

# A Short-Incision Deep Plane Face-lift Technique With a Composite Cheek Flap Performed With Tumescence Local Anesthesia by a Dermasurgeon

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I describe a technique for performing a deep plane face-lift with a short incision. Fifty patients underwent this surgery in my Medicare-certified outpatient surgicenter adjacent to my dermatology offices. The procedure was performed most often with mild sedation and tumescent local anesthesia. The results were excellent, with natural-looking rejuvenation of the neck and lower face, and patient satisfaction was high. Complications were few but did include 2 temporary palsies of the buccal branch of the facial nerve and superficial skin necrosis. No infections, hematomas, or hypertrophic scarring occurred.

**S**urgical elevation of the neck and cheek (rhytidectomy) is an evolving procedure. In recent years, there has been considerable debate regarding incision location and length and a move among many dermasurgeons to use shorter, primarily preauricular incisions and fewer postauricular incisions in face-lifting.<sup>1</sup> Although sometimes unavoidable, postauricular incisions result in more scarring (sometimes visible when patients wear their hair up) and a greater chance of posterior hairline disruption.<sup>2</sup>

There is general agreement that the superficial musculoaponeurotic system (SMAS), the fascial tissues beneath the skin, need to be elevated to achieve a long-lasting, natural effect. A method described by Skoog<sup>3</sup> in 1974 lifts this fascia as a unit with the overlying skin and subcutaneous tissues instead of elevating the skin and fascia as separate units. Later, Hamra<sup>4,5</sup> included the malar fat pad in the dissection and referred to this type of rhytidectomy

as *deep plane* or *composite*. However, there is considerable disagreement on whether a deep plane approach offers any advantages because it carries a greater risk of damage to the facial nerve branches. In fact, many dermasurgeons do face-lifts today without entering the deep plane.

I describe a face-lift technique that I have been performing for 3 years that uses a preauricular and short incision (short scar) and that incorporates the SMAS into the cheek flap. The procedure has been performed most often with tumescent local anesthesia.

## MATERIALS AND METHODS

I have performed more than 50 short-incision face-lifts in my Medicare-certified outpatient surgicenter. Most of the patients were women (only 5 were men); their ages ranged from 42 to 84 years. Some also underwent blepharoplasty during the same surgical session. Most of these procedures were performed with mild sedation, including intramuscular meperidine hydrochloride, intramuscular promethazine hydrochloride, and oral lorazepam. Ten patients received intravenous sedation administered by a nurse anesthesiologist. Incision sites were premarked, and tumescent lidocaine 0.3% solution

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was infiltrated into the cheeks, neck, and temporal scalp with a 22-gauge needle. The incision sites were infiltrated with lidocaine hydrochloride 1% with epinephrine.

### TECHNIQUES

Most patients underwent neck liposuction through a tiny submental incision at the beginning of the procedure. A temporal scalp, cheek, and neck flap was created through incisions made with a number 15 blade. The preauricular incision was extended superiorly into the temporal scalp and ended inferiorly at the back of the soft lobule of the ear (Figure 1). A superficial temporal scalp flap was first created using face-lift scissors with vertical spreading. This portion of the flap was anterior to the temporal fascia and was extended medially and inferiorly. The cheek flap was a superficial skin and subcutaneous flap for the first 2 cm medially and was then extended inferiorly to the neck. The entire flap was extended medially to within 3 cm of the mid line. Whereas the scalp and neck portions of the flap were superficial and included skin and subcutaneous tissues only, the SMAS was incorporated into the mid portion of the cheek flap (making this a thick flap) (Figure 2). When the cheek flap reached the lateral canthus, it became a skin and subcutaneous flap and was extended medially to near the nasal labial fold (making this portion a thin flap).

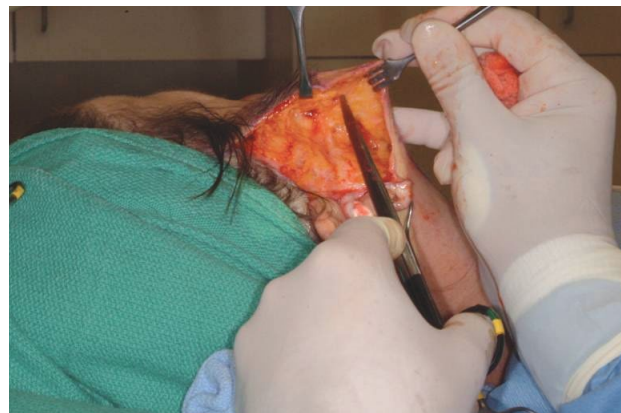
Care was taken throughout the creation of the flap to coagulate any blood vessels using bipolar coagulation. Several 4-0 nylon or 3-0 polydioxanone plication sutures were used to elevate the SMAS deep to the neck and mandibular portions of the flap with a vertical vector. If the platysma needed more tightening, the lateral edge would be undermined and attached with a lateral vector to the periosteum of the mastoid process. Two 3-0 polypropylene suspension sutures were used to elevate the cheek flap, also primarily in a vertical direction. These sutures were attached to the superficial temporal scalp fascia, accessed through the scalp incision.

