The Anterior Vertical SMAS Lift

With minimal skin and SMAS undermining, as well as a rotation point that is closest to the nasolabial folds and jowls, the “anterior vertical SMAS lift” reduces the risk of hematoma while optimizing direct pull on those surface features that require improvement. The vertical rotation enhances the malar region and decreases preauricular skin excision. Further, the author has found this technique very effective in treating nasolabial folds in the aging face. (Aesthetic Surg J 2003;23:486-494.)

In the course of 30 years of aesthetic surgery practice, I have gradually evolved a facial rhytidectomy technique that in my hands produces consistent results while minimizing complications. During my training, wide skin undermining and preauricular skin incisions were routine. Little consideration was given to hairline disturbance, and in many patients the aesthetic improvement was unpredictable and inconsistent. In 1972, Bruce Connell visited the Manhattan Eye, Ear and Throat Hospital and, using one of my clinic face lift patients, demonstrated a submental approach to treating the medial platysma cords. The next year, Sam Hamra borrowed one of my clinic patients to demonstrate the SMAS technique he learned while in practice with Mark Lemmon. To the best of my knowledge, these demonstrations represented the first time either of those techniques was performed in New York City. From these early observations, I learned it is always necessary to be analytical and that aesthetic surgery technique is continually evolving.

In my practice, I continued to evolve a rhytidectomy technique based on my experiences and ongoing education. No single technique best suits all patients, and ancillary procedures are frequently needed to optimize results.

In the past 8 years I have performed hundreds of facial rhytidectomies using a particular technique, the “anterior vertical SMAS lift,” or variations of it, to provide patients with predictable and pleasing aesthetic results. My diagnostic process involves identifying the key facial elements that must be addressed and customizing the surgical plan to achieve maximal improvement. Although I incorporate elements from the work of Sam Hamra,¹ and Dan Baker,² I offer significant differences that provide excellent results while minimizing the possibility of complications. I do not recommend this technique for the novice surgeon; execution requires comfort with sub-SMAS dissection and an excellent knowledge of surgical facial anatomy.

Analysis of Key Facial Elements

I begin analyzing key facial areas in each patient to determine how best to achieve aesthetically pleasing results (Figure 1). A preauricular incision is less troublesome and time consuming than a peritragal or retrotragal incision, and in about one-third of rhytidectomies, I am able to use this approach. A mature man or woman generally has a well-defined crease in which the incision can be discreetly placed. However, in younger patients, or if the patient frequently wears her hair back or in a short style that exposes the preauricular area, a peritragal approach is preferable, just as it is when no well defined preauricular crease exists.

The relationship of sideburn to ear position must also be considered. I draw a line from the lowest portion of the sideburn across the ear at this same level; with vertical repositioning of the facial skin, the hairline should not be elevated more than 1.5 cm above this line. To prevent too much elevation, I plan for an additional transverse incision at the lower sideburn and then excise the dog-ear at this level. I have never found it necessary to continue the pretrichial incision superiorly along the anterior hairline.

I frequently perform submental suction lipectomy but rarely use a submental incision to address the cords, preferring a posterior approach to the platysma muscle. However, if there is a visible “arch” when the patient is
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viewed frontally, I believe this requires a submental incision and suturing of the medial platysmal cords. When considering the relationship between chin, nose, and jawline, I do not hesitate to recommend a chin implant if I feel it will enhance the aesthetic result.

The sternomandibular trough is an important aesthetic unit delineated by the anterior sternomastoid muscle, the jawline, and a horizontal line from the angle of the jaw intersecting the sternomastoid muscle. It is described as a trough rather than a triangle to emphasize its depth or dimensionality. A deep, well-defined trough enhances the appearance of a well-defined jawline, as long as it is consistent with other facial features.

I have found the anterior vertical SMAS lift to be most effective in dealing with nasolabial folds in patients undergoing facial rejuvenation surgery. I frequently perform fat injections along the nasolabial fold, at the time the rhytidectomy is performed, to further enhance results. However, I do not find biologic fillers effective for treating the nasolabial line without a simultaneous face lift. To analyze this area, I examine the region between the malar prominence and the mound of tissue just cephalad to the nasolabial crease. I do not resect a prominent submandibular gland; I personally believe that the possibility of nerve injury is too great. I point it out to the patient preoperatively and explain that it will be present after the procedure. The sternomandibular trough requires careful analysis. While a blunted trough is consistent with a round or heavy face, a deeper trough will enhance an angular or thin face.

