
Transconjunctival Lower Lid Blepharoplasty with and Without Fat Repositioning

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Introduction

The title of this chapter is descriptive in that it reviews a posterior eyelid (conjunctival) approach to cosmetic rejuvenation of the lower eyelid (Nassif 2005; Hamra 1995; Hamra 1996; Edelstein et al. 2000). The designation of the procedure as transconjunctival is important in that it differentiates surgery from the more traditional transcutaneous (through the skin) approach. Transconjunctival blepharoplasty has become the most common approach to cosmetic lower lid surgery over the last decade (Nassif 2005). We have only rarely performed transcutaneous blepharoplasty and not at all in the last 10 years. This is because, in our critical evaluation of this surgery and in our hands, the posterior eyelid approach yields excellent results, with high patient satisfaction and fewer complications. There are a

variety of adjunctive techniques (canthoplasty, skin pinch, muscle strap) which may be included in surgery that warrant cutaneous incisions and muscle manipulation. These other techniques are described elsewhere.

It must be emphasized that the term transconjunctival refers to the location of the incision to access the lower eyelid fat. Transconjunctival lower blepharoplasty still affords the surgeon many choices, such as whether a preseptal or post-septal approach will be taken and whether fat is excised or repositioned.

Surgical Technique

In cases of fat repositioning, the tear trough is demarcated preoperatively. In addition, the amount of nasal and central fat to reposition is assessed. We rarely reposition lateral fat, as the amount of fat present is generally not adequate to fill the lateral orbital rim depression.

We have found that, as opposed to upper lid blepharoplasty, potential patient discomfort is much more prevalent with lower lid surgery. This is especially true if fat is repositioned during surgery. Consequently, we rarely perform lower lid blepharoplasty under local anesthesia alone. This is more possible with the addition of IV sedation, when fat is cauterized or excised only, or in patients who have the disposition to tolerate the procedure.

For cases performed under injections of local anesthesia only, we pretreat patients with 5–10 mg

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Fig. 66.1 Transconjunctival incision. Using the nondominant hand, the surgeon can apply pressure to the globe and retract the lower eyelid, bulging the fat forward for a retroseptal transconjunctival incision. This unimanual globe retropulsion eyelid distraction (GRED) maneuver is efficient, protects the eye, and reveals the proper incision placement

of oral Valium depending on the patient's history of sedative use, patient weight, and patient anxiety. We then instill a drop of topical tetracaine into the lower cul-de-sacs of each eye. One can place a small cotton pledget soaked in the same tetracaine drops into the lower cul-de-sacs and ask the patient to close his/her eyes, which we call the "tetracaine bath." After waiting 5 min, we remove the tetracaine pledgets. This technique has allowed injection of local anesthetic in the majority of patients without discomfort. In patients receiving IV sedation, we skip this step as IV analgesia, sedation, and anxiolytics negate the need for significant preinjection conjunctival anesthesia.

We inject 2–3 cc of Xylocaine 1 % with 1:100,000 epinephrine transconjunctivally. The surgeon can pull the lower lid inferiorly with the index finger while simultaneously compressing (balloting) the globe through the upper eyelid (Fig. 66.1). This globe retropulsion eyelid distraction (GRED) maneuver pushes the inferior cul-de-sac forward while increasing the surface area of injectable conjunctiva. We incise the conjunctiva and lower lid retractors 5 mm below the tarsus from the punctum nasally to the most temporal portion of the lower lid. An incision at this level will access the fat posterior to the septum, thereby leaving the septum intact. Some sur-



Fig. 66.2 Fat exposed following completion of transconjunctival incision

geons prefer to incise the conjunctiva closer to the tarsus, dissect preseptally down to the infra-orbital rim, and open the septum to access the fat. Avoid incisions too low, as this may lead to persistent chemosis postoperatively. We continue incising tissue until fat is exposed (Fig. 66.2). We engage the conjunctiva and retractors with a 4–0 silk suture and secure the suture under tension to the head drape with a hemostat. The traction suture is critical. It provides protection to the cornea by covering it with the conjunctiva and retractors. In addition, it allows greater surgical space exposure by putting tissues on stretch. We use a cotton-tipped applicator to bluntly dissect inferiorly to the orbital rim. This allows the fat pads and inferior oblique muscle to delineate themselves well. We incise the tip of the nasal and central fat and dissect them free of the inferior oblique muscle to assure that it will be undisturbed when manipulating the fat pads. The arcuate ligament separates the central and temporal compartments. We try to preserve this ligament (typically dense in persons under 50 and more attenuated thereafter) as it is a support for the globe. If excising fat, all three pads are reduced at this point. We cut the fat flush with the orbital rim with minimal pushing on the eye. If more fat is excised, there is a strong tendency toward postoperative hollowness.

