Face Lift

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Learning Objectives: After reading this article, the participant should be able to: 1. Identify and describe the anatomy of and changes to the aging face, including changes in bone mass and structure and changes to the skin, tissue, and muscles. 2. Assess each individual’s unique anatomy before embarking on face-lift surgery and incorporate various surgical techniques, including fat grafting and other corrective procedures in addition to shifting existing fat to a higher position on the face, into discussions with patients. 3. Identify risk factors and potential complications in prospective patients. 4. Describe the benefits and risks of various techniques.

Summary: The ability to surgically rejuvenate the aging face has progressed in parallel with plastic surgeons’ understanding of facial anatomy. In turn, a more clear explanation now exists for the visible changes seen in the aging face. This article and its associated video content review the current understanding of facial anatomy as it relates to facial aging. The standard face-lift techniques are explained and their various features, both good and bad, are reviewed. The objective is for surgeons to make a better aesthetic diagnosis before embarking on face-lift surgery, and to have the ability to use the appropriate technique depending on the clinical situation. (Plast. Reconstr. Surg. 128: 747e, 2011.)

For treating the structure of the aging face, face-lift surgery is the standard against which all other methods must be measured. Despite the introduction of less invasive surgical procedures and many nonsurgical modalities, nothing can match a face lift in its ability to return the basic architecture of the human face to a more youthful configuration.

ANATOMY OF FACIAL AGING

The visible changes of age are the net result of anatomical alterations that occur in all structures of the face; no tissue is spared. As our understanding of these basic structural changes has grown, so too has our technical ability to reverse them.

Bone

With age, some bone mass is lost from the facial skeleton in certain specific areas. In the midface, there is a gradual retrusion of the infraorbital rim and the anterior maxilla, contributing in part to development of the tear trough deformity and a negative vector of the anterior globe in relation to the soft-tissue cheek mass (Fig. 1).¹,² The orbit expands inferolaterally and superomedially (Fig. 2).³,⁴ If dentition is lost, there is also a reduction in overall facial height because of loss of alveolar bone in the mandible and maxilla.⁵,⁶

Skin

Many recognized changes occur in the skin.⁷ There is a gradual loss of elasticity, a reduction in skin appendages, decreased dermal thickness, and the development of folds and wrinkles. Accelerating the process are external variables such as sun exposure, smoking, and weight fluctuations.

Soft Tissue

The most dramatic changes occur in subcutaneous soft tissue. The face can be considered a lam-

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inated structure, analogous to the five layers of the scalp. In the face, these layers are skin, subcutaneous fat, musculoaponeurotic layer, spaces that contain nerves and retaining ligaments, and the deep fascia/periosteum (Fig. 3). (See Video 1, in which Bryan Mendelson gives a lecture on facial anatomy and the aging of the face, available in the “Related Videos” section of the full-text article on PRSJournal.com or, for Ovid users, at http://links.lww.com/PRS/A418. This clip covers the retaining ligaments and septa.) Multiple small septa compartmen
talize the subcutaneous fat, and in areas overlying any deep soft-tissue ligaments, the septa run vertically, making the dissection of skin from the underlying fat more difficult and bloody; McGregor’s patch is such an area.

Traditionally, surgeons have considered facial fat to be a ptotic tissue, sliding down over the muscles of facial expression, which do not elongate with age. The fat tends to bunch up at the nasolabial fold and at the mandibular ligament, where it creates the jowl.12

Recently, there has been a greater appreciation for the loss of soft-tissue volume in the middle and upper thirds of the aging face.13–15 One study supports the concept that tissue along the inferior orbital rim does not become ptotic but instead appears to do so because of volume loss.10 Meanwhile, fat appears to accumulate in the lower third, especially the neck and jowl area, a so-called radial expansion, which changes the overall facial shape (Fig. 5).16,17

