

# Review of 1,000 Consecutive Short-Scar Rhytidectomies

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**BACKGROUND** Short-scar rhytidectomies offer patients with mild to moderate facial aging an alternative to traditional face-lift surgery. Advantages of decreased recovery time, diminished risk, and decreased cost make this an attractive procedure to add to a cosmetic surgery practice.

**METHODS** This study is a review of 1,000 consecutive short-scar rhytidectomies performed over 36 months with at least 6 months of follow-up. All patients underwent short-scar rhytidectomy with SMAS suspension. Outcome parameters examined included complications or adverse events and any interventions necessary.

**RESULTS** The most common complication was suture extrusion, observed in 148 patients (14.8%). Ten patients had hematomas (1%), while postauricular nodules were observed in 8 patients (0.8%). Eight patients (0.8%) required liposuction under local anesthesia to address asymmetry due to under removal of fat in the submental region. Revision rhytidectomy was required in 5 patients (0.5%). Five patients (0.5%) had hypertrophic scarring, while 1 patient (0.1%) developed hyperpigmentation. There were no cases of nerve injury, infection, skin flap necrosis, skin puckering or depression, hair loss, or parotid injury.

**CONCLUSION** Short-scar rhytidectomy is an excellent procedure for good candidates with mild to moderate aging of the face. It has a very low complication rate and can be done safely in an office environment.

*Neil Tanna, MD, MBA, and William H. Lindsey, MD, FACS, have indicated no significant interest with commercial supporters.*

Short-scar rhytidectomy has become a popular alternative to traditional face-lift for both patient and surgeon.<sup>1-4</sup> When compared to traditional rhytidectomy procedures, the decreased expense, risk, and recovery time often associated with short-scar rhytidectomy make it an attractive option.

Drawbacks often cited in short-scar rhytidectomy by critics, patient and physician alike, primarily center on the fact that a smaller procedure may result in less change than is available utilizing traditional or deep-plane face-lift techniques.<sup>5-7</sup> Although this procedure is not a universal technique for all patients, it is an excellent option for facial rejuvenation of patients with mild to moderate signs of facial aging. Patients with severe midfacial ptosis and prominent nasolabial folds may benefit from more traditional procedures.

We find that a large cross-section of the population enthusiastically embraces the idea of a “minilift”

and readily understands that alternative procedures can offer significantly greater changes of the face and neck. Not surprisingly, most patients who proceed with a short-scar rhytidectomy at our facility are patients who are required to work and therefore can not afford, sometimes monetarily but more often timewise, the alternative of traditional rhytidectomy. A second group of patients declining traditional procedures express interest in avoiding any significant sedation. Sedation anesthesia provokes concern and fear in a large portion of the patient pool. Finally, the proliferation of “makeover” shows on television has increased dramatically the acceptance of cosmetic surgery among the population. However, contrary to expectations, most patients who consult with us are intrigued by cosmetic surgery because of these shows, but fear the drastic and often “pulled lip” appearance of aggressive facial surgery. These patients are

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often the best candidates psychologically for short-scar rhytidectomy.

To evaluate this procedure, a review of 1,000 short-scar rhytidectomies performed by one surgeon (WHL) was done. Particular attention was given to procedure safety, risks, and complications.

### Materials and Methods

One-thousand patients received short-scar rhytidectomy by the senior author (WHL) between December 2002 and January 2005. Patient charts were reviewed for postoperative complaints and complications and any treatment required. All patients received concomitant cervicofacial liposuction. Although the procedure was combined with eyelid surgery in some patients, eyelid outcomes were not reviewed for manuscript preparation.

All rhytidectomies were performed with local anesthesia and approximately one-third of patients required oral sedation (10 mg diazepam 20 minutes before procedure). No patients received general or intravenous anesthesia. The procedure was then performed as follows. Patients were marked in an upright position and then placed on the procedure table (Figure 1). Local anesthesia was placed and averaged 18 mL of 1% lidocaine with 1:100,000 epinephrine. For liposuction procedures, an average of 15 mL of 0.5% lidocaine with 1:200,000 epinephrine was also placed in the jowls and submental fat. Ten minutes were allowed to elapse before beginning the procedure.

