Blending the Lid/Cheek Junction

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Background: Rejuvenation of the periorbital area requires an understanding of the morphologic changes that occur with aging. Blending the lid/cheek junction is a goal of periorbital rejuvenation.

Objective: Transblepharoplasty techniques are proposed to achieve aesthetic periorbital rejuvenation with predictable improvement and minimal morbidity.

Methods: Techniques of blending the lid/cheek junction are presented that include septal advancement with both septal tightening and subseptal fat pad contouring when indicated, or complete release of the orbital orbicularis oculi muscle, along with vascularized and/or free fat transfer over the inferior orbital rim, to produce a youthful contour. Lid support was enhanced with a medially based orbital orbicularis oculi muscle sling, which further improves the contour of the lid/cheek junction through muscle release to the medial inferior orbital rim.

Results: Fifty-eight consecutive cases were reviewed that included lower lid blepharoplasties with or without a concomitant midface lift. Four cases of midface lift did not require any lower eyelid procedures. Septal reset or aggressive orbicularis oculi release with fat transfer were performed in 30 patients. A medially based orbicularis oculi flap was developed to support the lid, and canthopexy or canthoplasty was performed as indicated. Complete release of the medial fibers of the orbital orbicularis oculi muscle allowed for tension-free placement of vascularized fat or free fat grafts and a more profound blending of the lid/cheek junction, since the flap advancement acted as a handle to carry the upper midface soft tissues.

Conclusions: Transblepharoplasty options for repositioning periorbital soft tissues are reliable means for blending the lid/cheek junction. (Aesthetic Surg J 2005;25:255-262.)

Attention to the aging periorbital area on the part of patients and surgeons has produced an increased understanding of the fundamental changes that occur in this vital area (Figure 1). Arguably, failure to address the morphology of this area and to develop a template for rejuvenation detracts from panfacial rejuvenation. The author has studied the available options for the past 8 years and has developed a reliable method to rejuvenate this area while minimizing sequelae and complications. A brief review of important contributions to my current technique includes the following.

- de la Plaza\textsuperscript{1,2}: an approach to preservation and redraping of lower eyelid fat.
- Hamra\textsuperscript{3-5}: methods for repositioning the orbital septum and subseptal fat to contour the lid/cheek junction, and for repositioning of the orbicularis oculi.
- Ramirez\textsuperscript{6}: further refinements of subperiosteal dissection and midface elevation.
- Hester\textsuperscript{7}: a transblepharoplasty centrofacial approach to midface rejuvenation.
- Fuente del Campo\textsuperscript{8}: a subperiosteal approach to soft tissue repositioning.
- Little\textsuperscript{9-11}: a combined approach to facial rejuvenation, including subperiosteal midface suspension, anterior cheek imbrication, and inferior orbital rim dermal fat grafting.
- Barton\textsuperscript{12}: validation of septal reset and fat repositioning in lid/cheek blending.

Many patients can benefit from an aggressive approach to midface correction, particularly those who demonstrate more profound soft tissue descent and loss of form and volume. However, in many younger patients, aesthetic improvement can be achieved with the less vigorous maneuvers described here. (The author’s preferred method for aggressive midface rejuvenation has been published\textsuperscript{13} and will not be reviewed here.)

Materials and Methods

Preoperative evaluation

A diagnosis of the morphology of the lower lid/cheek junction was performed, including evaluation of malar bags, malar fat pads, tear-trough deformities, festoons of orbital orbicularis oculi muscle, and composition and
severity of the nasolabial fold. The upper lid was evaluated, with particular attention paid to the effect that upper lid improvement might have on any lower lid procedures to be performed. A careful examination was made of the following features:

- Lower eyelid position relative to the corneal/scleral limbus
- Position of the globe relative to the inferior orbital rim
- Position of the lateral canthus relative to the position of the medial canthus
- Tarsoligamentous support of the lower eyelid
- Condition of the upper and lower eyelid skin
- Location and quantity of subseptal fat (upper and lower eyelid)
- Quantity of retro-orbicularis oculi fat (ROOF) and suborbicularis oculi fat (SOOF) pads
- Observation of the depth of the nasojugal groove
- Thickness of each segment of the orbicularis oculi muscle (pretarsal, preseptal, orbital)

A surgical plan was developed based on the preoperative findings that might include the following steps:

- Conservative upper lid blepharoplasty, with preservation of infrabrow fullness when desired.
- Transpalpebral corrugator muscle resection.
- Repair of blepharoptosis.
- Improvement of the lid/cheek junction with component lower lid rejuvenation, based on individual patient morphology through the use of maneuvers (Box), including septal reset without fat transposition, fat transposition, fat pad reduction, orbicularis muscle sling, lid tightening procedures, and/or conservative skin and muscle resection.

