

SMAS Advancement with Fat Enhancement (SAFE) Lift

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INTRODUCTION

As our understanding of facial anatomy has progressed, so too has the face lift evolved from a simple skin-only procedure to a sophisticated surgery involving detailed preoperative facial analysis and an individualized treatment plan. Perhaps the most significant advancement in facial rejuvenation research was the discovery of the superficial and deep facial fat compartments and how they behave in facial aging.¹⁻³ (See **figure 1, Supplemental Digital Content 1**, which displays facial fat compartments. Fat grafting of the labeled fat compartments is critical in the “lift-and-fill” face lift technique. Reprinted with permission from *Plast Reconstr Surg*. 2014;133:756e–767e. <http://links.lww.com/PRSGO/B545>.) With this understanding, we now perform targeted facial fat augmentation with precise manipulation of the deeper SMAS layer. This leads to a more natural and long-lasting result.^{4,5}

PREOPERATIVE EVALUATION

The facial rejuvenation procedure begins with a thorough preoperative analysis to identify areas of volume deflation, rhytides, and tissue laxity. Areas of volume deflation and deep rhytides are marked preoperatively in the dependent position to facilitate intraoperative accuracy. Facial horizontal fifths and vertical thirds are analyzed to determine overall facial balance and detect subtle facial asymmetries. The relationship among facial length, midfacial width, and overall fullness dictates a customized surgical intervention. (See **figure 2, Supplemental Digital Content 2**, which displays preoperative analysis for the individualized component facelift. Anteroposterior view is used to determine midface width, height, and overall facial shape and soft-tissue distribution. Reprinted with permission from *Plast Reconstr Surg*. 2009;123:1050–1063. <http://links.lww.com/PRSGO/>

B546.) (See **Video 1 [online]**, which displays preoperative evaluation.)

OPERATIVE APPROACH

Fat Harvest

Fat is typically harvested from the medial thighs with manual, low-pressure aspiration using a 10-cm³ syringe and a 3-mm multi-hole cannula. To optimize cell viability, no local anesthetic or epinephrine is used before aspiration. The aspirate is centrifuged for 1 minute at 2250rpm to remove cellular debris. Fat is then isolated and transferred to 1-cm³ syringes. (See **Video 2 [online]**, which displays fat harvest.)

Fat Enhancement

Autologous fat transfer is performed at the beginning of the procedure to facilitate accurate volume restoration. Lateral to the alar-cheek junction, a 14-gauge needle is used to introduce the Coleman cannula into the deep compartments. Fat is injected into the deep malar compartments bilaterally using 1-cm³ syringes. Approximately 10–12 cm³ of healthy yellow fat is distributed into the deep central facial compartments. This includes 2 cm³ into the deep nasolabial compartment and 2–4 cm³ in the deep malar compartments. Depending on the desired malar contour, the high superficial malar and middle superficial malar compartments are augmented with 1–2 cm³ of fat (See **figure 1, Supplemental Digital Content 1**, which displays facial fat compartments. Fat grafting of the labeled fat compartments is critical in the “lift-and-fill” face lift technique. Reprinted with permission from *Plast Reconstr Surg*. 2014;133:756e–767e. <http://links.lww.com/PRSGO/B545>). Additionally, fat can be placed into the chin, along the mandibular border, ear lobule, and forehead, taking care to stay superficial while disrupting the temporal fusion line (See **Video 3 [online]**, which displays fat enhancement). These areas for fat enhancement are dependent on preoperative facial analysis.⁶

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Skin Elevation

Each hemiface is injected in the subcutaneous plane with 100 cm³ of a solution of 1:400,000 epinephrine.⁷ A curvilinear intratragal and preauricular incision is designed. Superiorly, the incision travels preauricularly, and at the level of the helical root, the incision extends anteriorly along the infratemporal hairline. The inferior incision extends along the root of the lobule and around the contour of the conchal cartilage. The postauricular incision is carried superiorly along the hairline, and depending on the extent of skin removal, the incision is carried into the hair-bearing scalp, or along the posterior hairline. (See figure 3, Supplemental Digital Content 3, which displays the rhytidectomy incision. *White line*, incision used by RJR. Reprinted with permission from *Plast Reconstr Surg.* 2017;139:295–307. <http://links.lww.com/PRSGO/B547>.) (See Video 4 [online], which displays skin elevation.)

