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The Complications of Blepharoplasty Surgery – Part 2

By James Oestreicher, MD, FRCSC

Part 1 of this comprehensive presentation by Dr. James Oestreicher, a leading Canadian Oculoplastic Surgeon, was featured in the January/February issue of *Ophthalmology Rounds;* Part 2 is presented in this issue.

Jeffrey Hurwitz, Editor, *Ophthalmology Rounds*

Scar abnormalities

External eyelid wounds need to be placed symmetrically and closed meticulously to avoid asymmetry. Occasionally, incision lines may look hypertrophied, particularly in patients likely to form keloids. However, eyelid skin heals better than almost any other skin on the body and true eyelid keloids are rare. Occasionally, the incision line may be a little thick and red at 4 weeks and judicious use of time, massage, and vitamin E cream is useful. Very rarely, topical or injected steroids can be used.

Epithelial inclusion cysts should be distinguished from scar thickening since they may need unroofing or excision. Suture granulomas can be avoided by using inert prolene sutures and removing them completely. CO_2 laser skin incisions should be avoided in Asian and Black patients due to the risk of dyspigmentation and scar hypertrophy; however, the laser can be safely used inside the skin for fat removal in these patients. Conjunctival incisions may occasionally develop pyogenic granulomas. If a short course of topical steroids does not cure the problem, the treatment is excision.

Pigmentary abnormalities

Many patients present for correction of "dark circles under the eyes." These are caused by 3 factors:

- shadowing caused by fat bulging above the dark area
- the blood supply of the fat showing through the thin eyelid skin
- actual pigment in the epidermis and dermis.

Fat removal will help the first 2 causes, while laser skin resurfacing can aid the third if the pigment is relatively superficial. The patient must be a resurfacing candidate to consider this treatment modality (ie, Fitzpatrick skin type, I, II, or III), and the risks of hypopigmentation and hyperpigmentation should be stressed. If pigment is present without fat herniation, treatment with skin bleaching agents can be tried first. In darker-skinned individuals at risk for reactive post-treatment hyperpigmentation, pre- and post-treatment with topical Retin A and bleaching creams can be utilized. Various compositions of bleaching creams have been produced, containing combinations of hydroquinone, glycolic acid, kojic acid, retinoic acid, and hydrocortisone.

Non-laser induced post-operative hyperpigmentation can result from hematoma formation and excess sun exposure. Laser resurfacing itself carries a risk of hypopigmentation (very rare in eyelid skin) and hyperpigmentation. Patients with vitiligo may have an increased risk of hypopigmentation. A test spot can be offered to the patient, although a good result with the test spot is not a guarantee of subsequent good results. There is no consistently effective treatment for hypopigmentation. Mild hyperpigmentation

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is relatively common at 4 weeks post-resurfacing and will usually resolve spontaneously. If noted, however, it should be treated with bleaching creams. If persistent, intense pulse light is a useful adjuvant treatment.

Post-laser resurfacing erythema is universal and expected. All patients need to be warned in advance and non-laser alternatives should be explored. Laser resurfacing in appropriate patients, combined with transconjunctival blepharoplasty and appropriate lid tightening, gives a far superior result to conventional exterior blepharoplasty in terms of avoiding scar and eyelid retraction and giving a more natural and complete resolution of skin redundancy and rhytids. Erythema lasts an average of 3 months in women, but can be covered readily with make-up after 8 or 9 days. Men appear to have ruddier skin and their erythema lasts 60% as long on average. Pronounced or prolonged erythema is relatively uncommon and can be treated with topical 1% hydrocortisone cream or intense pulsed-light treatments. It is virtually unheard of for erythema to fail to resolve.

Epiphora and ocular discomfort

Due to postoperative swelling of eyelid tissues, blink dysfunction is common. This interferes with the tear pump mechanism. Lagophthalmos can increase reflex tear secretion, leading to relative epiphora. The puncta may be inturned or everted by swelling or tissue contraction caused by incision lines or laser resurfacing, which can also contribute to epiphora. Similarly, conjunctival chemosis caused by a transconjunctival incision and by drying related to lagophthalmos can cover the puncta. Lubrication, cool compresses, and observation will help resolve the problem. Similarly, corneal epithelial breakdown can result in transient pain, foreign body sensation, and tearing. The key in management is to promote healing of the corneal epithelium as rapidly as possible to prevent infective keratitis. Ophthalmic ointment and patching can be applied or a bandage contact lens utilized for 12 to 24 hours to allow rapid and comfortable corneal healing without unnatural pressure on suture lines.