The preauricular incision was placed in the preauricular crease in all patients. After periauricular incisions, skin flaps were sharply elevated bilaterally (Figure 2). For liposuction, an additional submental incision was made and blunt-tipped 4-mm liposuction was performed in the neck as well as to clean the superficial musculoaponeurotic system (SMAS) and sculpt the jowls. SMAS plication, with a permanent suture (2-0 mersilene, Ethicon, Somerville, NJ), was

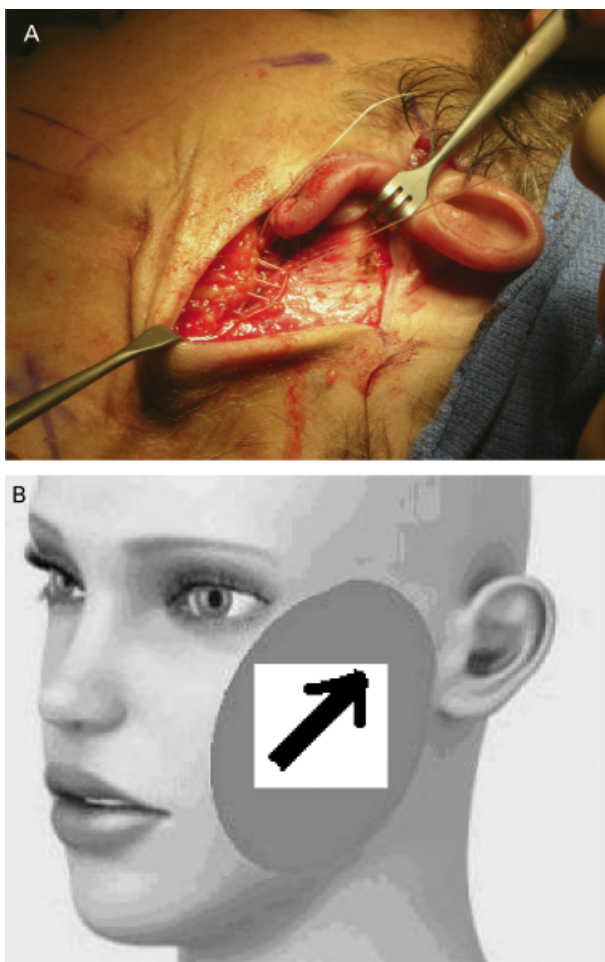


**Figure 1.** Preoperative markings in short-scar rhytidectomy.

performed in two locations for each side of the face. In the cheek area, plication was started preauricularly at the level of the tragus and extended to a point just posterior to the angle of the mandible. SMAS plication was similarly performed in the neck area, from near the angle of mandible to the mastoid area. The vector of plication in both areas is in a superior-posterior direction (Figure 3). Redundant

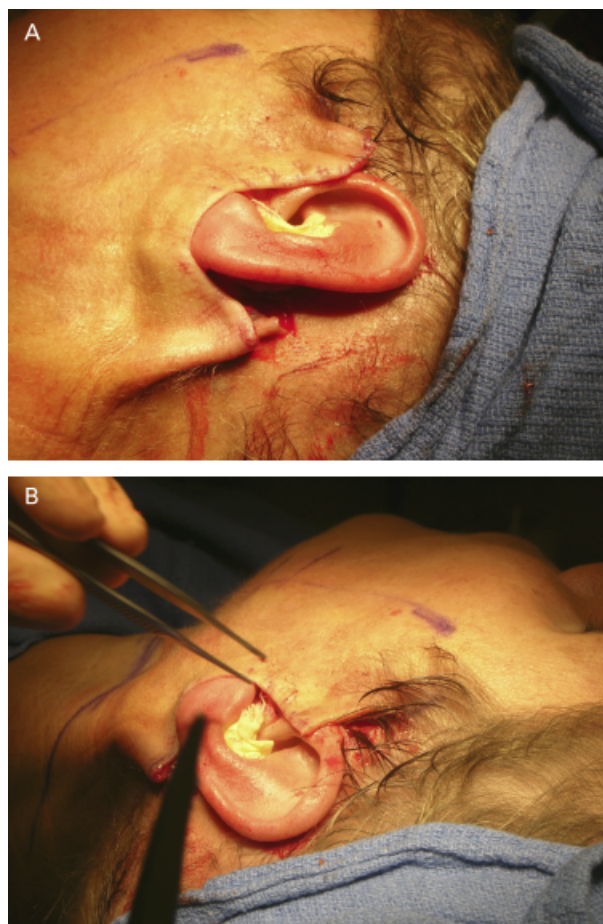


**Figure 2.** Skin flap elevation in short-scar rhytidectomy.



**Figure 3.** SMAS plication with running double layered locking suture technique (A). The vector of plication is in a superior-posterior direction (B).

skin was excised and a tension-free closure was achieved (Figure 4). 4-0 chromic (Ethicon), 4-0 vicryl (Ethicon), and 6-0 prolene (Ethicon) were used for skin and subcutaneous closure followed by the application of a head-wrap (Figure 5). Liposuction patients were instructed to wear the wrap for 6 days and then sleep in the wrap for an additional week; otherwise patients could remove the wrap on postoperative day 1 and leave the cheeks exposed. Patients at home performed routine postoperative wound care and sutures were removed at postoperative day 6 or 7. All patients were prescribed postoperative antibiotics for 5 days and smokers for 7 days.



