# Ten Tips for a Reliable and Predictable Deep Plane Facial Rhytidectomy

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## Introduction

Facial rhytidectomy surgery is a reconstructive/cosmetic procedure to restore anatomic changes to the lower third of the aging face and neck. It is a surgery of planes. Understanding safe dissection planes allows the surgeon to maximize his or her results in a reliable fashion (Larrabee 1993; Baker and Conley 1979). Facial rhytidectomy may also be considered a surgery of opportunity and compromise in which soft tissue dissection and redraping take advantage of the facial blood supply while predictable and desirable wound healing provide the rejuvenated appearance. Mastery of facial anatomy and the relationships of the superficial and deep facial layers, muscles, nerves, and vasculature is of paramount importance in performing rhytidectomy surgery safely, effectively, and with confidence (Alsarraf and Johnson 2000; Baylis et al. 2000). We have noted ten areas in which attention to detail offers a predictable and reliable rhytidectomy procedure and avoids some of the stigmata of rhytidectomy surgery (Franco 1985).

## Tip 1. Marking (Fig. 176.1)

Marking the skin under slight anterior traction decreases the risk of medial incision migration. The markings should be optimally camouflaged in the hairlines to avoid visible incisions. Placing a back-cut at the inferior border of the temporal hair tuft minimizes the risk of posterior temporal hair migration. Further inferiorly, the incisions may be placed posttragal in women and pretragal (to avoid mobilizing hair-bearing skin on the tragus) in men (though we find both incisions heal well). Additionally, the retroauricular incision is placed onto the conchal bowl to avoid postoperative migration onto visible retroauricular area. The marking is carried into the

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**Fig. 176.1** Marking the rhytidectomy patient. In addition to the incisional markings, labeling the inferior border of the zygomatic arch, the angle and inferior border of the mandible is useful to maintain situational awareness during skin flap creation

hair-bearing scalp at an angle bisecting the posterior hairline and its tangent. We also gently score the markings with an 18-gauge needle tip to avoid erasure or distortion of the markings during infiltrative anesthesia or skin cleansing. The inferior lobule and the posterior hairline, which are useful landmarks for skin flap redraping later in the surgery, are also scored.

## Tip 2. Skin Flap Dissection (Fig. 176.2)

Tumescent anesthesia allows inflation of the subcutaneous layer and allows safer flap dissection. This also permits performance of rhytidectomy surgery under local anesthesia. Creation of the skin flap using a gentle spreading motion (gentle pushing of hand-locked scissors) with sparing cutting motion allows a safer dissection plane. We also utilize the mechanical advantage offered by the skin flap by keeping the skin on the conchal cartilage and mastoid attached until the posterior auricular dissection is complete. This acts as a second pair of hands holding gentle tension on the flap. The same may be done anteriorly with the preauricular skin. With an assistant applying gentle anterior/inferior traction on the facial soft tissue, the dissection is continued inferiorly over difficult dissection areas, including the mastoid and sternocleidomastoid muscle. Transillumination through the skin flap allows precise determination of flap thickness, keeping a cobblestone pattern of fat on its undersurface. Anteriorly, the dissection proceeds to the zygomatic osteocutaneous ligament (McGregor's patch) and mandibular osteocutaneous ligament.

**Fig. 176.2** Countertraction and tumescence facilitate creation of the skin flap

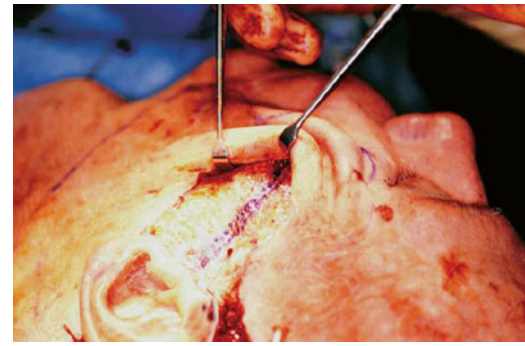

**Fig. 176.3** Marking the inferior border of the zygoma is critical for maintaining operative situational awareness and prevents inadvertent injury to the temporal branch of the facial nerve

## Tip 3. Marking the Zygomatic Arch (Fig. 176.3)

To avoid injury to the temporal branch of the facial nerve, the inferior border of the zygomatic arch is indicated with a marking pen. This allows situational awareness throughout the surgery. The inferior border may easily be palpable at the

**Fig. 176.4** Excising a J-shaped piece of SMAS at the anterior border of the parotid allows safe entry into the deep plane while leaving a tuft of SMAS adjacent to the tragus to fixate the SMAS flap

level of the superior aspect of the external auditory canal. Medially the notch in the body of the zygoma is also marked, indicating the origin of the zygomaticus major muscle. This will be useful to identify the origin and remain superficial to this muscle as the superficial musculoaponeurotic (SMAS) flap dissection proceeds medially.