Epiphora from damage to the lacrimal outflow system can occur if the incision line is carried too medially and too close to the horizontal midline. A useful landmark for the medial extent of the upper lid incision is the punctum. Stopping there avoids medial canthal webbing, as well as the possibility of lacrimal system injury. Incisions should be at least 4 mm to 5 mm above the punctum to avoid the canaliculus. Similarly, the medial extent of the lower eyelid incision should stop just laterally to the punctum, whether it is conjunctival or subciliary in nature.

True canalicular injury may require late repair if epiphora results. Many older patients do not have tearing with one obstructed canaliculus due to decreased tear production. If the obstruction is more distal than 8 mm from the punctum (unlikely in blepharoplasty surgery), a canaliculo-dacryocystorhinostomy (DCR) may reconstruct the system. For more proximal obstructions with tearing, a sequence of interventions is possible, starting with a three-snip on the punctum of the unobstructed canaliculus, followed by a DCR (to enhance flow through the unobstructed canaliculus), followed by a DCR with a Jones tube in refractory cases.

Upper eyelid overcorrection

Aesthetic and functional abnormalities result from excess skin and fat removal and from excess scarring or adhesions in and around the levator aponeurosis. Particular care must be taken by the surgeon in patients with grossly excessive skin, when the brows are particularly low, and if a previous blepharoplasty and/or brow lift have been performed. Previous eyelid trauma, dermatological conditions leading to tight skin, as well as Graves' disease, are risk factors for overcorrection. The surgeon must leave 10 mm of skin (as a general rule) under the brows and above the upper lid crease incision. If not, the eyelid will be too tight to close and the lid will not function independently of the eyebrow. Intractable exposure keratitis can result. A greater effect (in terms of lifting skin off the eyelashes) for less skin excision can be achieved by creating a higher lid crease during the blepharoplasty.

Upper lid retraction and scleral show (and lagophthalmos) can occur with excessive trauma to the levator and pre-aponeurotic fat. The latter can occur with excess laser energy deposition when the fat is removed. This can be avoided with proper technique and using a Q-tip backstop immediately behind the fat incision. Excess cautery to the levator should also be avoided.

Pure skin lack (without deep scarring) can be remedied by a full thickness skin graft. If the surgeon thought to preserve excised skin in moist gauze, it can be utilized up to 1 week post-operatively. Retroauricular skin is often available and is a good substitute for eyelid skin. The skin graft is placed in the upper eyelid crease to aid in hiding it in the supratarsal fold. However, it will always be less cosmetic than a primary blepharoplasty that has been done conservatively and may take up to one year to blend in.

If deeper scarring requires release, it should be done at the time of skin graft placement, along with upper lid traction suture placement; otherwise, the skin graft will be ineffective.[1-3] Deeper scar release carries the risk of under- or overcorrection, leading to ptosis or a recurrence of lid retraction; properly repairing this is an art in itself. More than one repair

may be required to achieve an optimum result. Upper eyelid spacer grafts (eg, sclera or tarsus) are best avoided since they are unnecessary and can be unsightly and palpable to the patient. It is critical to release the septum from the deeper tissues because its incorporation is often the primary etiologic agent of eyelid retraction. Secondary upper lid lengthening can also be done posteriorly if adequate skin grafting has already been carried out, thereby avoiding another skin incision. A useful technique is to leave the traction suture in for >1 week, enabling the patient to modulate the eyelid height by pulling against the levator to fine tune its ultimate height.

Because of the complexities in modifying an over-corrected upper lid, milder degrees causing symptomatic lagophthalmos can be addressed via lower lid elevation with lower lid posterior lamellar grafting (see the next section). In appropriate cases, this may ameliorate lagophthalmos without visible external incisions or the risk of induced ptosis or unsightly skin grafts. The amount of lagophthalmos must be to an extent that lower lid elevation would eliminate it (1 to 2 mm on average) and the lower lid position must be such that bringing it up that amount will not cover the inferior iris excessively.