Excess skin was excised along the superior (scalp) edge of the flap (Figure 3). This was closed with interrupted 3-0 nylon sutures, creating a primarily vertical vector of closure. Drains were placed under the flap. Very little skin was removed from the portion of the flap that was preauricular, and this incision was then closed with 5-0 nylon or polypropylene sutures. There was no tension along this suture line, avoiding any significant horizontal vector and decreasing the risk of scar spread and hypertrophic scarring. In fact, there was no need for absorbable sutures.

A pressure dressing was placed around the cheek and scalp and removed at 24 hours; the drains were removed at the same time. All sutures were removed at 6 or 7 days. Figures 4 and 5 show patients before and after the procedure.



**Figure 1.** Incision sites from the temporal scalp to the soft lobule.



**Figure 2.** Composite cheek flap with the superficial musculoaponeurotic system attached.



**Figure 3.** Cheek flap after temporal scalp excision, showing the superficial musculoaponeurotic suspension sutures.

### RESULTS

Patient satisfaction was very high with this procedure; they complained of little pain postoperatively. Cheek numbness occurred in all patients and resolved within 4 months. No infections, hematomas, or hypertrophic scarring occurred. Two injuries occurred to the buccal branch of the facial nerve; these resolved spontaneously within 4 months. One patient experienced superficial skin necrosis of the cheek flap and did have some scarring of the cheek as a result. With the exception of these

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A

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B

**Figure 4.** A 51-year-old female before (A) and 1 year after (B) short-incision deep plane face-lift technique.

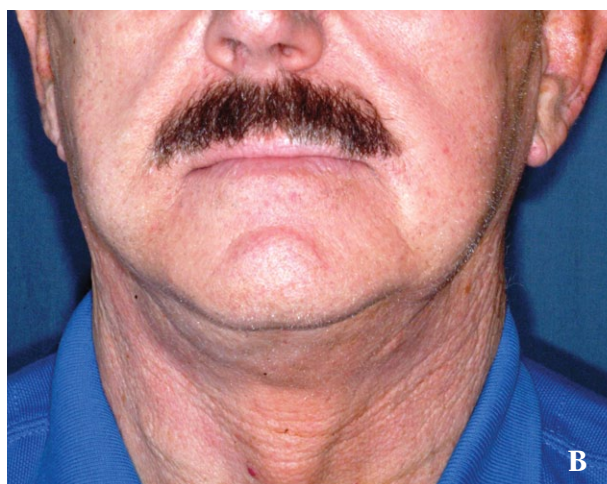
incidents, all patients were able to resume normal activity in 2 weeks.

### COMMENT

Face-lifts were initially performed in Europe and the United States in the early 20th century. In 1907, Miller<sup>6</sup> was the first to publish articles on surgical efforts to eliminate wrinkles. Hollander,<sup>7</sup> a German surgeon, is usually credited with the concept of surgical face-lifting. He apparently performed the first face-lift in 1901 but did not publish the results of his procedure until 1932. By 1919, incision sites had evolved to the point at which they were similar to modern incision sites (extending from the temporal scalp, then preauricularly to the back of the soft lobule). In 1950, Mayer and Swanker<sup>8</sup> emphasized the need for extensive undermining during face-lifting to achieve long-lasting (5 years) results. Skoog<sup>3</sup> revolutionized surgical face-lifting by advocating

the undermining of the buccal fascia to the nasolabial fold and advancing it posteriorly. In 1976, Mitz and Peyronie<sup>9</sup> identified Skoog's buccal fascia as a single tissue layer that was continuous with the temporoparietal fascia superiorly and the platysma inferiorly. This fascia was shown to be attached to the skin through fibers and was superficial to the parotid fascia and medially invested the intrinsic facial musculature.

Although most face-lift surgeons agree that there must be some suspension of the SMAS to achieve long-lasting rejuvenation of the lower face and neck, there is no agreement on how best to do this. A recently published textbook on aesthetic surgery contains 5 chapters detailing face-lifting techniques, each written by a different surgeon and each handling the SMAS issue differently.<sup>10</sup> Some surgeons advocate short (preauricular and scalp) incisions; others advocate longer incisions, extending the incisions to create a postauricular flap. The



**Figure 5.** A 64-year-old male before (A) and 10 months after (B) short-incision deep plane face-lift technique.



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**Figure 6.** The portions of the cheek flap created during a deep plane face-lift. The grey area indicates portions of the flap that are skin and subcutaneous only. The red area indicates a composite flap.