Immediately deep to the subcutaneous fat is the SMAS, described by Mitz and Peyronie in 1976.18 Subsequent studies identified this layer as investing the elevators of the upper lip on their superficial and deep surfaces.19–21 The SMAS is continuous with the platysma muscle inferiorly, and superiorly it is analogous to the superficial temporal fascia (temporoparietal fascia), which continues into the scalp as the galea aponeurotica.22 The thickness of the SMAS varies between patients, and also varies in every individual face, being thicker and adherent over the parotid, and thinner anteriorly. The SMAS is tenuous under the malar fat pad, where it splits to encompass the zygomaticus major and the orbicularis oculi. The SMAS has important surgical implications because it can act as a carrier for overlying subcutaneous fat, and it has been shown to be much more resistant to stretch
Furthermore, below the zygomatic arch, all branches of the facial nerve are deep to the SMAS.

The muscles of facial expression are arranged in progressively deeper layers, with the most superficial being of interest to surgeons: zygomaticus major, zygomaticus minor, orbicularis oculi, and platysma. These muscles are encased by the SMAS and are innervated by branches of the facial nerve on their deep surface. Consequently, surgical dissection on the superficial surface of these muscles will not endanger the facial nerve. The only facial muscles innervated on their superficial surface are the levator anguli oris, mentalis, and buccinator.

Retaining Ligaments

The existence of retaining ligaments was originally described by Bosse and Papillon and
Furnas, and later refined by Stuzin et al. These tethering structures attach the SMAS and overlying soft tissue to underlying muscle and bone and the parotid gland. Zygomatic and mandibular ligaments take their origin from the zygoma and mandible, whereas masseteric ligaments originate from the masseter muscle. Overlying the parotid gland adjacent to the ear lobe is firm fascia that is referred to by a number of different anatomical names, such as platysma-auricular ligament, parotid cutaneous ligament, and Lore’s fascia. This network of retaining ligaments has been characterized as septa that not only tether the overlying SMAS but also delineate various anatomical spaces (Fig. 6).

The prezygomatic space is a triangular space overlying the body of the zygoma; it is bounded superiorly by the orbicularis retaining ligament and inferiorly by a row of zygomatic cutaneous ligaments. The roof of this space is the orbicularis oculi muscle. With age, ligamentous laxity results in bulging of this space; this has been proposed as the cause of malar mounds. The masticator space lies anterior to the masseter in the midcheek and contains the buccal fat pad. The premasseteric space overlies the lower portion of the masseter. Its roof is the platysma, and aging results in the formation of jowls as this space bulges against the mandibular ligament (Fig. 7).
The visible effect of soft-tissue aging around these structures is seen with development of the mid-cheek groove, which is caused by the cutaneous extensions of the zygomatic ligament and loss of fat. Simi-

Fig. 5. A patient is shown at age 20 years (left) and at age 70 (right). This healthy woman has never undergone surgery, has gained 10 pounds, and has aged 50 years. There has been volume loss in the periorbita and middle third of her face, revealing underlying bone. The remaining soft tissues have become ptotic, flattening her cheeks and widening her jawline.

Fig. 6. Ligaments line up in a linear fashion, forming septa that tether the overlying SMAS but also act as boundaries around bony cavities and anatomical spaces. (Reprinted with permission from Mendelson B. Facelift anatomy, SMAS retaining ligaments and facial spaces. In: Aston SJ, Steinbrech DS, Walden JL, eds. Aesthetic Plastic Surgery. London: Elsevier; 2009:63.)

Fig. 7. From above, the orbicularis retaining ligament and the zygomaticocutaneous ligaments delineate the preseptal space, the prezygomatic space, and the masticator space. The premasserteric space is posterior to the masseteric cutaneous ligaments. (Reprinted with permission from Mendelson B. Facelift anatomy, SMAS retaining ligaments and facial spaces. In: Aston SJ, Steinbrech DS, Walden JL, eds. Aesthetic Plastic Surgery. London: Elsevier; 2009:60.)
larly, the nasojugal groove (tear trough) is partly caused by the tethering effect of the orbicularis retaining ligament (orbitomalar ligament), as well as loss of overlying fat, and bulging of orbital fat superior to the groove.29,30 In the posterior cheek, where the SMAS is adherent to the parotid gland, there is little soft-tissue ptosis with age. This is the “fixed SMAS” that can be used to support the surgically mobilized portion of the more anterior “mobile SMAS” (Fig. 8). (See Video 2, http://links.lww.com/PRS/A419.)