Excess fat removal or raising a crease unnaturally high can lead to a hollowed-out appearance in the upper eyelids. Even a moderate amount can be upsetting to the patient who has always been heavy-lidded. Time will soften an upper lid eyelid crease as the patient learns to relax the eyebrows, which were chronically arched preoperatively (due to dermatochalasis), and the crease itself becomes less sharply defined. Filling in the hollowed areas can be problematic. Fat pearls, fat injections, dermis fat grafts, and alloplastic injections can be tried; however, the risks are significant and include brief effect, scarring and tissue irregularities, uneven contours, and ptosis and lid retraction. Blindness and embolic stroke can occur with accidental intravascular injection of these materials, particularly near the supraorbital vessels.[4,5]

Lower eyelid overcorrection and retraction

Abnormalities of lower eyelid position include lower lid retraction with scleral show, rounding of the lower eyelid contour, rounding of the lateral canthal angle, and frank ectropion. Similar to the non-blepharoplasty situation, these can result from skin shortage, middle-lamellar (orbital septum) scarring, and posterior lamellar (retractors and conjunctiva) cicatrisation. Horizontal laxity of the tarso-ligamentous sling, which is inadequately addressed at the time of blepharoplasty surgery, is a key factor in allowing the other elements to manifest after surgery.[6,7]

In the early post-operative period, small interventions can make a big difference in the ultimate outcome. Treatment of conjunctival chemosis can alleviate downward pressure on the lower eyelid. Elimination of topical allergy and, occasionally, short-term topical steroid use are helpful. The patient can be instructed in upward massage to keep infection and scarring at a minimum and alleviate retraction. If early cicatrix formation is detected, local non-depot steroid injection will occasionally eliminate the need for more complicated surgery. If it is apparent that the surgeon has underestimated the degree of horizontal laxity in the eyelids (ie, a tendon plication was performed instead of a formal tarsal strip procedure) and the lid is ectropic as a result, early revision can again avoid the need for more complex surgery at a later date.

Transconjunctival fat resection alone should be considered in younger patients who may have very little excess skin and whose skin may be resilient enough to tighten spontaneously post-operatively. Graded eyelid horizontal tightening may be performed in all but the youngest patients. Laser resurfacing is utilized where skin shrinkage and rhytid reduction are desired. The subciliary skin muscle flap approach to fat pads should be avoided if at all possible. In patients (especially males) with prominent skin and orbicularis excess who are not laser candidates, fat is removed transconjunctivally, the eyelid is tightened horizontally, and a conservative skin muscle pinch excision is utilized. Care is warranted in patients with a poorly-developed midfacial bony structure whose lower lids already sit low and where the potential for postoperative retraction is much higher. In these cases, prophylactic lower lid elevation and posterior lamellar grafting can be considered at the time of blepharoplasty surgery.

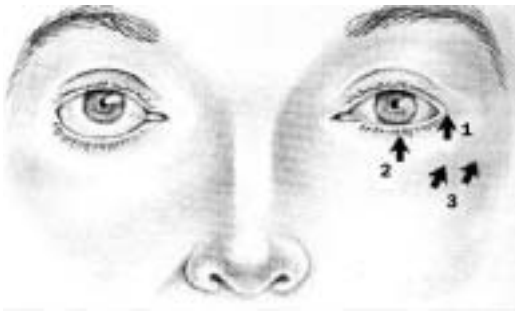
The 3-finger test

In late cases presenting after the acute healing period, the relative contribution of lid laxity, skin shortage, and middle lamellar scarring is assessed with the "3-finger test" (Figure 1).

• If the eyelid comes back into position and scleral show is eliminated by merely tightening laterally, horizontal shortening is all that is required, usually via a tarsal strip procedure. (It should be remembered that there is an increased rate of dehiscence of the periosteal attachment post-operatively in these circumstances).