**Figure 4.** Excess skin is excised after SMAS plication (A). As incisions in this series remain in the postauricular sulcus, it becomes necessary to accept moderate bunching of skin edges behind the ear for the early to midpostoperative period (B).

## Results

There were 950 women (95%) and 50 men (5%) who received short-scar rhytidectomy. The average age of the patient was 57 years (range 39–85 years). Short-scar rhytidectomy was employed as a primary rhytidectomy in 785 (78.5%) patients and a secondary (revision) rhytidectomy in 215 patients (21.5%). Of 449 patients who received concomitant eyelid surgery, 394 had upper blepharoplasty, 11 had lower blepharoplasty, and 44 had both upper and lower blepharoplasty. All patients received submental and jowl liposuction at the time of rhytidectomy.



**Figure 5.** Tension-free closure of short-scar rhytidectomy.

Suture extrusion was the most frequently observed complication, noted in 148 patients (14.8%). Of these patients, 139 were from extrusion of at least one dissolvable suture. The remaining 9 were from extrusion of the more deeply placed permanent SMAS plication sutures. In all but 1 patient, the extruded sutures were in the postauricular area.

Hematoma formation was noted in 10 patients (1%). One patient developed an expanding hematoma within 24 hours of surgery. Resolution was achieved with simple electrocauterization of a small vessel at the earlobe. The remaining 9 had small-localized collections ( $\leq 3 \text{ cm}^3$ ), evacuated through the incision line. The recognition of these minor hematomas ranged from postoperative day 2 to 7. Eight had no subsequent recurrence, while 1 patient reaccumulated three times. For resolution, a penrose drain was placed for 3 days.

Fifteen patients (1.5%) complained of submandibular gland ptosis following surgical correction of facial laxity and submandibular adiposity.

Postauricular nodules were noted in eight patients (0.8%). At 6 months postoperatively, these patients required excision of a standing cone. Patients frequently reported lumpiness in the postauricular region or submental liposuction area. These complaints subsided after instruction to perform gentle massage. No skin depression, puckering, or

sloughing was noted. Skin tethering, reported to sometimes occur after liposuction, was not observed.

Eight patients (0.8%) required additional liposuction under local anesthesia. This was necessary to address a small degree of asymmetry secondary to under removal of fat in the submental region. Major revision procedures (entailing more traditional-type rhytidectomy techniques) were required in five patients (0.5%). Five patients (0.5%) developed hypertrophic scarring. Of these, two were treated successfully with local corticosteroid injections. The remaining three required excision of scars. One patient (0.1%) who did not practice postoperative sun avoidance developed postoperative hyperpigmentation. There were no cases of nerve injury, infection, skin flap necrosis, alopecia, or parotid injury. Table 1 summarizes the observed complications.

## Discussion

Short-scar rhytidectomy can achieve significant changes in facial and neck rejuvenation while alleviating many of patients' main concerns with more traditional face-lifts (Figure 6).<sup>4,5,7,8</sup> First, costs associated with the procedure can be kept significantly less by avoiding heavy sedation and the facility and anesthesia charges often required with traditional lifts. Second, by performing this procedure under local or minimal oral sedation, risks associated with sedation anesthesia are eliminated. Postanesthesia nausea is also prevented. Deep venous thrombosis, associated with even short general anesthetic procedures, is not at increased risk as patients are free to

**TABLE 1. Description of Complications**

<i>Complication</i>	<i>Incidence (%)</i>
Suture extrusion	14.8
Skin/subcutaneous suture	13.9
SMAS plication suture	0.9
Hematoma	1
Postauricular nodules	0.8
Hypertrophic scarring	0.5
Hyperpigmentation	0.1



**Figure 6.** Preoperative frontal (A), 2-year postoperative frontal (B), preoperative lateral (C), and 2-year postoperative lateral (D) facial views of a 63-year-old female who underwent short-scar rhytidectomy.