NERVE ANATOMY

Facial Nerve

Within the parotid gland, the facial nerves divide into an upper portion and a lower portion, which in turn divide into five branches: temporal, zygomatic, buccal, marginal mandibular, and cervical. Exiting the parotid gland deep to the parotid-masseteric fascia, the temporal branch divides into two or three branches that course superiorly, crossing the middle third of the zygomatic arch. The buccal and zygomatic branches frequently interconnect.31 The buccal branches travel across the buccal fat pad, in close proximity to the parotid duct and the transverse facial artery. The marginal mandibular branch exits the parotid and normally courses 1 or 2 cm below the border of the mandible. Aging causes little change in the branches of the facial nerve, although in older individuals the marginal mandibular branch has been seen as much as 4 cm below the mandibular border.32

Great Auricular Nerve

The great auricular nerve, a branch of the cervical plexus, provides sensation to the earlobe and lateral portion of the pinna. This nerve crosses the midportion of the sternocleidomastoid muscle approximately 6.5 cm below the external auditory canal. It then runs parallel and just posterior to the external jugular vein. The nerve is technically deep to the superficial cervical fascia, but overlying the posterior border of the sternocleidomastoid, the platysma is absent, placing it in a superficial location and therefore at risk during surgical dissection.33

PATIENT EVALUATION

As with any elective surgery, patients presenting for facial rejuvenation should have a thorough preoperative medical assessment. Normally, these patients are middle-aged or older and may have chronic conditions such as respiratory disease, cardiac disease, diabetes, and obesity, all of which can preclude surgery. In otherwise healthy individuals,
specific issues that can be problematic in the face-lift population include the following:

Patients with a tendency to be hypertensive are at increased risk for hematoma, the most common face-lift complication. This should be investigated, and treated appropriately before surgery. If patients are intermittently hypertensive (the white coat syndrome) or they are type A individuals who are easily excitable, perioperative treatment with a medication such as clonidine can be helpful.

Smokers are at increased risk for skin necrosis in their face-lift flaps. They should avoid nicotine-containing substances for 3 weeks before surgery. Despite the risks involved, some surgeons are willing to perform face-lift surgery on active smokers, although the nature of the procedure should be modified appropriately with thicker flaps, less dissection, and minimal tension.

Female patients in the face-lift age group may be taking hormone replacement and are therefore at increased risk for deep vein thrombosis. In addition to all normal preventative measures, this medication should be discontinued 3 weeks before surgery.

Patients taking medications, herbs, or supplements that inhibit platelet function and promote bleeding should be taken off these agents 3 weeks before surgery.

Once a patient is considered medically and mentally fit for facial rejuvenation, there should be an objective assessment of the entire face, including the forehead, eyelids, cheeks, the perioral area, and the neck. Facial aging is an interrelated phenomenon, with changes in one part of the face affecting adjacent areas. Specific factors to observe are any facial asymmetries, quality of the skin, the thickness of facial soft tissue, the degree of soft-tissue ptosis, the mobility of the tissue, the degree of soft-tissue loss in some areas or accumulation in other areas, and any age-related changes in muscle, particularly the platysma.

**Surgical Objectives**

The purpose of facial assessment is to derive an aesthetic diagnosis from which specific surgical objectives can be determined. The most common diagnosis is soft-tissue ptosis in the cheeks, and historically, surgeons have been guided by the simple fact that people appear rejuvenated when lower cheek fat is shifted into the middle and upper cheek. However, it is also apparent that people can be rejuvenated with volume augmentation alone. Increasingly, volume augmentation with fat grafting is performed in conjunction with face-lift surgery.