## Tip 4. SMAS Flap Creation (Fig. 176.4)

We mark a "J-shaped" 1-cm strip of SMAS from the angle of the mandible to the inferior border of the zygomatic arch at the anterior portion of the parotid to start our dissection. This allows a relatively safe position to start the SMAS flap and allows a fixed cuff of SMAS anterior to the tragal cartilage for suturing the mobilized SMAS flap. While excising the strip of SMAS, the surgeon stays superficial to the parotid capsule.

## Tip 5. Creating the SMAS Flap (Figs. 176.5 and 176.6)

Care must be taken in dissecting the SMAS flap to avoid creating a tenuous or button-holed flap. The flap is developed using scissors in a horizontal spreading motion with judicious cutting. A No. 10 blade may be used in a push down technique to further develop the flap. A peanut may

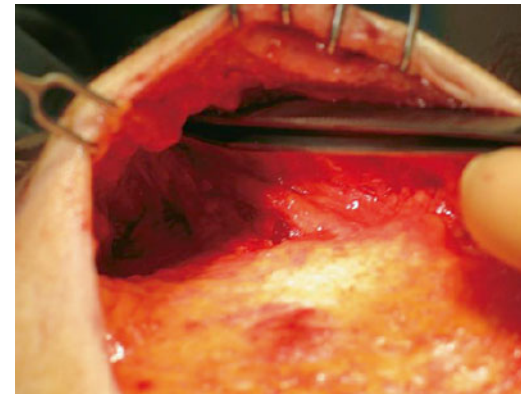

**Fig. 176.5** The SMAS flap is developed superiorly over the body of the zygoma to expose the zygomaticus major muscle. SMAS flap dissection should avoid dissecting beneath the zygomaticus to avoid trauma to the zygomatic and buccal branches of the facial nerve. Once dissected, the SMAS flap is connected to the inferior flap and continued medially to the nasolabial and melolabial folds

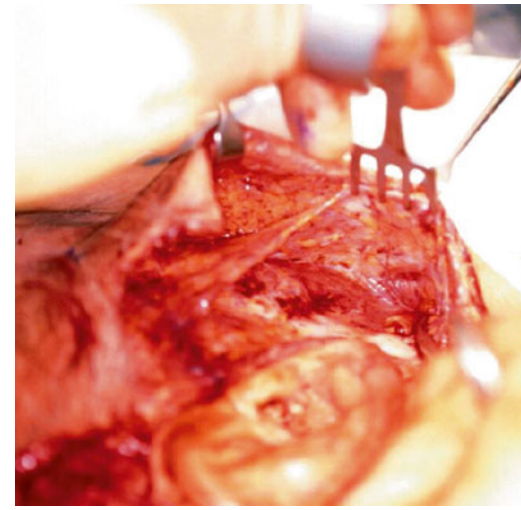

**Fig. 176.6** After dissection of the deep plane, the SMAS flap is easily mobilized for redraping and fixation

also be used for more blunt dissection more medially. Using countertraction and a headlight, the SMAS flap with platysmal fibers above is developed, with the masseteric fascia below. Branches of the facial nerve are easily seen on the surface of the masseter muscle covered by loose areolar masseteric fascia. The dissection is

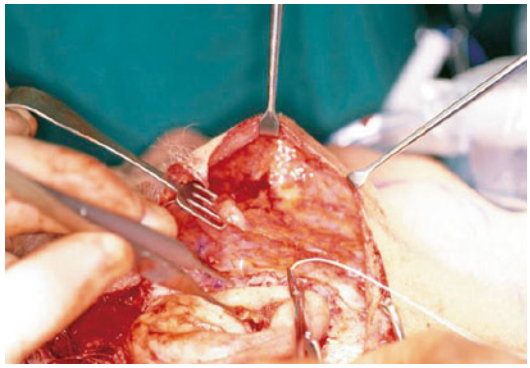

**Fig. 176.7** The correct vector for SMAS repositioning is vertical as the retractor is demonstrating. Fixing the SMAS flap from the angle of the mandible to the fascia at the inferior tragal border and from the angle of the mouth to the superior tragal border offers the desired vertical soft tissue redraping

**Fig. 176.8** After SMAS fixation, a significant amount of excess skin is available for trimming. The previously scored inferior lobule and posterior hairline offer landmarks for proper skin redraping

continued near, but not crossing the inferior border of the mandible to the mandibular osteocutaneous ligament to avoid trauma to the marginal mandibular branch of the facial nerve. Superiorly, the previously marked notch on the body of the zygoma allows a dissection point to find the superficial surface of the zygomaticus major. Care is taken to avoid aggressive dissection under the zygomaticus major muscle to avoid trauma to the zygomatic and buccal branches of the facial nerve. Once the superficial surface of the zygomaticus major muscle is identified, the dissection plane is connected to the inferior sub-SMAS dissection. The flap is then dissected medially to the nasolabial fold, the cheek fat pad, and modiolus. It is critical to maintain a well-developed SMAS flap to mobilize the lower face soft tissues.