minimal-access cranial suspension short-scar lift dissects the subcutaneous tissues from the underlying SMAS via a short incision, creating a skin and subcutaneous flap and then threading permanent sutures in a purse-string manner through the SMAS and suspending this to the deep temporal fascia. There is no SMAS undermining.<sup>10</sup> Dr. Dan Baker of the Manhattan Eye, Ear & Throat Hospital, New York, performs a lateral SMASectomy via a short incision and separates the cheek flap from the SMAS. There is very little deep undermining, and the gap from the SMAS excision is simply sutured together.<sup>10</sup> Dr. Timothy Martin of St. Francis Memorial Hospital in San Francisco, Calif, describes what he calls the *SMAS-platysma lift*, in which a skin-only flap is created, followed by a separate SMAS-platysma flap that is undermined in the deep plane and then elevated in a direction different from that of the skin flap (ie, there are 2 different vectors of pull).<sup>10</sup>

Although many surgeons hold strong opinions regarding the optimal technical approach to face-lifting, the myriad rhytidectomy approaches in the medical literature today attest to the continuing controversies on incision length and position and whether to enter the deep plane. The face-lift described in this article combines some of the features of other described face-lifts but does enter this deep plane. It is primarily a short-incision lift, although in 1 patient with a very lax lateral neck, the incision was extended. In the cheek, the skin and subcutaneous

tissues are elevated, not in separate layers but as an integrated unit with the SMAS, and the SMAS is undermined in the traditional deep plane. In this sense, it could be called a *composite flap*. The vector of tissue elevation is primarily vertical with a small lateral component. This flap is very versatile and could allow some of the newer suspension sutures to be used with direct visualization to suspend the lateral brow, malar fat pad, and the nasolabial fold to achieve an even more rejuvenating face-lift (although I have not yet done this). In fact, Dr. Gerald H. Pitman, also of the Manhattan Eye, Ear & Throat Hospital, performs a similar face-lift that he calls the *foundation face-lift*.<sup>10</sup> He feels that this thicker flap has the advantage of being better vascularized than a skin-only flap, frees the musculofascial tissues more extensively so that they better elevate these soft tissues, and allows for keeping the malar fat pad attached to the flap so it can be easily raised and restored to its original youthful position.

The thicker flap also has less bleeding because the deep plane is not as vascular. Because of the flap's large surface area of undermining and subsequent reattachment via fibrosis, a long-lasting correction results. Although these statements remain somewhat controversial, there is a definite deep plane school of thought among North American dermasurgeons. For example, Dr. Peter Adamson of the University of Toronto, Ontario, has switched his technique to include elevation in the deep plane in recent years because he feels it achieves a more 3-dimensional volumetric rejuvenation of the lower face and neck.<sup>11</sup> Admittedly, however, very little objective data exist to support the claim that deep plane face-lifts last any longer than more superficial techniques.

Worth noting here are safety considerations in performing any face-lift, especially a deep plane lift. The use of tumescent local anesthesia in performing a deep plane face-lift eliminates the risks of general anesthesia or intravenous sedation, although these risks are relatively small. Tumescent local anesthesia with epinephrine also significantly decreases bleeding and subsequent hematoma formation, and the relatively large volume of fluid injected makes the dissection easier and safer. (I have performed many of these face-lifts with little or no need for electrocoagulation of blood vessels.) It is important to have a thorough knowledge of the anatomy of the facial nerve to know where to find the danger zones for nerve injury.<sup>12</sup> On the cheek, the facial nerve is relatively

deep laterally, and the branches become more superficial as the dissection extends more medially, especially near the undersurface of the zygomatic arch and the angle of the mandible. For this reason, I keep the flap more superficial medial to these structures. I also employ vertical scissor spreading in the dissection to avoid cutting vital structures. The neck portion of the flap is above the platysma and therefore relatively thin to avoid damage to the marginal mandibular nerve and decrease the risk of hematoma formation (Figure 6). The 2 temporary buccal branch injuries I have seen in my cases occurred because my flap got a little too deep in these danger zones. The issue of the frontal branch of the facial nerve running in the layer between the superficial and deep temporal fascia can be handled by staying above the fascia and the nerve (my choice so far) or by going deep to the fascia (the choice of many surgeons, and a better choice if you want to use the incision for a lateral brow suspension). The other safety issue is trying to avoid the 1 case of superficial necrosis of the cheek flap I have seen by keeping the flap thick and avoiding excess traction with the suspension sutures.

In summary, I believe that this technique of lower-face (and even mid face) rejuvenation, employing primarily a short-incision approach and a deep plane composite cheek flap, is an excellent procedure for many patients that can be performed with tumescent local anesthesia. The incision can be extended postauricularly in select cases. I believe these techniques make more sense than the newer thread-lifts where there is very little significant tissue undermining and, in fact, I believe these open techniques are easier to

perform. These techniques as described in this article are actually a natural extension of some of the large cheek or neck flaps that many dermasurgeons routinely use to close large defects after skin cancer surgery. They can be a very useful addition to the dermasurgeon's armamentarium of facial rejuvenation procedures.

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