Other issues that should enter the surgical plan include the possibility of augmenting areas of bone loss, correcting lax platysma muscles, and treating aged skin by surgical tightening or with resurfacing techniques. Lastly, to produce harmonious results, neighboring anatomical areas such as the forehead, eyelids, and mouth will often benefit from simultaneous or staged correction. Many patients will not have considered other parts of their face; discussing such interrelated issues may prevent postoperative disappointment.

**FACE-LIFT TECHNIQUES**

**Subcutaneous Face Lift**

The first face lift, dating from the early twentieth century, was a simple skin excision along the temporal hairline and anterior to the ear; several authors lay claim to this innovation. The approach soon evolved into a subcutaneous dissection of a large random pattern skin flap that was shifted in a superolateral direction. Still used today, this classic procedure relies on skin tension to tighten the skin and shift underlying soft tissue (Fig. 9).

The advantages of the subcutaneous face lift are that it is relatively safe, it is easy to perform, and patient recovery is rapid. For the thin patient with...
excess skin and minimal ptosis of deep soft tissue, this procedure is effective. However, the reverse, namely, a heavier patient with ptosis of deep tissue, is a poor candidate. The inherent disadvantage is that skin placed under tension to support heavy underlying soft tissue tends to stretch, leading to a loss of surgical effect. Furthermore, excess skin tension flattens the face and may lead to widened scars or compromised skin flaps.

**Deep Subcutaneous Face Lift**

The deep subcutaneous lift involves a dissection plane immediately superficial to the SMAS; this generates a thick skin flap that carries all the superficial facial fat in the same direction as the skin (Fig. 10). The advantages are that the flap is robust and there is no penetration of the SMAS, theoretically removing the risk of facial nerve injury. The fat on the underside of the flap can be contoured and also sutured to underlying structures. The disadvantages are that the flap is unidirectional (skin and fat move together), and fixation depends on suture tension in fat and skin.

**Subcutaneous Face Lift with Suture**

**Manipulation of Superficial Fat and SMAS**

Once surgeons were able to raise a subcutaneous face lift flap, it became apparent that facial shape could be changed and stability achieved if sutures were used to manipulate and fix the underlying soft tissue. Numerous variations of this theme have evolved. Using dissolving or permanent sutures, the superficial fat is infolded on itself, drawing fat from the lower face into the midcheek. This technique is most effective when the sutures are placed into the mobile SMAS anterior to the parotid. Multiple sutures with customized vectors can be used. Proponents claim long-lasting results, without the need for more invasive, deeper dissection.

A variation of this method is the minimal access cranial suspension, which itself was derived from the S-lift, a procedure using a short anterior scar. Instead of individual plication sutures, this technique uses long suture loops that take multiple small bites of soft tissue. Some of these bites are placed strategically into the SMAS and platysma. The loop sutures are fixated to the deep temporal fascia just superior to the zygomatic arch and anterior to the ear (Fig. 11).

The advantages of all SMAS suturing techniques are the same as those of the subcutaneous face lift, with the additional advantage of reshaping the face using deep soft-tissue sutures rather than with skin tension alone. The direction of deep tissue pull can be different from the skin, and skin tension need not be as great. Potential disadvantages include the chance of catching a facial nerve branch with a deeply placed suture and the concern that sutures...
Subcutaneous Face Lift with SMAS Removal (SMASectomy)

The SMASectomy procedure involves the removal of a strip of SMAS and overlying fat, with direct suture closure. This popular method offers the security of direct suture fixation between two cut surgical edges, without the risk of a deep plane dissection (Fig. 12). Disadvantages include the possibility of cutting a facial nerve branch (if the SMAS removal is performed anterior to the parotid) and the fact that the malar fat pad is not detached before traction is applied to it, perhaps limiting its long-term fixation.

