The author describes how anatomic findings and the differing goals of male and female patients, as well as other considerations, have altered his technique for surgical correction of the aging midface. (Aesthetic Surg J 2001;21:349-353.)

The standard subcutaneous or limited subsuperficial musculoaponeurotic system (SMAS) face lift fails to improve both the malar pad and the lower eyelid-cheek junction. A common aging pattern in the midface consists of periorbital hollowing, ptotic malar fat pads, tear trough deformity, prominent nasolabial folds, and relaxation of the lateral canthus. In developing an approach to the midface, my goals include preservation and repositioning of facial fat and restoration of youthful contour.

Factors Affecting Midface Surgery

Stimulated by the work of Hester et al, I began to develop a technique that would provide a predominantly vertical vector by using a periosteal hinge flap based on the arcus marginalis. The predominant complication related to midface rejuvenation is lid malposition. Over 4 years, I found that 4 variables principally contribute to success or failure in the surgical correction of the aging midface: sex, age, morphology, and prior surgery in the region.

Sex and age. Men and women have different goals for facial rejuvenation. In general, women will tolerate the often-prolonged recovery time required for a subperiosteal midface lift more readily than will men. Men prefer the correction achieved with a vertical vector rather than an oblique vector. Corrections in older patients require greater tissue rearrangement and ancillary procedures to produce facial harmony.

Morphology. Early in my experience, I did not appreciate the profound effect that a deficient malar eminence has on the surgical outcome. The lateral canthus and lower lid will not reliably maintain position without adequate lateral canthal stabilization. A buttress created by the placement of a thin malar shell beneath the elevated midface flap provides additional support to the flap and helps maintain lower eyelid position. Therefore the underlying skeletal structure plays a significant role in the rate of complications when the operation is performed through the lower eyelid. To minimize complications in the skeletally deficient midface, I abandoned the lower eyelid approach in favor of the transbuccal approach. I now use the lower eyelid approach rarely in women. However, this approach is used commonly in men who require a lower-lid blepharoplasty and would not benefit from an oblique vector.

Prior surgery. Additional factors to consider include previous lower-lid blepharoplasty, previous malar/submalar augmentation, and prior midface lift.

Technique

Female patients. The correction sought by women in general is vertical and oblique except for women with a wide interzygomatic distance who may not desire an oblique vector of correction. To accomplish this, the following steps are taken (Figures 1 and 2). A 4-cm temporal incision is made behind the hairline parallel to the follicles. Dissection is performed between the superficial and deep layers of the deep temporal fascia to the orbital rim. The orbital rim dissection frequently includes release of the orbital ligament and the periorbital ligament along the rim for a varying distance, dependent on the findings in the upper eyelid, brow, and glabellar areas. Dissection between the 2 layers of the deep temporal fascia proceeds around the orbital rim until the malar eminence is visualized subperiosteally with the endoscope or merely identified with the “feel” of the periosteal elevator.

The buccal sulcus incision is completed, and dissection proceeds to a subperiosteal plane where it can safely be continued obliquely and blindly over the malar eminence to communicate with the temporal dissection. The medial dissection is done with direct visualization to protect the infraorbital nerve. The dissection sweeps medially. Blunt dissection with an index finger frequently finds lateral and medial fibers that prevent the composite flap from
moving freely. An anatomically correct malar shell is often placed slightly below the malar eminence to provide submalar fullness in a flat midface that remains uncorrected by the advancement of the composite flap. The desired vector and position of suture placement is determined by manually moving the midface and then passing a 25-gauge needle from skin to maxilla. A pen is used to mark the location for suture placement. A 2-0 or 3-0 PDS suture (Ethicon, Somerville, NJ) is passed with a tonsil clamp to the temporal incision, where it is anchored to the deep temporal fascia (Figure 3). A figure-of-8 3-0 Vicryl suture (Ethicon) secures the cable suture (Figure 4). A spanning suture of 3-0 PDS from the superficial to deep temporal fascia (Figure 5) smooths the area and combines with adequate mobilization to prevent bunching. The intraoral incision is irrigated with diluted povidone-iodine (Betadine) solution before closure to prevent bacterial contamination. A one-quarter-inch Penrose drain is placed intraorally for 24 to 48 hours. The findings in the lower eyelid will determine the approach, which may consist of a skin pinch removal, a skin/muscle short dissection and trim with lateral canthopexy and muscle sling, transconjunctival fat removal (rarely indicated) with or without a skin pinch removal,
or laser resurfacing with a canthopexy and muscle sling as needed. Elastic tape or steri-strips (3M, Rochester, MN) support the elevated cheek flap to the temporal skin for 5 to 7 days.

**Male patients.** The goals in men are different. An oblique vector is usually not desirable because it tends to accentuate the malar area. In my opinion, a vertical vector is preferable in men; therefore I approach this area through the lower eyelid. However, I avoid the subperiosteal plane to minimize edema and the risk of lid retraction (Figure 6).

The dissection proceeds as a skin-muscle flap lower-lid blepharoplasty. Periorbital fat is lightly cauterized where it appears to be excessive. True hypertrophied fat pads can be reduced (rarely necessary) and the septum repaired over the fat pads anchored to the arcus marginalis. Dissection continues beneath the orbicularis oculi muscle and through the malar ligament, above the zygomaticus major muscle. The flap, consisting of skin, malar fat pad, muscle, suborbicularis oculi fat, and SMAS, is

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**Figure 4.** The cable suture is anchored to the deep temporal fascia and secured with a figure-of-eight suture.

**Figure 5.** Expansion of the lateral brow.

**Figure 6.** Preferred plane of dissection in male patients.
elevated to the midnasolabial fold or lower if necessary to achieve the desired correction. Anchoring the flap to the arcus marginalis provides secure fixation of the elevated mid face with attention to lower-lid position to avoid tension on the eyelid or the orbital septum (Figure 7). Conservative skin/muscle resection is performed after a lateral canthopexy and muscle sling (Figure 8). Horizontal lid laxity is corrected with an inferolateral canthotomy and full-thickness wedge resection of the lower eyelid, with anchoring of the shortened lid to the orbital rim periosteum. A muscle sling based medially is added for support. In cases of midface flattening that cannot be fully corrected with the elevated flap, a malar implant can be added through a gingival approach, as described in the preceding section.

The evolution of these techniques has involved a steep learning curve. Modifications of techniques have resulted in reliable and safe methods for bringing midface rejuvenation into balance with the surgically corrected upper and lower thirds of the aging face (Figure 9).

References

Figure 9. A, C, Preoperative views of a 47-year-old woman who underwent an endoscopic brow lift, a subperiosteal midface lift through the temporal and transbuccal approach, a lower-face and neck lift, and a chin augmentation. B, D, Postoperative views after 4 months.