**Figure 1.** To optimize the aesthetic outcome of a face lift, first consider key elements of the face and neck. Hairline height is marked against a fixed point (the ear) and should never be raised more than 1.5 cm above this point. If there is no preauricular crease, use a retrotragal incision. If the malar region is flat, and there is a triangular “hollow” just inferior and lateral, as well as a “bunching up” of subcutaneous tissue cephalad to the nasolabial crease, an anterior vertical SMAS lift is indicated. Consider fat injections or the use of alternate biologic fillers if the nasolabial crease is particularly deep. The jowls will substantially improve with the lift but may also benefit from lipectomy for further contouring. Correction of microgenia dramatically improves the profile and improves definition of the submental area. I usually suction the submental region. If there is an archlike appearance to the medial cords (ie, their vertical expanse is separated but the cords meet in the submental region), I will open this area and suture the medial cords. Posterior and superior rotation of the lower SMAS will change the jawline. Open suctioning along this plane may also be necessary. I do not resect a prominent submandibular gland; I personally believe that the possibility of nerve injury is too great. I point it out to the patient preoperatively and explain that it will be present after the procedure. The sternomandibular trough requires careful analysis. While a blunted trough is consistent with a round or heavy face, a deeper trough will enhance an angular or thin face.
the mound improves the malar region and minimizes the fold. The anterior vertical SMAS lift specifically addresses these problems. Additionally, improvement of the marionette lines, if present, and contouring of the jowls and jawline are achieved.

I recently conducted an informal survey regarding the submandibular gland. I sent a brief questionnaire to 11 plastic surgeons across the United States who I believe perform the largest volume of face lifts yearly. One of the questions I asked was how they treat the submandibular gland. Interestingly, not one of them resects the gland. This is consistent with my own experience; I personally believe that the possibility of nerve injury is too great. I make certain the patient understands that the fullness under the jawline may not be substantially improved.

The jawline between the chin and sternomandibular trough is usually improved with the technique described. Some suctioning with a flat blunt cannula under direct vision may also be helpful in defining this area.

**Surgical Technique**

Mark the anatomic landmarks with the patient sitting; include the malar prominence, angle of the jaw, the jowls, the medial platysmal cords, and the extent of submental fat. Administer appropriate anesthesia, then mark preauricular or peritragal incisions. Mark the inferior transverse extent of the sideburn in red and carry this mark onto the ear so that a fixed reference point is visible.

Infiltrate the entire surgical site with epinephrine containing local anesthetic, and prepare and drape the patient. Begin with a punctate incision in the submental crease. Here, insert a blunt 3-mm Mercedes-type cannula.

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**Figure 2.** Skin dissection is limited to providing exposure for face and neck SMAS dissection. Using the anterior vertical SMAS technique, you can remove a relatively large amount of skin with little undermining. One cautionary note: Little or no preexcision should be carried out in the preauricular area if a vertical lift is planned. With a vertical lift, less skin excision is necessary.
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and carefully contour this area using suction. If I am dissatisfied with the result, I extend the incision for further defatting under direct vision.

On the first (infiltrated) side of the face, use a #15 blade to incise along the marked areas. If you marked a retrotragal incision, carefully dissect the skin from the underlying cartilage with nasal tip scissors. Dissection anteriorly and inferiorly superficial to the SMAS is accomplished in a few minutes with Mayo scissors and finger dissection. In the face, the dissection is carried only just beyond the line drawn between the malar eminence and the angle of the jaw (Figures 2 and 3).

Use a #15 blade to make the retroauricular incision; use a #10 blade and Mayo scissors to accomplish inferior and anterior neck dissection with the scissors turned curve down for ease of dissection. Dissect to the extent necessary depending on the amount of excess neck skin.

With an assistant retracting the facial skin flap, draw a line from the malar eminence to the angle of the jaw with marking ink, then extend this line posteriorly to the anterior border of the sternomastoid muscle, then inferiorly, well down into the neck (Figure 4).

Begin the sub-SMAS dissection at the midpoint of the line drawn from the malar prominence to the angle of the jaw. Using fine-toothed forceps, gently lift the SMAS vertically from the underlying tissues and insert the tip of a blunt Stevens scissors to divide the SMAS. The plane is very evident, and the SMAS is readily identified above the scissors; the deeper structures remain below. Repeat the procedure carefully along the entire marked line. Now, once again elevate the anterior incised edge of the SMAS. Introduce the same scissors, but turn them vertically and spread them to separate the SMAS from the deeper structures. Insert the scissors only about half a centimeter at a time, and never close them while they are beneath the SMAS. The motion that easily protects the nerves is scis-

Figure 3. After SMAS rotation there is little “dead space” in the undermined face and neck, and the possibility of significant hematoma is thus greatly reduced.
Figure 4. Note that the SMAS is outlined from the malar prominence to the angle of the jaw, then posteriorly to the anterior border of the sternomastoid, and then inferiorly along its anterior border. Access the SMAS in the face (anterior to the parotid) by gently grasping the SMAS and lifting it perpendicular to the facial plane. Insert small scissors parallel to the SMAS at this point of tension. The proper plane is readily apparent. Repeat this process along the marked lines. Be very careful when you encounter the superior aspect of the proposed dissection. Here the SMAS thins and tears easily. Exercise caution to avoid slipping beneath the zygomaticus major, where nerve injury may occur. Perform anterior dissection by turning the scissors perpendicular to the SMAS plane and spreading. Withdraw the scissors without closing them to avoid transecting nerves. Carry out dissection for 2.5 to 3 cm anteriorly. The entire flap can easily be rotated in any direction to optimize results, after which you can suture it as described.