The Skoog Procedure

Tord Skoog, in 1974, published his method of raising skin, subcutaneous fat, and the SMAS as a single flap. This thick, robust flap contains stretch-resistant material (the SMAS), with the promise of a better, more long-lasting result. The disadvantages are that the dissection is in a deeper, more dangerous plane, the skin and deep tissues move in only one direction, and the effect in the anterior face may be limited. It was subsequently found that the anterior tissues can be tethered by the SMAS attachment to the lip elevators: zygomaticus major and minor, and levator labii superioris. To overcome some of these shortcomings, multiple variations have been developed (Figs. 13 and 14). Disadvantages of these variations are the risks of deep plane dissection, and a longer learning curve for surgeons.

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Fig. 11. Illustration showing the minimal access cranial suspension lift with loop sutures tethering soft tissue to the deep temporal fascia. (Reprinted with permission from Tonnard PL, Verpaele AM, Morrison CM. MACS face lift. In: Aston SJ, Steinbrech DS, Walden JL, eds. Aesthetic Plastic Surgery. London: Elsevier; 2009:138.)

Fig. 12. Illustration showing an SMASectomy with vectors of advancement. [Reprinted from Stuzin JM. MOC-PSSM CME article: Face lifting. Plast Reconstr Surg. 2008;121(1 Suppl): 1–19.]
Subcutaneous Face Lift with Separate SMAS Flap

To separate the direction of movement of the skin and the SMAS, the sub-SMAS dissection principle has been used in conjunction with a subcutaneous dissection, resulting in a two-layer face lift. Many different variations have emerged (Fig. 15). (See Video 4, in which the SMAS flap is raised in the midcheek, available in the “Related Videos” section of the full-text article on PRSJournal.com or, for Ovid users, at http://links.lww.com/PRS/A421.)

By raising the subcutaneous flap first, and then raising a completely separate SMAS flap, there is the flexibility of two different vectors of movement, plus the advantage of firm fixation by means of the SMAS, with minimal tension on the skin. Disadvantages are the added dissection in creating two surgical planes, the risks associated with deep plane dissection, and a longer learning curve for surgeons.

Subperiosteal Approach

Paul Tessier, in 1979, first presented his concept for a subperiosteal approach using craniofacial principles to elevate facial tissue. Variations were developed, but it was not until the introduction of the endoscope that surgeons widely adopted this concept.

Approaching from the temple, the midface can be dissected in either the subperiosteal or the supraperiosteal plane. Additional undermining can be accomplished through the upper

Fig. 13. Illustration showing Hamra’s original composite face lift flap, with orbicularis, malar fat, and platysma raised in continuity with overlying skin. (Reprinted from Hamra ST. Composite rhytidectomy. Plast Reconstr Surg. 1992;90:1–13.)

Fig. 14. Illustration showing Barton’s “high SMAS,” with cheek soft tissue raised along with overlying skin. (Reprinted with permission from Barton FE Jr, Meade RA. The ‘HIGH SMAS’ facelift technique. In: Aston SJ, Steinbrech DS, Walden JL, eds. Aesthetic Plastic Surgery. London: Elsevier; 2009:133.)

Fig. 15. Illustration showing Stuzin’s extended SMAS, with malar fat being raised in continuity with the midcheek SMAS. The skin flap is moved along a vector that is less vertical than the SMAS vector. (Reprinted with permission from Stuzin JM. Extended SMAS facelift: Restoring facial shape in facelifting. In: Aston SJ, Steinbrech DS, Walden JL, eds. Aesthetic Plastic Surgery. London: Elsevier; 2009:92.)
buccal sulcus. The advantages of a subperiosteal dissection are that it is deep to the facial nerve branches, there is a short incision, and harmonious lifting of the midface and lateral brow is possible. Disadvantages include the additional technology involved, a limited effect in the lower face/neck region, and minimal effect on facial skin.