Skin elevation is carried out strategically in zones 1, 2, and 3. The borders of zone 1 include a line drawn from the alar base to the tragus superiorly, and the anterior border of the sternocleidomastoid muscle inferolaterally. Zone 2 is the region posterior to the sternocleidomastoid toward the posterior hairline. Zone 3 is the region from the superior border of zone 2 extending superiorly to the lateral canthus. (See Video 5 [online], which displays zones of dissection.) The extent of skin undermining is individualized to the shape and width of the patient's face.^{5,8}

Neck Contouring

The submental incision is made approximately 3–4 mm posterior to the submental crease. Skin is elevated from the underlying platysma. Following elevation of skin from platysma through the submental incision, the medial borders of the platysma are identified. Medial platysma banding and diastasis are corrected with medial platysma plication.⁹ Beginning as inferiorly as possible and traveling superiorly, the medial borders of the platysma are plicated with buried, interrupted permanent sutures. To prevent bowstringing of the medial platysma, and to accentuate the cervicomental angle, a wedge of platysma is excised inferiorly at the medial border. Care is taken to break through the posterior cervical fascia to ensure proper release and accentuation of the cervicomental angle.¹⁰ (See Video 6 [online], which displays neck contouring.)

The lateral platysma window is initiated 1 fingerbreadth below the angle of the mandible and 1 fingerbreadth in front of the sternocleidomastoid muscle. The platysma is elevated carefully in a medial and inferior direction for 2–3 cm. The lateral platysma is tightened and secured to the mastoid fascia with 2 or 3 figure-of-8 permanent sutures.¹¹ (See figure 4, Supplemental Digital Content 4, in which inferomedial platysma is transected, platysmal midline stitches are placed, and a lateral window is performed. Reprinted with permission from *Plast Reconstr Surg.* 2006;118:1251–1263. <http://links.lww.com/PRSGO/B548>.) (See Video 7 [online], which displays lateral platysma window.)

Superficial Musculoaponeurotic System Advancement

Preoperative analysis of facial symmetry and shape dictates the superficial musculoaponeurotic system (SMAS) technique. In the case example, the short side of the face is treated with an oblique SMASectomy technique. (See figure 5, Supplemental Digital Content 5, which displays the oblique SMASectomy. SMAS movement is directed perpendicular to the nasolabial fold. This is beneficial for the narrower facial side. Reprinted with permission from *Plast Reconstr Surg.* 2009;123:1050–1063. <http://links.lww.com/PRSGO/B549>.)

The SMASectomy is designed beginning medially along the zygomatic arch traveling toward the ear lobule. Approximately 1 cm of SMAS is excised followed by advancement with a running, locked suture. On the contralateral side, the long side of the face is treated with a horizontal SMASectomy.⁵ (See Video 8 [online], which displays SMAS advancement.)

Skin Redraping and Closure

The skin flaps are redraped along a posterosuperior vector and inset with minimal tension. A closed suction drain is placed in the neck via a stab incision in the occipital scalp. Sparing 3-0 Monocryl (Ethicon, Inc.) deep dermal sutures are used, followed by 5-0 nylon (Ethicon, Inc.) interrupted skin sutures. Staples are used on the incisions in hair-bearing areas. (See Video 9 [online], which displays skin redraping and closure.)

CONCLUSIONS

Facial rejuvenation can be achieved through the combination of volume restoration and face and neck contouring. (See figure 6, Supplemental Digital Content 6, which displays (a–c): Pre- and postoperative photographs of a patient 14 months following the SMAS Advancement with Fat Enhancement (SAFE) lift technique in (a) AP, (b) oblique, and (c) lateral views. This patient underwent an upper and lower blepharoplasty, fat grafting to the face, facelift including SMASectomy on the left side, and a SMAS stacking procedure on the right. A neck lift was performed via medial platysma plication and the lateral platysma window technique. <http://links.lww.com/PRSGO/B550>.) Volumization is achieved with autologous fat grafting of the facial fat compartments. Neck contouring is achieved through medial platysma plication and the lateral platysma window. Lateral midface rejuvenation is achieved through SMAS stacking or SMASectomy techniques.

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PATIENT CONSENT

Patients provided consent for the use of their images.

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