shift their legs throughout the 1-hour procedure. Third, downtime is minimized by limited dissection and many patients return to normal activities the following day unless liposuction-requiring tissue supporting head-wrap is performed. Fourth, significant complications are very uncommon. The potential for injury to the facial nerve is decreased by limited dissection and, as patients are able to move their faces during the procedure, the surgeon can determine if any asymmetry seen is related to local anesthesia or by the procedure itself. Finally, the authors believe that short-scar rhytidectomy offers an efficacious lift with long-lasting results, similar to those found with traditional face-lift procedures (Figure 6). While the outcome parameters of this study examined the safety of

short-scar rhytidectomy, the authors hope that future studies will corroborate their anecdotal experience.

There is a significant learning curve associated with all “mini” procedures to achieve the results expected while not extending the procedure into a traditional case. Short-scar rhytidectomy is no exception.<sup>1,2,4</sup> The surgical key factors in achieving results without significant increases in complications or downtime are SMAS suspension, postauricular skin excision, and tension-free closure. Additionally, the authors recommend concomitant cervicofacial liposuction. While this may help augment result, its exact contribution to the achieved lift is unknown.

During the past 10 years, the senior author (WHL) has employed a variety of techniques for SMAS suspension including imbrication, plication, resorbable and permanent sutures, simple, mattress, running, and purse-string techniques.<sup>2,3,9,10</sup> Although we have found advantages and disadvantages with all of these techniques, what has consistently achieved a secure safe suspension is a running locked two-layer plication suture using a braided nonabsorbable suture (Figure 5). We have found that the locking suture distributes force all along the plicated SMAS more reliably than simple or mattress sutures. If one loop were to pull through, the lock prevents slippage of the entire suspension. By adding a second layer over the first plication layer, tension is minimized on this “safety” layer, which also buries the loops of the first layer. We have found this suture to be useful in all patients, whether needing a conservative short-scar procedure or traditional lower face and neck-lift.

Suture extrusion was the most frequently observed complication. A majority of these cases (139/148 patients) involved the absorbable sutures and not the deeper SMAS plication sutures. However, in all but 1 of the 148 patients, the suture extrusion occurred in the postauricular area. Additionally, a majority of these patients were female and many were noted to have a narrow auriculomastoid angle. It may have



**Figure 7.** Earring or auricular contact with the postauricular skin may have predisposed this patient to suture extrusion.

been that in these patients, earring or auricular contact with the postauricular skin predisposed them to suture extrusion (Figure 7). Management of suture extrusion can range from observation to simple repair or be as extensive as revision rhytidectomy. The five patients requiring major revision included three patients who received other types of SMAS plication with interrupted sutures which appeared to either pull-through or have suture breakage. The one major revision in a patient who received the double layered suture occurred in an 80-year-old male who, despite instructions to the contrary, went on a vigorous golf vacation 3 days after the procedure and “felt a pop” on a particularly challenging shot. On revision, the suture was found to have broken and easy repair was performed.

An additional technical component requiring mastery is postauricular skin closure.<sup>1,3,4</sup> With traditional lower face-lift incisions extending into the posterior hairline, discrepancies between the flap skin edge and scalp skin edge can be attenuated by using the rule of halves during closure. However, short-scar rhytidectomy incisions in this series remain in the postauricular sulcus, so as to limit scar exposure during the quick recovery period. It becomes necessary to accept moderate bunching of skin edges behind the ear for the early to midpostoperative period in many patients (Figure 4). This is particularly true if a major change is to be achieved in a heavy neck. The pros and cons of this incision and procedure versus that of a traditional lower face-lift are reviewed with patients preoperatively. Most clients, and all who become patients and undergo the procedure, readily accept this transient “bunching behind the ear” as the tradeoff of having a minilift and still achieving significant change in the neck and jowls. Gentle massage after suture removal resolves this problem in almost all patients by 2 months. Rarely is removal of a remaining standing cone deformity necessary.