**ADJUNCTIVE TECHNIQUES**

**Malar Fat Pad Lift**

Elevation of the large malar fat pad restores the appearance of cheek fullness below the infraorbital rim and over the malar prominence. This structure may be approached by means of the temple, the lower lid, or through a face-lift incision. If a face lift is used, there are several options for elevating the fat pad. It can be identified through a subcutaneous flap and simply sutured. It can be freed from underlying muscle (orbicularis oculi and zygomaticus major) but left attached to overlying skin. It can be freed from both surfaces (skin and underlying muscle) and raised as part of a large SMAS flap (Fig. 16). Alternatively, it can be freed from its deep surface, using the skin as a carrier. To accomplish this, Aston has described the finger-assisted malar elevation procedure (Fig. 17). [See Video 6, in which the raising of the malar fat pad along with the orbicularis oculi (finger-assisted malar elevation procedure) is described, available in the “Related Videos” section of the full-text article on PRSJounal.com or, for Ovid users, at http://links.lww.com/PRS/A422.]

[Video 4](http://links.lww.com/PRS/A421)
Fat Grafting

Although soft-tissue elevation can restore fullness to the middle third of the face, it is evident that tissue shifts alone will not always restore the loss of fat that occurs with aging. Techniques for the injection of fat have been improving steadily, making the procedure more predictable. In the middle and upper thirds of the face, there is a high rate of fat graft, but long-term results are less reliable around the vascular, mobile lips. Specific areas that are amenable to fat grafting are the upper lid sulcus, the tear trough, the midfacial groove, and the malar prominence. Grafting the midfacial groove involves augmenting both superficial and deep fat compartments; deep fat augmentation below the orbital rim will aid in correction of the V deformity associated with formation of the tear trough. This grafting can be performed independently or in combination with face-lift surgery. (See Video 7, in which fat grafting is demonstrated in the midcheek, over the malar prominence, and in the V deformity of the infraorbital rim region, available in the “Related Videos” section of the full-text article on PRSJourn.com or, for Ovid users, at http://links.lww.com/PRS/A424.)

Transblepharoplasty Midface Lift

In an attempt to lift the tissue immediately inferior to the infraorbital rim (the midface), an approach through the lower lid has evolved. This involves a subciliary or transconjunctival incision followed by a subperiosteal dissection over the face of the maxilla. After inferior periosteal release, the elevated cheek mass can be fixated adjacent to the lateral orbital rim or, using a vertical vector, to the infraorbital rim. Another variation involves a supraperiosteal dissection. The advan-

Video 6. Video 6, in which the raising of the malar fat pad along with the orbicularis oculi (finger-assisted malar elevation procedure) is described, is available in the “Related Videos” section of the full-text article on PRSJourn.com or, for Ovid users, at http://links.lww.com/PRS/A423.

Fat Grafting

Although soft-tissue elevation can restore fullness to the middle third of the face, it is evident that tissue shifts alone will not always restore the loss of fat that occurs with aging. Techniques for the injection of fat have been improving steadily,
tages of the lower lid approach include an imperceptible incision and a more vertical vector of lift applied to the critical midfacial soft tissues. Disadvantages include the potential for lower lid retraction and a steep learning curve for surgeons to feel comfortable with the approach.74

**FACE-LIFT INCISIONS**

Except for the isolated temple and lower eyelid approaches, all face lifts require an extensive incision around the ear for which there are many subtle variations (Fig. 9). In the temple, the incision can be placed in the hair, at the anterior hairline, or by means of a hybrid of the two, with an incision in the hair plus a transverse extension at the base of the sideburn. The advantage of the incision in the hair is that it is hidden, but when the flap is advanced, there will be some shift in the anterior hairline and base of the sideburn. If the incision is placed at the anterior hairline, the scar is more visible, but there will be no shift of the hairline. A transverse incision at the base of the sideburn ameliorates much of the hairline shift and preserves a largely hidden scar.