• If a second finger is required to push upward in the center of the lower eyelid, a posterior-lamellar graft is usually required. If skin shortage is evident, however, full thickness skin grafting may be needed. The latter procedure is much less pleasing esthetically, with the skin grafts looking like patches that may require up to a year to blend in maximally. However, in this modern era, when surgeons are

Figure 1: The 3-finger test illustrated



Number 1 indicates pulling the eyelid laterally only; **Number 2** indicates pushing up the center of the lower eyelid; **Number 3** indicates elevating the midface.

aware that excess skin removal should be avoided, this scenario is uncommon. In equivocal cases, a posterior lamellar graft can be tried first and the patient is warned that a subsequent procedure with a skin graft may be necessary. Hard palate mucosa is commonly utilized for the graft;[8-13] alternatively, a free tarsoconjunctival graft can be used.[14-17]

• If a third finger is required to recruit skin by pushing the mid-face up, skin grafting or possible mid-face lifting may be necessary. A partial improvement may be achieved with a posterior lamellar graft and horizontal tightening alone.

The technique of tarsal strip repair was described in Part 1 of this issue. The skin and orbicularis, lid margin, conjunctiva, and lower lid retractors are removed from the excess eyelid laterally, creating a lateral tarsal strip that is then anchored to Whitnall's tubercle inside the lateral orbital rim. The lateral canthal angle is reformed to an acute configuration.[18-20]

Posterior eyelid elevation is achieved by careful dissection at the level of the bottom of the tarsal plate through the conjunctiva, lower lid retractors, and orbital septum; these are recessed downwards off the overlying orbicularis muscle. Visualized and palpated scar is released aggressively in the post-blepharoplasty retraction situation, so the lid is freed from attachments to the inferior orbital rim. A posterior lamellar graft is then placed between the cut lower edge of the tarsal plate and the recessed cut conjunctival edge. Hard palate mucosa or upper eyelid tasoconjunctiva can be used as the graft, but because these patients have already had aggressive surgery, it is often wise to avoid further manipulation of the upper lid by taking a donor graft from it. The lower lid is then tightened (if it is lax) or given an upward vector with a minimal Elschnig tarsorrhaphy (if it is not lax). A bandage contact lens or collagen shield is applied to protect the cornea and the lower lid is placed on upward traction overnight. These techniques are similar to those utilized to treat eyelid retraction in thyroid eye disease.

Excess hollowing from aggressive fat removal can be treated with the same enhancement techniques as detailed for the upper eyelids and is subject to the same risks and limitations.

When skin shortage dictates skin graft placement, the technique is similar to that for other forms of cicatricial ectropion. The previous scar is opened up, internal adhesions are widely released, and perfect hemostasis is obtained. The lid is placed on upward traction to facilitate this process and an appropriately-sized full-thickness graft is contoured to fit the defect after the eyelid is tightened horizontally. The lid should be kept on upward traction for 1 to 7 days with a frost suture to the lateral eyebrow.[21,22] Midfacial lifting is beyond the scope of this monograph (Figure 2 and 3).[23.]

Asymmetry

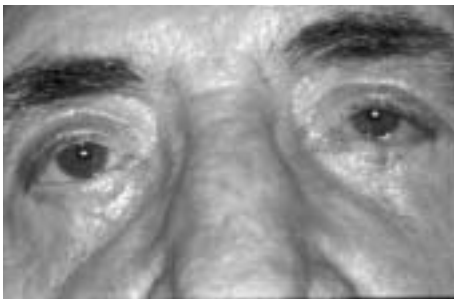
Careful preoperative planning and measurement should be routine for every surgeon. Both surgeon and patient should be aware of preoperative asymmetry and the potential for minor "touch-up" operations that are usually delayed for ≥3 months, if possible, after the primary procedure to avoid surgical "tail chasing." In some cases, it should be recognized that the asymmetry may not be corrected (such as minor brow height differences).

The commonest result noted by patients is lid crease asymmetry. If it persists, the lower crease can be raised by making a higher incision to match and fixating the crease to the levator aponeurosis just above the top of the tarsal plate. However, it is difficult to lower a crease that is too high. There is a risk of failure, with re-emphasis, doubling, or other scarring of the existing low crease. If essential, a lower incision is made and fat is teased forward between the skin and levator to prevent re-adhesion of these structures.

