Elevation of the Malar Fat Pad With a Percutaneous Technique

Gregory S. Keller, MD; Ali Namazie, MD; Keith Blackwell, MD; Jeffrey Rawnsley, MD; Sajjad Khan, MD

Objective: To describe a simplified method of malar fat pad elevation to rejuvenate the midface, nasolabial folds, labiomental folds, infraorbital hollows, and jowls via a percutaneous approach.

Patients and Design: One hundred eighteen patients were evaluated over a 12-month period in a prospective fashion by the operating surgeon. Preoperative and postoperative photographs were used for comparison.

Setting: Private practice.

Main Outcome Measures: Elevation of the malar fat pad by a measured amount.

Results: At 3 months, all patients had a significant elevation of the malar fat pad (3-7 mm), with the exception of 2 early patients who underwent revision surgery, with satisfactory results.

Conclusions: A simplified method of malar fat pad elevation is described. This method allows for elevation of the malar fat pad without extensive dissection. Excellent results are obtained with very little morbidity.

Arch Facial Plast Surg. 2002;4:20-25

REVERSAL OF midfacial aging has become a focus of facial rejuvenation. Recently, the causes of midfacial aging have become well defined. The sagging of the malar fat pad over the relatively fixed areas of the muscular and ligamentous connections of the nasolabial and labiomental folds produces a deepening of these structures. The downward migration of the fat pad produces hollowness in the midfacial and infraorbital areas that accentuates the aging process. Descent of the malar fat pad also contributes to the mid-face portion of the jowl (Figure 1).

While midfacial aging is apparent in the older, classic face-lift patient, changes in the midface also appear in the 35- to 45-year-old patient who does not manifest other signs of aging. Many of these younger women, disturbed by the early signs of aging, seek classical face-lifts in an attempt to reverse aging confined to the midface. Dissection and suturing are often not the time for). Most of them rely on suture elevation of the ptotic malar fat pad. Dissections and suture placement are difficult and/or associated with surgical morbidity.9,10 Surgeons also use techniques of malar fat pad elevation through a blepharoplasty incision. While useful for the correction of ecrropian and eyelid contraction, these techniques have surgical morbidity and scarring in the lateral canthus.11-13

A simplified method of malar fat pad elevation to rejuvenate the midface, nasolabial folds, labiomental folds, infraorbital hollows, and jowls via a percutaneous approach.
**TECHNIQUE**

The senior author has used 2 separate techniques. The first involved a superior subcutaneous anchoring of the suspension sutures in the temple via a subcutaneous polytet (Gore-Tex; Gore-Tex Inc, Flagstaff, Ariz) patch, as shown to him by Sasaki. The sutures and polytet patch were anchored through a needle hole. No incisions in the temple or nasolabial fold were made. This technique was successful, but the senior author modified it because of several patients' ability to palpate the subcutaneous polytet patch. This annoyed 2 patients enough to require a minor reoperation, with removal of the patch and replacement of the sutures.

Our current malar pad suspension technique, which requires a small incision in the temporal hairline, involves fixation of the sutures to deep temporal fascia. With this technique, the patient is brought to the operating room and markings are placed as noted in Figure 2. These markings delineate the insertional points of the suture, the projected travel pathway of the Keith needle, and the temple incision and anchoring point.

While the surgeon is marking and injecting the patient, the assistant or scrub nurse is fashioning the double strand of sutures with a small polytet bolster. One end of a 4-0 polypropylene (Prolene) suture is passed through the eye of a Keith needle and stabilized with a hemostat. The suture is then passed through both ends of a 2 × 2-mm polytet bolster and passed through the eye of a second Keith needle and stabilized with a hemostat. Both ends of a 3-0 polyglactin 910 (Vicryl) or polyglycolic acid (Dexon) suture are then placed parallel to the 4-0 polypropylene sutures through the Keith needles and stabilized by the same hemostats (Figure 3).

The patient's hair is then braided out of the way of the incision, and the patient is prepared and fully draped. Meticulous attention to surgical technique is imperative to avoid infection. The surgeon uses a standard scrub and full gowning. Use of a modified sterile technique with surgical gloving and draping of the head area produced 2 surgical infections that required a course of antibiotics to resolve.

A No. 15 blade is used to make a 2- to 3-cm incision in the temporal hairline at the end of the projected pathway of needle travel. An iris scissors is used to complete the dissection down to the deep temporal fascia. An elevator is used to dissect a pocket posteriorly and then anteriorly past the brow along the deep temporal fascia in the pathway of needle travel. Creation of this pocket is a modification of the procedure that both protects the facial nerve and allows more elevation of the malar pad.

The surgeon then makes a small stab incision with a No. 11 blade at the demarcated spots that are to be the needle insertion points. The suture loop that was previously constructed with a Keith needle at each end is placed on the table. The Keith needle attached to each suture end is then passed through the stab incision to move the suture loop into position (Figure 3).

The Keith needle is inserted almost to the level of the bone and angled upward toward the temple incision. The plane of dissection is a palpable one that ends up in the "suprafibromuscular" plane in the cheek, ie, the superficial fascial plane of the face, below the malar fat pad and above the zygomatic muscles. An Aufricht nasal elevator is then placed in the temple incision, and the Keith needle is advanced into the temple area under the elevator and retrieved as pulled through the incision.