In cases of repositioning fat, we bluntly dissect the nasal and central fat pad from the inferior oblique muscle. All connective tissue attachments

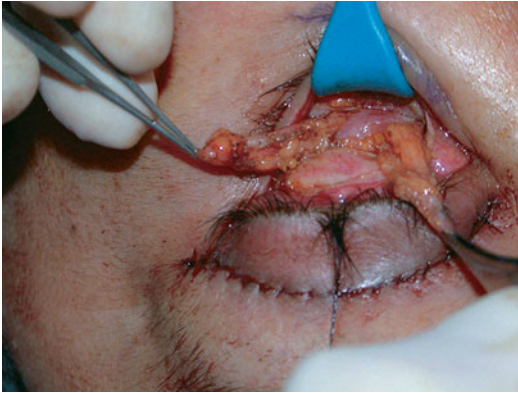


Fig. 66.3 Fat pedicles freed of inferior oblique muscle

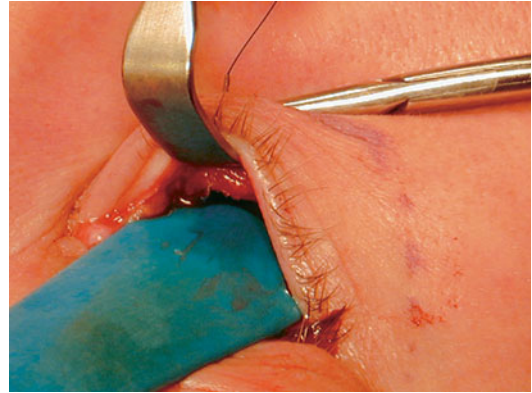


Fig. 66.5 Passing suture from externally to secure fat with a bolster over the skin

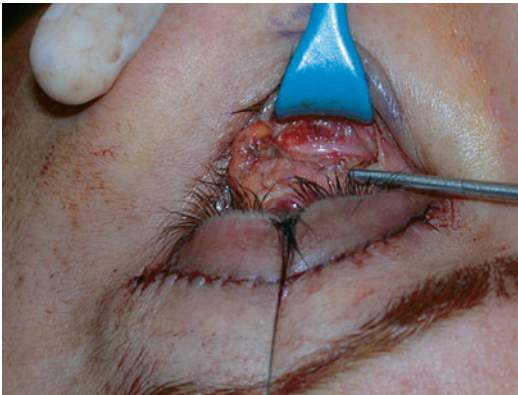


Fig. 66.4 Orbital rim exposure

are severed. One can hold the fat pads with toothed forceps at their tips and pull on one fat pad while allowing the other to recess and then reverse this process (Fig. 66.3). This demonstrates that the fat pads can move freely beneath and around the inferior oblique muscle, and we call this the “inverse shoeshine sign,” because it mimics the inverse of shining a shoe. We also grasp the ends of each fat pedicle and splay the pedicle open to identify the width of area I can fill in with fat. We now retract the transconjunctival surface of the lower lid and all tissue over the orbital rim inferiorly, exposing the periosteum at the arcus marginalis (Fig. 66.4). The periosteum is cut with the cutting mode of an electrocautery unit from just temporal to where the tear trough begins to the most nasal aspect of the orbital rim. We use a freer elevator to elevate the periosteum from the face of the maxilla for approximately 15 mm. Dissection is carried

around the infraorbital neurovascular bundle. This dissection can lead to significant bleeding. In this instance, we inject 1–2 cc of local anesthesia into the area and have the assistant hold pressure while completing the other side. Once bleeding is controlled, we bring a 4–0 Prolene suture on an FS-2 needle through the skin into the nasal pocket, feed it through the fat pedicle, and bring the suture through the pocket and out the skin. We tie the suture over a Telfa bolster (Fig. 66.5), thus repositioning and fixating the fat pedicle over the tear trough. We repeat this step for the central fat pedicle. We then assure that forced ductions are free. We do not close the conjunctival incision.