Anterior to the ear, the incision can be pretragal or on the tragal edge. The advantage of the tragal incision is that it is hidden, but care must be taken to create a thin flap of skin to cover the tragus to simulate a normal tragal appearance. Furthermore, as pointed out by Connell,75,76 the normal tragus has the shape of a rectangle, an appearance that can be replicated by making a short transverse cut at the inferior end of the tragal incision. In some cases, a pretragal incision is preferred; an example is a patient with thick discolored facial skin that will appear out of place when covering the tragus. In men, a pretragal incision may be preferable because of thick bearded skin, although it is possible to manage this issue by removing hair follicles before drawing the cheek skin up onto the tragus.

If there is minimal laxity of neck skin, a “short scar” approach may be used.45,77 This involves the full anterior portion of the face-lift incision but only a short posterior extension at the earlobe to deal with bunching of skin. Conversely, when there is significant excess neck skin, and a posterior shift is anticipated, a posterior incision will be required. Multiple variations for the posterior incision have been devised, ranging from a low incision following the posterior hairline, to an extremely high incision that courses almost vertically. A compromise between the two is usually preferred, with the incision following a lazy-S configuration, arching high over the mastoid, along the hairline for 1 to 2 cm, and then angling into the posterior hair. In this area, it is important to avoid excess tension.

Closure of face-lift incisions must be performed with precision and thought. Specific issues to be dealt with include the degree of tension, handling of the sideburn, insetting of the earlobe, and treatment of the postauricular hairline. (See Video 8, in which careful closure of the face-lift skin incision is demonstrated, available in the “Related Videos” section of the full-text article on PRSJournal.com or, for Ovid users, at http://links.lww.com/PRS/A425.)

**NECK SURGERY**

Like the face, to devise a surgical plan, the layers of the aging neck must be assessed independently. Superficially, the skin of the neck is typically thinner and less elastic than facial skin. With age, further skin laxity develops, causing vertical wrinkles and pleats. These can be corrected by tightening the skin in a lateral-oblique, or superior-oblique direction. Subcutaneous fat often accumulates with age and may be dealt with using open resection through a submental incision or through closed liposuction.78

Deep to the subcutaneous fat are the paired platysma muscles, which have well-recognized variations in their anatomy: the majority (roughly 75 percent) of necks exhibit interdigitation of the two platysma muscles for the first 1 to 2 cm superiorly.79,80 The remaining 25 percent either overlap extensively or do not overlap at all. With
age, there is a loss of tethering of the platysma muscles to the deep cervical fascia. As a result, the platysma falls away from the cervical mandibular angle, contributing to the obtuse angle of age. Visible bands in the anterior neck usually represent the leading edge of the underlying platysma muscles. These bands are considered either static (present at rest) or active (only present on animation). There are two different options to deal with platysma bands in the anterior neck. One approach involves mobilizing the posterior borders of the paired platysma muscles, drawing them in a superior oblique direction and fixating the muscle to firm fascia (parotid cutaneous ligament or the Lore fascia) (Fig. 18).81,82 Alternatively, the paired platysma muscles can be drawn medially and approximated centrally.83,84 Conventional access is a 2- to 3-cm incision placed adjacent to or in the submental fold (Fig. 19).

Through a submental incision, a number of anatomical structures can be addressed: subcutaneous fat, subplatysmal fat, the platysma muscles, and the submandibular glands. Fat can be removed directly. A common approach is to approximate the anterior platysma edges centrally and to perform a partial transection inferior to the line of sutures. Some surgeons advocate multiple rows of sutures to aggressively advance the platysma muscles medially—the corset platysmaplasty.85

Excess subplatysmal fat can be excised before muscle approximation. Hypertrophic digastric muscles can be thinned. Ptotic submandibular glands can be repositioned86 or partially excised.87 In some face-lift cases, only minimal correction of the neck is required. For example, in the younger person with good quality skin, the neck can be treated as an isolated procedure using a number of different techniques: isolated liposuction, liposuction plus platysma plication and transection, or a retroauricular approach to tighten the platysma posteriorly.88 If there is skin laxity beyond the ability to retract after submental surgery, it can be tightened with a retroauricular incision or with a full face-lift incision.