Figure 1. Morphologic features of the aging face.

Lower Lid Blepharoplasty Template

<table>
<thead>
<tr>
<th>Procedure</th>
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<tbody>
<tr>
<td>Skin/muscle flap</td>
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<tr>
<td>Release of medial orbicularis oculi muscle and fascia</td>
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<tr>
<td>Fat resection/preservation</td>
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<tr>
<td>Septal reset or fat flap advancement</td>
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<tr>
<td>Lateral canthopexy/wedge resection</td>
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<tr>
<td>Muscle sling</td>
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<tr>
<td>Skin/muscle excision</td>
</tr>
<tr>
<td>Skin closure</td>
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<tr>
<td>Support/elastic Steri-strips</td>
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Surgical procedure

Surgery was performed under general anesthesia with local infiltration of 1% lidocaine with epinephrine 1:100,000 for hemostasis and hydrodissection. (Alternatively, monitored sedation and local anesthesia could be utilized.) If an upper lid blepharoplasty was planned, closure was delayed until the lower lid/cheek procedure was performed.

Septal reset

If the tear-trough deformity was minimal or nonexistent and the fat pads were mildly protruding, it was only necessary to tighten the orbital septum above the arcus marginalis with the microdissection cautery needle or 5-0 Vicryl sutures (Ethicon, Somerville, NJ) to diminish the convex appearance to the lower lid, without adding fat beneath the orbicularis oculi muscle (Figure 2). The entire area was lightly sprayed with 0.25% bupivacaine with epinephrine and triamcinolone, 10 mg/mL in a 3-mL syringe with a 30-gauge 1/2-inch needle (1.5 mL of 0.25% bupivacaine and 0.5 mL of triamcinolone was sufficient for both lower eyelids), to decrease inflammation and discourage scar formation in the midlamella. The degree of horizontal lid laxity was evaluated and the lower lid was shortened if true laxity existed with the lateral canthus in normal position. If the lateral canthus had migrated inferiorly, a canthopexy was considered in addition to the support provided by the muscle flap described below.

Complete muscle release and fat transposition (Figure 3)

A lower lid skin flap was elevated for 3 to 4 mm just beneath the ciliary margin to protect the pretarsal orbicularis oculi muscle. A 5-0 nylon suture was placed through the lid margin centrally to place tension on the lower lid in the superoposterior direction. Profound tension was
achieved by draping the suture over a moist gauze pad and anchoring it with a hemostat to the head drape, thereby avoiding lower lid inferior displacement when the septum and fat were advanced to the orbital rim. A skin-muscle flap was elevated from this point to the inferior orbital rim. The orbital septum was not violated at this time. The fascia beneath the inserting fibers of the orbicularis oculi muscle on the medial portion of the inferior orbital rim was incised with a microdissection needle cautery at the level of the arcus marginalis. A Freer elevator was used to elevate the orbicularis oculi muscle sufficiently off the rim to allow comfortable placement of subseptal pedicled orbital fat. If the muscle was left tightly adherent to the rim, the fat would be compressed and survival of the pedicled fat flap would be compromised. The orbital septum was incised, and a fat flap was sutured with rapid absorbing plain catgut beneath the muscle medially to correct the tear-trough deformity, and to the SOOF centrally and laterally to blend the lid/cheek junction.