## Tip 6. SMAS Flap Fixation (Fig. 176.7)

The optimal vector of pull for the SMAS flap is vertical. This optimizes the rejuvenative appearance without creating the "windblown" face-lift look of lateral mobilization. The SMAS flap at the angle of the mandible is advanced superiorly to the tuft of SMAS adjacent to the inferior tragus. The SMAS flap at the angle of the mouth is advanced to the superior tragus. The inferior platysmal flap at the neck is advanced in a superolateral vector and fixed to the mastoid fascia. All sutures are placed with the knots buried in a "vest-over-pants" fashion. This vertical elevation creates a triangular overlap of SMAS above the zygomatic arch. This excess SMAS flap is excised and the remnant sutured to the SMAS attached to the inferior edge of the zygomatic arch. This elevates the malar fat pad.

## Tip 7. Skin Flap Fixation (Fig. 176.8)

After elevation of the SMAS flap, the excess skin drapes superiorly and laterally. The excess skin is trimmed and is attached at three key fixation points: the superior conchal cartilage and the posterior hairline (in the retroauricular area) and the temporal tuft anteriorly. The previously scored inferior lobular skin is advanced superoposteriorly and sutured to the superior most portion of the posterior conchal cartilage. The posterior hairline is reapproximated along the previously placed score and overlapped as needed. The skin along the hairline is back-cut to maintain the natural hairline and avoid a step-off. The anterior hairline is overlapped at the temporal back-cut, and excess overlap is excised. Undermining of the temporal tuft may be necessary to avoid dog-ear deformities in this area.

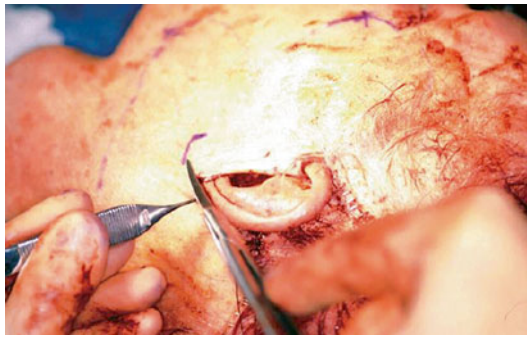

**Fig. 176.9** Marking the inferior lobule through the excess skin and cutting on the outer helical two-thirds the distance to the distal lobule mark allow slight bunching of the inferior lobule to prevent the pixy-ear deformity

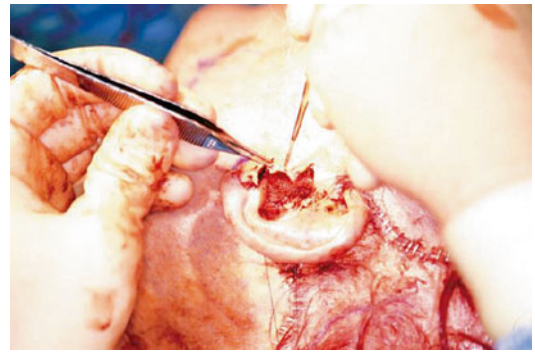

**Fig. 176.10** Conservative back-cutting excess skin on the tragus allows adequate skin removal without traction on the tragus

## Tip 8. Addressing the Earlobe (Fig. 176.9)

Once the key fixation points of the facial skin flap are fixed, excess skin covering the earlobe remains. The inferior lobule of the earlobe is marked through the skin covering it. The skin overlying the outer curve of the helix is cut approximately two-thirds the distance to the inferior lobular mark. The inferior lobule is pulled out over the skin and its position evaluated. The skin flap should be slightly "bunched" up against the inferior lobule (if excessive bunching is present, a few more millimeters may be cut and the inferior lobule reevaluated). This avoids inferior scar migration and the pixy-ear deformity. The inferior lobule and bunched skin are closed with a mattress suture.

## Tip 9. Skin Excision Tips (Fig. 176.10)

The retroauricular skin is evaluated for overlap, and excess skin is back-cut and excised with care taken to maintain the posterior hairline. We advocate minimal excision of posterior hair-bearing scalp. Maintaining the posterior hairline and elevation of the inferior lobular skin superoposteriorly to the superior conchal cartilage may lead to pleating of the retroauricular skin. This relative skin excess often smoothes out in the early postoperative period but may be secondarily removed with an elliptical excision if it does not smooth out. The skin over the conchal cartilage is conservatively trimmed in the retroauricular area. The remaining skin overlying the pretragal portion of the ear is back-cut with care taken to follow the curvature of the cartilage. Conservative undermining of some subcutaneous fat may be indicated to avoid a too thick pretragal flap. Hair-bearing incisions are closed with 35R staples, and the skin is closed with a running 5-0 suture. Prior to wound closure, the contralateral side is trimmed. This allows a "second look" at both sides prior to closure to cauterize any small bleeders and place drains to avoid postoperative hematoma formation.