Figure 5. The SMAS is undermined and elevated. The fine branches of the facial nerve exit from the anterior parotid. Careful anterior dissection with a vertical spreading motion avoids injury.
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Figure 6. The SMAS has been incised, undermined, rotated, and sutured with 4 to 6 sutures. Sometimes, if the tissues overlying the SMAS are excessively thick, this may add too much fullness to the face. Cautious excision of some of the overlapping tissues, as well as open suctioning, will help correct this problem.

sor insertion, opening of the scissor blades, and withdrawal of the scissors with the blades still spread. It is unusual to encounter bleeding, but it is easily controlled with jeweler’s forceps and electrocautery on a low setting. Carry dissection anteriorly for about 2.5 to 3 cm. Mobilize the flap only sufficiently to elevate and rotate the tissues without buckling the underlying structures (Figure 5).

Be careful to avoid dissecting beneath the zygomaticus major muscle along the most superior aspect of the SMAS. Nerve injury is possible here, and, in any event, the SMAS is very thin in this area. It is the thicker SMAS just inferior to this that is important to the procedure.

With minimal skin undermining and SMAS undermining, plus a rotation point that is closest to the nasolabial folds and jowls, there is reduced risk of hematoma, and optimal direct pull on those surface features that require improvement.

The neck portion of the SMAS/platysma can be divided, back-cut, or rotated as a unit, depending on the surgeon’s goal. Once this structure has been rotated posteriorly and sutured in place, it is important to assess the effect on the sternomandibular trough. Invariably it is necessary to aggressively defat this region to achieve or maintain jawline continuity. This may be accomplished with an open suction technique or scissor excision.

Before surgery, I assess the general direction in which I plan to direct the flap(s). Frequently I modify this plan once the dissection is completed. I prefer a 3-0 PDS (Ethicon Inc., Somerville, NJ) to suture the flaps. The first suture rotates and redirects the SMAS in a very vertical direction and is sutured to the zygomatic periosteum or,
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at least, into the soft tissues just at the level of the zygoma. There should be a visible bulge along the malar region created by the dog-ear at this rotation point. I generally place a suture from the anterior incised SMAS at the level of the jawline (just cephalad to the portion of the SMAS that will be rotated posteriorly in the neck) and affix it at earlobe level. The anterior SMAS will be rotated in a very vertical direction (Figure 6).

As a result of this more vertical rotation I have observed the following: (1) the malar region is enhanced, (2) there will be less preauricular skin to excise, (3) the anterior hairline may be excessively elevated unless a triangle of skin is transversely excised at the lower aspect of the sideburn, and (4) it may be possible to use a “short” retroauricular skin incision.

I will further contour the jawline with a blunt flat suc-

Figure 7. A, Preoperative view of a 56-year-old woman with a flattened malar region and poorly defined jawline. B, Postoperative view 8 months after an anterior vertical SMAS lift demonstrates improvement in her jowls, jawline, and malar areas.

Figure 8. A, Preoperative view of a 56-year-old woman with a flat malar area, deepened nasolabial folds, and early jowling. B, Postoperative view 1 year after an anterior vertical SMAS lift and laser treatment of her lower lids. Note the well-formed malar area and improved nasolabial folds and jowls.
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Figure 9. A, C, Preoperative views of a 54-year-old woman demonstrate a flattened malar region, jowls, and early neck cords. B, D, Postoperative views 10 months after an anterior vertical SMAS lift. Note the definition of the sternomandibular trough, improvement of the jowls, and restoration of the jawline.

Figure 10. A, Preoperative view of a 69-year-old woman with flat malar region, deep nasolabial folds and marionette lines, jowls, and neck wrinkles. B, Postoperative views 6 months after surgery. An anterior vertical SMAS lift restored a more youthful appearance by minimizing the nasolabial and marionette lines, improving the jowls and neck, and providing a fuller malar region.
tion cannula, under direct vision, as the situation dictates. Sometimes I suction or suture-suspend the jowls to further contour this area, although, with the vertical lift, this is usually unnecessary.

Before closing, I assess the skin at the juncture of the SMAS and anterior skin dissection. Frequently, further minimal undermining is necessary to prevent skin dimpling as a result of tension. Then I redrape the skin and excise what is redundant. I routinely use tissue glue at closure, except in the submental area. If this has been opened, I prefer to drain this area.

After completing the face lift, I do not hesitate to fill any residual deepened nasolabial folds with fat or an alternate biologic filler. My dressing consists of cotton-soaked mineral oil and 2 elasticized bands. These are removed the next day.

**Conclusion**

I have used this technique in hundreds of patients over a period of 8 years. Results are demonstrated in Figures 7 through 10. There have been no nerve injuries or hematomas requiring evacuation in the operating room. The results appear to persist as well, and for as long, as with other techniques requiring more extensive undermining. Average operating time is between 2 and 2.5 hours. I recommend this method to aesthetic surgeons who have experience performing face lifts and a sound knowledge of facial surgical anatomy.

**References**


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