Another outcome noted by patients is asymmetry of lateral hooding reduction. Careful preoperative marking will minimize the incidence of this result. Many minor degrees of asymmetry will disappear with time. If persistent, a superolateral skin excision with crease reformation will raise the persistently hooded side. It is important to tailor the incision upwards at the lateral extent or the hooding will persist.

Figure 2: Severe lower eyelid ectropion and retraction in a patient who underwent blepharoplasty elsewhere followed by several reparative attempts by the same surgeon. The patient was given topical steroids by his original surgeon, resulting in untreated intraocular pressure of 45 OU. He had severe chemosis and discomfort due to significant lagophthalmos.

Figure 3: Post-operative view after lower lid elevation, scar release, posterior lamellar hard palate mucosal grafting, and skin graft on the left (more severe) side. The eyelids were operated on separately due to the need to patch and put on traction for a period of time after surgery. Intraocular pressure is back to normal.



Medial canthal webbing occurs when incisions are carried too medially. The skin then bridges the superomedial hollow of the upper lid in a straight line. Early recognition and aggressive massage will eliminate the majority of cases. Persistent cases are treated by a V- to-Y plasty procedure.

Asian blepharoplasty

This subset of blepharoplasty surgery requires specific knowledge of the distinguishing features between occidental and oriental eyelid anatomy. These differences are primarily due to a lower fusion point between the orbital septum and the levator aponeurosis in the Asian upper eyelid (allowing orbital fat to descend further down), as well as increased fat in the preseptal fibroadipose layer.

Asymmetry in Asian blepharoplasty is the most common complication. Careful incision planning and meticulous surgery will minimize this problem. Over-"westernization," by placing the crease too high should be avoided. In younger patients, crease formation by skin fixation to the anterior tarsal plate rather than the levator aponeurosis avoids ectropion of the upper eyelid margin and superior migration of the fold. Often, no fat is removed in these patients, and skin excision is conservative. The skin incision height is often quite low, 3 to 5 mm, depending on the preoperative consultation results. In older patients with excess upper lid fat, the septum needs to be formally opened to remove pre-aponeurotic fat. The skin incision should still be kept low, perhaps 5 to 6 mm at the most. Crease formation should not be high on the levator (if above tarsal plate at all) to avoid a distorted westernized look, asymmetry, and ptosis. In the lower eyelid in Asians, transconjunctival fat removal yields far superior results to an external approach.

Summary

Blepharoplasty is a widely practiced and successful operation. However, because of the complex structure and function of the eyelids, the potential for complications does exist. With appropriate case selection and careful surgical technique, most of these can be avoided. Techniques exist to effectively treat most, if not all, complications that do arise.

References

1. Bartley GB. The differential diagnosis and classification of eyelid retraction. *Ophthalmology* 1996;103:168-76.
2. Shorr N, Christenbury JD, Goldberg RA. Tarsoconjunctival grafts for upper eyelid cicatricial entropion. *Ophthal Surg* 1988; 19:316-320.
3. Jordan DR, Anderson RL, Nowinski TS. Tarsoconjunctival flap for upper eyelid reconstruction. *Arch Ophthalmol* 1989;107: 599-603.
4. Silkiss R, Baylis HI. Autogenous fat grafting by injection. *Ophthal Plast Reconstr Surg* 1991;3:71-75.
5. Ersek RA. Transplantation of purified autologous fat: A 3-year follow-up is disappointing. *Plast Reconstr Surg* 1991;87: 219-228.
6. McCord CD Jr. The correction of lower lid malposition following lower lid blepharoplasty. *Plast Reconstr Surg* 1999;103: 1036-9.
7. Jelks GW, Jelks EB. Repair of lower lid deformities. *Clin Plast Surg* 1993;20:417-25.
8. Tenzel RR. Treatment of lagophthalmos of the lower lid. *Arch Ophthalmol* 1969;81:366-8.
9. Shorr N. "Madame Butterfly" procedure: Total lower eyelid reconstruction in three layers utilizing a hard palate graft: Management of the unhappy post-blepharoplasty patient with round eye and scleral show. *Int J Aesthetic Restor Surg* 1995;3:3.
10. Patipa M, Patel BC, McLeish W, Anderson RL. Use of hard palate grafts for treatment of post-surgical lower lid eyelid retraction: A technical overview. *J Craniomaxillofac Trauma* 1996;2:18-28.