The use of a medially based orbicularis oculi muscle sling (Figure 4) was routine in the performance of a lower lid blepharoplasty when more than a skin pinch was planned. The lateral segment of the orbicularis oculi mus-

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cle along the wound edge was carefully dissected from
the thin overlying skin to create a medially based orbicu-
laris oculi flap. Several options were available to the sur-
geon for flap transposition. If a concomitant upper lid
blepharoplasty was performed, a tunnel was created
beneath the lateral fibers of the orbicularis oculi muscle
and the lower eyelid. The lower eyelid muscle flap was
passed through the tunnel to the upper lid and the flap

Figure 3. Complete muscle release and fat transposition. A, Exposure of the arcus marginalis. B, Arrow indicates arcus marginalis. C, A Freer elevator was used to release the orbicularis oculi muscle fascia. D, Muscle release, continued. E, Further undermining of the cheek flap. F, Advancement of tissue beneath the orbicularis oculi muscle. G, Fat transfer complete. H, Bupivacaine and triamcinolone spray of midlamella.
FIGURE 4. Medially based orbicularis oculi sling with the muscle flap sutured to the periosteum of the orbital rim. **A,** Illustration of the muscle flap. **B,** Dissection of the muscle flap. **C,** The muscle flap anchored to the deep temporal fascia in an alternative attachment. **D,** Wound closure with fast-absorbing 3–0 plain catgut suture.

FIGURE 5. **A, C,** Preoperative views of a 45-year-old woman. **B, D,** Postoperative views 18 months after contouring of upper and lower eyelids and tear-trough correction.
was anchored to the deep fascia with 2 #5-0 Vicryl sutures (Ethicon, Somerville, NJ).

If an upper lid blepharoplasty was not performed and optimal correction to the lower lid/cheek junction was desired, a small incision was made in the upper lid crease laterally to allow dissection to the deep fascia and the pass-through tunnel. If less correction of the lid/cheek junction was desired, the muscle flap was advanced only a short distance above the canthal line. Any dimpling of the orbicularis oculi muscle to the overlying skin was released and redundant skin and muscle were trimmed conservatively to avoid a double layer of muscle beneath the ciliary margin. A check was made to confirm symmetry with the opposite upper and lower eyelids. OpSite (Smith and Nephew Inc., Memphis, TN) or Tegaderm (3M, St. Paul, MN) was applied over the lateral segment of the lower eyelid and malar area to significantly decrease postoperative edema. Elasticised steri-strips (3M, St. Paul, MN) were used to advance the malar skin to the temporal skin, supporting the lower lid if needed.

**Results**

A review of 58 consecutive cases indicated that 34 patients (average age 49 years) underwent lower lid blepharoplasty without a midface lift. Of these, 26 underwent fat transfer alone, and 4 underwent septal reset without fat pad transfer. One of these patients underwent a capsulopalpebral fascia reset rather than a more distal septal reset. The other 4 patients underwent transconjunctival fat pad reduction only. There was one complica-
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A bilateral lower eyelid malposition in an obese female with heavy lower lids. She responded to vertical massage and did not require surgical lower eyelid repositioning.

Twenty-one patients (average age 58 years) underwent combined lower lid blepharoplasty and subperiosteal midface lift. Five of these 21 patients received only a skin pinch lower lid blepharoplasty without fat or septal repositioning.

Three patients (average age 42 years) underwent a subperiosteal midface lift without a concomitant lower lid blepharoplasty. In this younger group of patients, the goals of periorbital rejuvenation could be achieved through performance of a vertical vector midface lift alone, without performing any procedures on the lower eyelid.

Overall results have been satisfactory to both patients and the surgeon and have provided a reliable means of blending the lid/cheek junction (Figures 5 through 7).

Discussion

For the past 18 months, the author has used the described technique in selected individuals who were not candidates for, or who refused, more aggressive procedures to improve the lid/cheek junction. By freeing the medial fibers of the orbicularis oculi muscle from their insertion on the orbital rim, the medially based orbicularis muscle sling (flap) achieves more impressive contour enhancement of the lid/cheek junction since it acts as a handle to elevate this composite flap. Ease of flap rotation is a welcome bonus to this maneuver as it enhances lower lid tone and support. The septal and fat repositioning are significant factors in improving the lid/cheek junction. However, it is the addition of the orbicularis oculi muscle release along the orbital rim that substantially adds to the contour improvement. The described technique does, however, require a 10- to 14-day recovery period, which is longer than that required for a standard lower lid blepharoplasty.
Conclusion

The transblepharoplasty techniques described in this paper can be used to achieve periorbital rejuvenation with predictable improvement, satisfactory aesthetic results, and minimal morbidity for those patients who refuse or are contraindicated for more aggressive surgical treatment. The recovery period is slightly longer than that required for standard lower lid blepharoplasty.

References


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