## Tip 10. Addressing the Neck (Fig. 176.11)

We frequently perform neck liposuction at the end of the surgical procedure, as early aggressive liposuction may result in unexpected skeletonization of the inferior border of the mandible after aggressive vertical SMAS repositioning. After neck tumescence, a 1-cm submental incision allows insertion of 3- and 4-mm single port cannulas. The cannulas connect the neck dissection to the facial flaps. As needed, midline platysmal plication is accomplished after liposuction. Alternatively, direct subcutaneous fat dissection from the platysma may be accomplished from the temporal facial flap and the submental incision

**Fig. 176.11** Neck liposuction performed at the end of rhytidectomy surgery allows tailoring the amount of fat removed to avoid skeletonizing the inferior border of the mandible

prior to closure. Postsurgical dressing is accomplished using multiple layers of gentle compression. An ABD dressing works well and may be removed in 24 h.

As our individual techniques in rhytidectomy surgery have evolved, we have found that respecting these fundamental tenants has allowed reliable and predictable results in our patient population (Figs. 176.12 and 176.13). Certainly there are multiple other steps critical in the rhytidectomy procedure, and each surgeon needs to become aware of his or her own technique to provide predictable, optimal results for their patients.

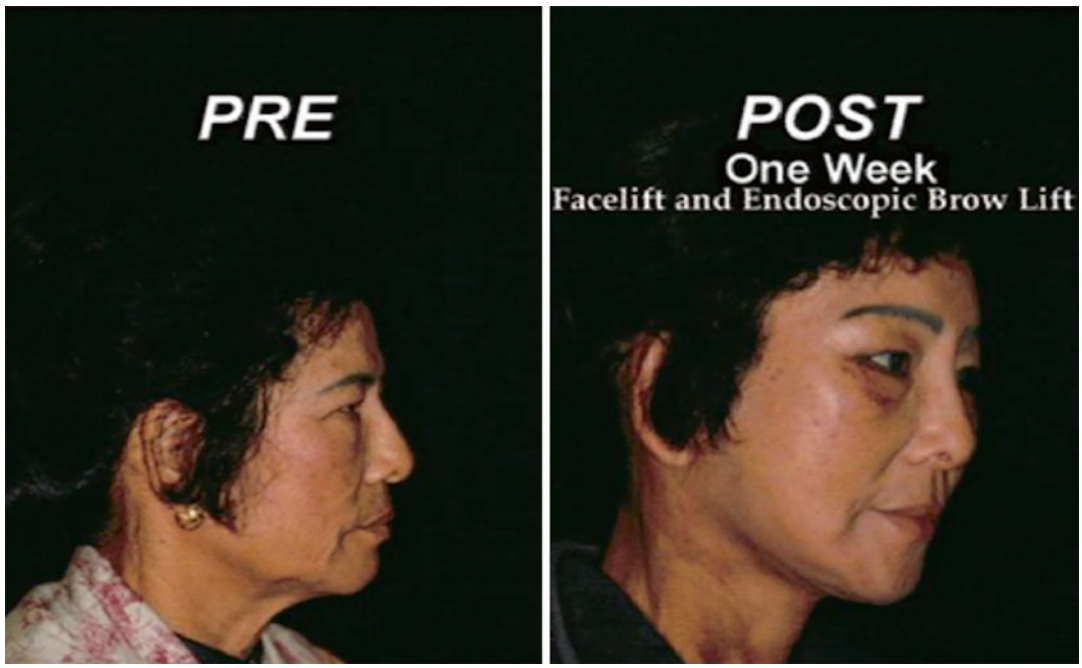


**Fig. 176.12** With a shorter skin flap, the deep plane lift may have less bruising than longer skin flaps


**Fig. 176.13** Pre- and 1-year postoperative lateral views after rhytidectomy and endoscopic brow lift

## References

Alsarraf R, Johnson C. The facelift: technical considerations. Facial Plast Surg. 2000;16:231–8.

Baker DC, Conley J. Avoiding facial nerve injuries in rhytidectomy. Plast Reconstr Surg. 1979;64:781–95.

Baylis HI, Goldberg RA, Shorr N. The deep plane facelift: a 20 year evolution of technique. Ophthalmology. 2000; 107:490–5.

Franco T. Face-lift stigmatas. Ann Plast Surg. 1985;15: 379–85.

Larrabee WF. Facelift anatomy. Facial Plast Surg Clin North Am. 1993;1:415–26.