Fat repositioning can also be performed in a supra-periosteal fashion. The sub-orbicularis oculi fat (SOOF) is identified, and blunt dissection with Stevens Tenotomy scissors is used to create a pocket. Nasally, the SOOF is attenuated and cautery is used to elevate the superior attachments of the lip elevators, with blunt scissor dissection under these muscles to create a nasal pocket. Dissection is limited to 10 mm below the infraorbital rim to protect the motor innervation of the lip elevators.

We recently compared suprapariosteal vs. subperiosteal fat repositioning in 40 patients, 20 in each group (Yoo et al. 2013). We found that the aesthetic outcomes were equivalent but that the techniques do have important differences. The suprapariosteal technique is faster but associated with more bleeding, a more prolonged

recovery, and a higher rate of granulomas. The supraperiosteal technique does release the orbicular ligament, which Couch et al. surmise may allow the orbicularis oculi to be lifted superiorly, thereby helping to fill the tear trough (Couch et al. 2011). Again, we saw no difference in the aesthetic results and typically favor subperiosteal dissection since completing this study.

Postoperative Care

Patients are instructed to apply ice compresses every hour (for 10 min) while awake for the first 48 h after surgery. It is suggested to sleep as upright as possible for the first week after surgery. A topical antibiotic steroid drop is applied three times a day for 1 week. In fat-repositioning cases, an oral steroid preparation (Medrol dose pack) is prescribed, and the Prolene sutures and cotton bolsters are removed 4–5 days after surgery.

Complications

The most common complications of surgery are excessive bruising, swelling, chemosis, and subconjunctival hemorrhage. An overcorrection or undercorrection of fat reduction can occur. This can lead to persistent fat prominence or hollowness. We have found this to be less common with fat-repositioning cases. When fat is repositioned, complications unique to this procedure can occur.

These include diplopia (beyond the immediate postoperative period), fat granulomas, prolonged edema and chemosis, and tear trough irregularities. Diplopia is typically transient and related to edema or inferior oblique trauma. We usually treat this with higher dose oral steroids, tapered over a 10-day period. This generally allows all cases to resolve over this time period. Fat granulomas are rare—less than 5 % of cases—and are treated with intralesional injections of 5-fluorouracil (5-FU) and low-dose and concentration steroids (9 parts 5-FU: 1 part triamcinolone 5 mg/ml). The granulomas usually resolve with one or two injections given 2–3 weeks apart. We have had to excise a granuloma surgically very rarely. We treat prolonged edema and chemosis, as diplopia, with higher dose steroids.

Comments

We perform a significant volume of fat-repositioning surgery in our practices. Our experience with the technique has been very rewarding (Fig. 66.6). We have found this to be a highly reproducible and reliable surgery with high patient satisfaction. The following are the essential points to keep in mind when considering this surgery:

1. This is a fat preserving technique that reduces the incidence of postoperative lower lid hollowness.
2. This technique can be challenging and has a steep learning curve.



Fig. 66.6 Lower lid blepharoplasty with fat-repositioning and multilevel fat grafting to the midface. Note improved lower lid contour and effaced lid cheek junction. She also underwent upper blepharoplasty (courtesy of Guy Massry MD)

3. The surgical space is small and tight, which may lead to difficulty in maneuvering instruments.
4. Experience with standard transconjunctival surgery is helpful.
5. Watching a number of procedures before attempting the technique is important.
6. There is a risk of diplopia, so be careful dissecting around the inferior oblique muscle and assure forced ductions are free.

References

- Couch SM, Buchanan AG, Holds JB. Orbicularis muscle position during lower blepharoplasty with fat repositioning. *Arch Facial Plast Surg.* 2011;13(6):387–91.
- Edelstein C, Goldberg RA, Shorr N, Balch KC. Transconjunctival approach to the arcus marginalis release. In: Mauriello JA, editor. *Unfavorable results of eyelid and lacrimal surgery.* Boston: Butterworth Heinemann; 2000. p. 20–5.
- Hamra ST. Arcus marginalis release and orbital fat repositioning in midface rejuvenation. *Plast Reconstr Surg.* 1995;92:354–62.
- Hamra ST. The role of orbital fat preservation in facial aesthetic surgery. A new concept. *Clin Plast Surg.* 1996;23:17–28.
- Nassif PSN. Lower blepharoplasty: transconjunctival blepharoplasty. *Facial Plast Clin North Am.* 2005; 13(4):553–9.
- Yoo DB, Peng GL, Massry GG. Transconjunctival lower blepharoplasty with fat repositioning: a retrospective comparison of transposing fat to the subperiosteal vs. supraperiosteal planes. *Arch Facial Plast Surg.* 2013;15(3):176–81.