A "sawing" motion with the 3-0 polyglactin 910 suture is used to create a "passageway tract" for the 4-0 polypropylene–bolstered suture loop, which remains outside the stab incision. A release of the "puckered" tissue is then observed. This is the critical point of the operation, in that if the tract that is created is too shallow, a pucker can result. If the sawing motion is continued for too long and the tract is placed too deep, the subsequent elevation of the malar fat pad that is obtained will be too little. If the tract does not result in a lack of a pucker or the desired elevation of the malar fat pad, the suture is then removed and another suture loop is placed.

The 3-0 polyglactin 910 suture is then removed. The 4-0 polypropylene–bolstered suture loop is then maneuvered through the stab incision and seated within the tract (Figure 4). Tugging on the suture loop demonstrates a lack of pucker and upward movement of the malar fat pad. The second suture loop is then placed through the second stab incision in a similar manner. After both suture loops are placed into position, a French eye needle is used to anchor the sutures to the deep temporal fascia. The sutures are then tied down and the temple incision is closed.

bital hollows, and jowls has obvious merits. Direct percutaneous suture suspension techniques to achieve these goals were attempted by the senior author (G.S.K.) and others over the last 10 years. While useful for stabilization of the malar fat pad, elevation of fallen structures was unable to be performed by direct suture without a pucker being produced at the site of suture placement.

In 1995, Su reported a successful technique for a "closed suspension mini–cheek lift to reduce the nasolabial fold," during which percutaneous suspension sutures are passed through the skin of the nasolabial fold with a Keith needle. The sutures are anchored to the deep temporalis fascia with a French eye needle after limited undermining with a closed-channel liposuction cannula.

Recently, Sasaki successfully elevated the midface with a direct percutaneous technique. Our 15-month results with a modification of this technique and sutures in 118 patients have confirmed its validity.

This percutaneous malar fat pad face-lift allows for reliable elevation of the midface with a relatively simple technique that can be performed by most skilled surgeons after they take part in an observational session, during which the critical parts of the procedure are elucidated. Surgical morbidity is minor. The procedure can be reversed, augmented, or modified in the postoperative period quite easily, in the event that changes are mandated or desired by the patient. It does not "change" a patient's appearance in the manner of a midfacial implant. It is also more reliable than autologous fat replacement and does not require multiple sessions to achieve a result.

The procedure is indicated in patients whose concerns of aging are confined primarily to the midface. Such
patients are often younger, and are not ready for a face-lift. Males and older patients without excessive skin laxity (previous face-lifts, ethnic with elastic skin, etc) are also excellent candidates.

RESULTS

At 3 months after surgery, all patients had significant elevations of their malar fat pads, with the exception of 2
Figure 5. A, Preoperative photograph of 42-year-old patient with mild malar ptosis. B, Postoperative photograph taken 1 year after closed technique.

Figure 6. A, Preoperative photograph of 50-year-old patient with more-pronounced malar ptosis. B, Postoperative photograph taken 1 year after closed technique.
early patients, who underwent revision surgery, with satisfactory results. The elevation was of an extremely natural appearance. Excellent volume replacement of the cheek region was obtained. Results, in the senior author’s opinion, were improved over those seen in deep-plane facelifting with malar fat pad fixation. The average malar pad

Figure 7. A, Preoperative photograph of 49-year-old patient before surgery of the midface, jowls, and neck. B, Postoperative photograph taken after open technique (face-lift) and tip rhinoplasty. C, Preoperative oblique view. D, Postoperative oblique view.
elevation before creation of the temporal pocket was 2 to 3 mm. After the surgical procedure incorporated the creation of the temporal pocket, 4 to 5 mm of elevation was uniformly achieved.

Temporary asymmetries were seen in 8 patients, but resolved within the 3-month period. Temporary unilateral pain complaints were expressed by 3 patients, but also resolved within the 3-month period. Two patients, as mentioned above, underwent revision surgery to remove the palpable temple polytef bolster used in the early subcutaneous fixation technique.

All patients at 1 year after surgery (excluding the exceptions mentioned above) have maintained their malar elevation. These results are in contrast to those seen with deep plane face-lifting, after which the senior author has seen a regression of malar fat pad elevation in some of his (and other surgeons’) patients. In fact, the technique provides an easy, minimally invasive “tune-up” in the malar area for rejuvenation of patients with previous face-lifts (Figures 5, 6, and 7).

No facial nerve problems, no excessive pulling, and no muscle fixation problems were noticed. There were spots of bruising in many patients, but they could generally be covered with makeup after about 72 hours. Four patients had prolonged infraorbital edema that required 2 weeks to resolve.

**COMMENT**

A simplified method of malar fat pad elevation is described. This method allows for elevation of the malar fat pad without extensive dissection. Complications were minor with this procedure when compared with endoscopic midface-lifting and complex deep-plane face-lifting procedures.

The procedure may be performed in conjunction with a face-lift (open technique), allowing for a more conservative face-lift technique than is customarily used to elevate the malar pad. It may also be performed without a face-lift to allow minimally invasive rejuvenation of the midface in the younger patient, in the older patient who has previously had a face-lift, or in the older patient whose aging is confined to the middle third of the face.

Accepted for publication November 7, 2001.

This study was presented at the American Academy of Facial Plastic and Reconstructive Surgery Spring Meeting, Palm Desert, Calif, May 13, 2001.

Corresponding author and reprints: Gregory S. Keller, MD, 222 W Pueblo St, Santa Barbara, CA 93105 (e-mail: faclf@aol.com).

**REFERENCES**