11. Holds JB, Anderson RL, Thiese SM. Lower eyelid retraction: A minimal incision surgical approach to retractor lysis. *Ophthal Surg* 1990;21:767-771.
12. Patipa M. The evaluation and management of lower eyelid retraction following cosmetic surgery. *Plast Reconstr Surg* 2000;106:438-440.
13. Patel BC, Patipa M, Anderson RL, McLeish W. Management of post-blepharoplasty lower eyelid retraction with hard palate grafts and lateral tarsal strip. *Plast Reconstr Surg* 1997;99:1251-1260.
14. Ferri M, Oestreicher JH. Treatment of post-blepharoplasty lower lid retraction by free tarsoconjunctival grafting. *Orbit* 2002;21:281-288.
15. Hawes MJ, Jamell GA. Complications of tarsoconjunctival grafts. *Ophthal Plast Reconst Surg* 1996;12:45-50.
16. Leone CR, Van Gemert JV. Lower lid reconstruction using tarsoconjunctival grafts and bipedicle skin-muscle flap. *Arch Ophthalmol* 1989;197:758-760.
17. Stephenson CM, Brown BZ. The use of tarsus as a free autogenous graft in eyelid surgery. *Ophthal Plast Reconstr Surg* 1985;1:43-50.
18. Hester TR. The trans-blepharoplasty approach to lower lid and mid-facial rejuvenation revisited: The role and technique of canthoplasty. *Aesthetic Surg* 1998;J.18:273.
19. Anderson RL, Gordy DD. The tarsal strip procedure. *Arch Ophthalmol* 1979;97:2192-2196.
20. Jordan DR, Anderson RL. The lateral tarsal strip revisited: The enhanced tarsal strip. *Arch Ophthalmol* 1989;107:604-606.
21. Edgerton MT Jr. Causes and prevention of lower lid ectropion following blepharoplasty. *Plast Reconstr Surg* 1972;49:367-73.
22. Shaw GY, Khan J. The management of ectropion using the tarsoconjunctival composite graft. *Arch Otolaryngol Head Neck Surg* 1996;122:51-55.
23. Anderson RD, Lo MW. Endoscopic malar/midface suspension procedure. *Plast Reconstr Surg* 1998;102:2196-208.
24. Gunter JP, Hackney FL. A simplified trans-blepharoplasty subperiosteal cheek lift. *Plast Reconstr Surg* 1999;103:2029-35.

Abstract of interest

The evaluation and management of lower eyelid retraction following cosmetic surgery.

PATIPA M.

Lower eyelid retraction is a common complication after cosmetic surgery of the lower eyelids, midface, and the adjacent face. Lower eyelid retraction is defined as the inferior malposition of the lower eyelid margin without eyelid eversion. Lower eyelid retraction presents clinically with scleral show; round, sad-looking eyes; lateral canthal tendon laxity; and symptoms of ocular irritation, including photophobia, excessive tearing, and nocturnal lagophthalmos. These patients frequently require ocular lubricants, including artificial tears and ointments, which often provide only minimal alleviation of their symptoms. The author has observed that lower eyelid retraction is usually accompanied by midface descent. On the basis of surgical observations, the causes of lower eyelid retraction seem to be multifactorial and include scarring between the orbital septum and capsulopalpebral fascia (or lower eyelid retractors), lateral canthal tendon laxity, and midface descent. After describing the causes of lower eyelid retraction, the author presents a system for evaluating patients that can assist the surgeon in choosing the surgical procedure(s) required to correct the lower eyelid malposition. The surgeon must know how to tighten a lax lateral canthal tendon, be familiar with the anatomy of the lower eyelid from conjunctiva to skin side, and know how to surgically elevate the midface. The techniques for correcting lower eyelid retraction are also presented. Appropriate surgery, which is determined on the basis of the preoperative evaluation, has allowed for the correction of these previously difficult-to-treat lower eyelid malpositions with minimal complications.

Plast Reconstr Surg 2000;106(2):438-459.

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