpebral fascia. The inferior tarsal border is then grasped and pulled inferiorly while the capsulopalpebral fascia is grasped and pulled superiorly. High-temperature cautery is then used to dissect the capsulopalpebral fascia from the surrounding tissue. Cautery allows the surgery to proceed quickly while obtaining hemostasis at the same