Preauricular skin closure also requires care. Unlike traditional lifts where the patient will wear dressings for several days to more than a week postoperatively,

the short-scar rhytidectomy patient often chooses the procedure so that they can go out in public in a day or two. Therefore, a precise, tension-free closure with fine suture is required. If necessary, a flesh-colored steri-strip can be used to cover sutures until removed. We have seen significant scarring from other practices performing minilifts and attribute this to a combination of poor technique and lack of SMAS suspension. Several cases have occurred in patients who had skin closure with a single layer of skin sutures without subcutaneous sutures to reduce skin edge tension. Others have had closure with larger inflammatory reaction causing sutures. Revision procedures in these patients have not resulted in recurrence of the scars. Also, it appears that many short-scar procedures offered to the public are simply skin-lifts rather than SMAS lifts. We have operated on many patients with significant scars who have had a skin lift elsewhere. Our only significant preauricular scar occurred in a mixed race female who developed a small hypertrophic scar at 6 weeks bilaterally. One side resolved with two steroid injections; the other side required a small revision. This dehissed at 9 days and took several months to heal. The patient denied any systemic medical conditions on numerous occasions and refused reconsultation with her primary care provider. She was seen at 6 months postrevision with a persistent small hypertrophic scar, and it was determined that she had had diabetes and moderate renal insufficiency but had withheld this information.

## Conclusion

Short-scar rhytidectomy is an excellent procedure for rejuvenation of mild to moderate aging of the face.

Critical to its success are obtaining a secure SMAS suspension and tension-free closure. The limited downtime, risk, and cost are very appealing to a wide range of patients. While it does have both limitations and a learning curve, once mastered, it is an excellent reconstructive procedure for early signs of facial aging.

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## COMMENTARY

Over the past few years, face-lifting techniques have evolved due to patient desires for facial rejuvenation procedures with less downtime. Meanwhile dermatologic surgeons and others have pioneered local an-

esthesia techniques for face-lifting. The ultimate result has been a shift away from general anesthesia, traditional full face-lifts to mini- and short-scar lifts performed with local anesthesia. While the less invasive techniques have demonstrated decreased complications and recovery compared to traditional techniques, it has not been established that they have a similar duration or degree of improvement in the face and neck. Today, patients also seek a natural rejuvenation without the characteristic “wind-blown” appearance characteristic of traditional face-lift techniques utilizing a horizontal vector of SMAS tightening. Many of the newer lifts, despite modifications in incision length and degree of undermining, continue to incorporate horizontal vectors of tightening.

It is easy to demonstrate on a patient looking into a mirror that horizontal tightening of the preauricular skin flattens the nasolabial folds and has minimal impact on the neck. In contrast, vertical elevation of the patient’s preauricular skin creates dramatic movement of the cheek, jaw, and neck with minimal impact on the nasolabial folds. The vertical elevation of the SMAS and platysma reverses the gravity-induced descent of the facial support structures and skin providing a more natural outcome without an over-stretched or cosmetic appearance characteristic of full or “mini” horizontal vector lifts. Vertical vector lifts also do not create significant redundant skin in the pre- or postauricular creases which often requires dog ear reduction postoperatively (Figure 4). Horizontal vector “minilifts” without the addition of a submentoplasty procedure must rely on liposuction for rejuvenation of the neck because of limited access for suspension of the platysma via the small postauricular flap. The horizontal minilifts combined with neck liposuction that do not address the ptotic platysma muscle will have a shorter duration of benefit and may ultimately accentuate the platysmal banding of the neck previously camouflaged by the adipose tissue. To be effective, a face-lift technique must also maximize rejuvenation of the neck since the greatest regional improvement achieved by any face-lift is in the neck and jawline, not the central face.

The short scar face-lift outlined in this article is a 1-hour, local anesthesia procedure that utilizes a horizontal vector short-scar lift combined with cervicofacial liposuction. With an impressive number of procedures, this article supports the safety of the technique but does not assess patient satisfaction or the duration of results or incorporate a blinded assessment of improvement. There is also no comparison of these parameters to patients who underwent full face-lifts with sedation by the same physician.

This technique is quite similar to the short-scar face-lift and cervicofacial liposuction combination I began in June 2002 and presented in October 2003 at the ASDS meeting as the Facial Lipo-Lift. With long-term follow-up of my first 40 patients, I realized that the duration of results for the lower face and neck was less than the patients and I had expected. To provide a dramatic and more natural result, eliminate the postauricular redundant skin, and achieve a longer duration, my local anesthesia technique evolved into a procedure utilizing an incision length between the mini and traditional lift, full undermining of the neck, addition of submentoplasty, and 100% vertical plication of the SMAS in the preauricular region and the edge of the platysma muscle to mastoid fascia in the postauricular region. With more than 3 years of follow-up and more than 300 patients, I believe that long-term follow-up will reveal the limitations of the minilifts and facial rejuvenation techniques will ultimately come full circle with a return to full face-lift techniques only now performed with local anesthesia.

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