In some older men, the preferred procedure may be a direct neck excision of excess skin, leaving a scar in the midline. This can be accomplished with a zigzag pattern or with a vertical ellipse broken up with two or more Z-plasties89 (Fig. 20).

**COMPLICATIONS**

**Hematoma**

Postoperative hematoma is the most common face-lift complication, with a reported incidence of 2 to 3 percent in women and up to 8 percent in men.90 The incidence in men can be reduced to approximately 4 percent with careful attention to postoperative blood pressure control.91 Numerous variables have been explored, including dressings, drains, fibrin glue, and platelet gel. A positive association has been found when simultaneous open neck surgery is performed, with patients taking platelet inhibitors such as acetylsalicylic acid and/or nonsteroidal antiinflammatory medications, with hypertension in the postoperative period, and with the rebound effect when epinephrine wears off postoperatively.92,93 An expanding hematoma is most likely to occur in the first 24 hours.

*Fig. 18.* Cadaver dissection showing posterior traction on the platysma. (Reprinted from Labbé D, Franco RG, Nicolas J. Platysma suspension and platysmaplasty during neck lift: Anatomical study and analysis of 30 cases. Plast Reconstr Surg. 2006;117;2001–2007; discussion 2008–2010.)
hours after surgery and should be evacuated promptly.

Sensory Nerve Damage

Sensory innervation of the face-lift flap is always damaged, although the effects are self-limiting, usually resolving in 12 months. The commonest nerve to sustain damage during face lift is the great auricular nerve, which should be repaired if the injury is identified intraoperatively.

Motor Nerve Damage

Damage to facial nerve branches usually will go unnoticed by the surgeon until muscle paralysis

Fig. 19. Medial suturing of paired platysma muscles with partial transection of the anterior border. [Reprinted with permission from Stuzin JM. MOC-PSSM CME article: Face lifting. Plast Reconstr Surg. 2008;121(1 Suppl):1–19.]

Fig. 20. An elderly man with open fat contouring, platysma plication, and Z-plasty after skin excision.
is identified postoperatively. Nerve dysfunction in the first few hours after surgery is common and is attributable to the lingering effects of local anesthetic. Dysfunction identified days later may be attributable to traction, cautery, sutures, or surgical division. The most commonly injured branches are thought to be the buccal branches, although long-term sequelae are rare because the buccal and zygomatic branches are multiple and interconnected. Conversely, the temporal and marginal mandibular are terminal branches; damage to them can result in a permanent deformity.

Unsatisfactory Scars

Improper incision placement can lead to obvious scars, distortion of the ear, and unnatural shifting of the hairline. Excessive tension can lead to loss of hair, depigmentation, and widened scars. Some scars can be improved with scar revision at a later date when tissues have relaxed. Hypertrophic scars can be helped with steroid injections.

Skin Loss

Face-lift dissection creates a large, relatively thin, random pattern skin flap that is then placed under tension; it has a remarkable ability to survive. Factors that can contribute to the avascular loss of skin include an overly thin flap dissection, excessive tension, hematoma, constrictive dressings and, the most damaging of all, smoking. Skin necrosis should be dealt with conservatively; the majority of such cases will eventually heal spontaneously.

Infection

Infection is a rare problem with face-lift surgery, reported in the range of 1 percent. Treatment is with appropriate wound care and antibiotics.

CONCLUSIONS

Face-lift surgery has evolved in parallel with our understanding of the anatomy of facial aging. For over a century, innovative surgeons have developed a wide variety of approaches to treat age-related changes. Excellent results have been demonstrated with all of these surgical techniques. There is no one correct way to perform a face lift. Rather, surgeons should be familiar with many different approaches to individualize their approach for an overall, age-appropriate facial rejuvenation.

PATIENT CONSENT

The patient provided written consent for the use of her images.

REFERENCES