

Chapter 45

Pearls and Pitfalls of Facelift Surgery



Todd Hanna

Abstract Not all facelifts are for age-related changes. Young individuals with “doughy” or heavy cheeks or after significant weight loss can be appropriate candidates for face and/or neck lifts. Typically, however, a facelift is best suited for skin and soft tissue laxity, most commonly due to aging.

Definition and History

- Cervicofacial rhytidectomy: The excision of wrinkles in the skin of the face and neck (Fig. 45.1a, b).
 - Misnomer: Rhytids are not “excised”; they are redraped.
 - Commonly known as a face and neck lift, comprehensive facelift, or “full” facelift.
- Historically, it included periauricular and coronal incisions, hence the term “full” facelift.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/978-3-031-47307-4_45.

T. Hanna (✉)

Aesthetic Face and Jaw Surgery, Oral and Maxillofacial Surgery, Microvascular Head and Neck Reconstruction, Hanna Face and Jaw, PC, NY, USA

OMFS-Head & Neck Surgery, Mount Sinai Health System, New York, NY, USA

e-mail: dr.hanna@toddhannamdds.com

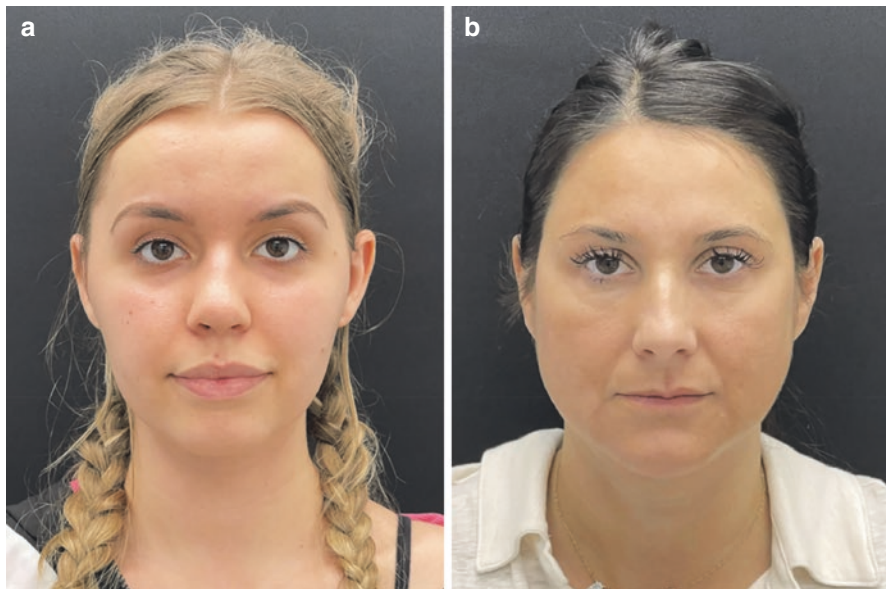


Fig. 45.1 (a, b) “Doughy” or heavy cheeks. These cases are best managed with lifting and buccal fat pad reduction procedures

- Modified and related techniques include the mini/short-scar facelift, mid-facelift, neck lift/submentoplasty, deep plane and dual plane face/neck lift, endoscopic facelift, jaw surgery facelift, and many others.
- Throughout the early 1900s, various skin-excision techniques were documented.
- In 1973, Skoog documented the first variation of a “deep plane” technique via elevating within the subplatysmal plane while leaving skin attachments intact.
- In 1976, Peyronie and Mitz presented the SMAS technique, the predecessor of the common facelift performed today.
- Throughout the 1970s–1990s, variations of SMAS management techniques were described, such as plication, imbrication, and SMASectomy.
- In 1990, Hamra described a more formal deep plane technique.
- The extended deep plane, dual plane, and endoscopic procedures have recently become popular.

Anatomy and the Aging Face and Neck

- Evaluation of directly involved areas: cheeks (malar and buccal fat pads), ears and earlobe attachments, jowls, submental region (submandibular glands, digastric muscles, sub- and supra-platysmal fat, platysmal decussation, and banding), nasolabial folds, and marionette lines.

- Evaluate associated areas, skin quality, upper and lower eyelids, upper lip, commissures and perioral region, and brow position.
 - Ignoring associated areas needing treatment will create a disharmonious result, as all areas of the face and neck should relate to one another.
- Common adjunctive procedures done with a face/neck lift are blepharoplasty, brow lift, skin resurfacing (laser or chemical), and upper lip lift.
 - Laser resurfacing should be performed prudently in the periphery of the skin flaps, as this area is more susceptible to necrosis.
- Anatomy layers: skin, lipocutaneous plane, SMAS/platysma, parotidomasseteric fascia, and deep plane structures (parotid gland, facial nerve branches, facial muscles).

Preoperative

- Listen:
 - The majority of the initial consultation should be listening to the patient's goals, desires, and expectations.
- Ask:
 - Get a feel for their understanding of their own anatomy and the requested procedure.
 - Do they have a support system?
 - Can they cope with the postoperative period and healing process?
 - Do they have external motivators?
 - Do they display body dysmorphic signs?
 - How have they fared with prior aesthetic procedures?
- Explain:
 - Review their preoperative photographs. Quality photographs are paramount. Standardize lighting, camera, and angles. It is proper not to use flash.
 - Review cases of patients with similar anatomy. Pay attention to any feedback from patients here.
 - Review different treatment options with pros and cons.
 - Review risks, benefits, and discomforts clearly.
- Illustrate:
 - Mark the incision on a patient's photograph (e.g., on a tablet), or demonstrate with a mirror (Fig. 45.2a, b).

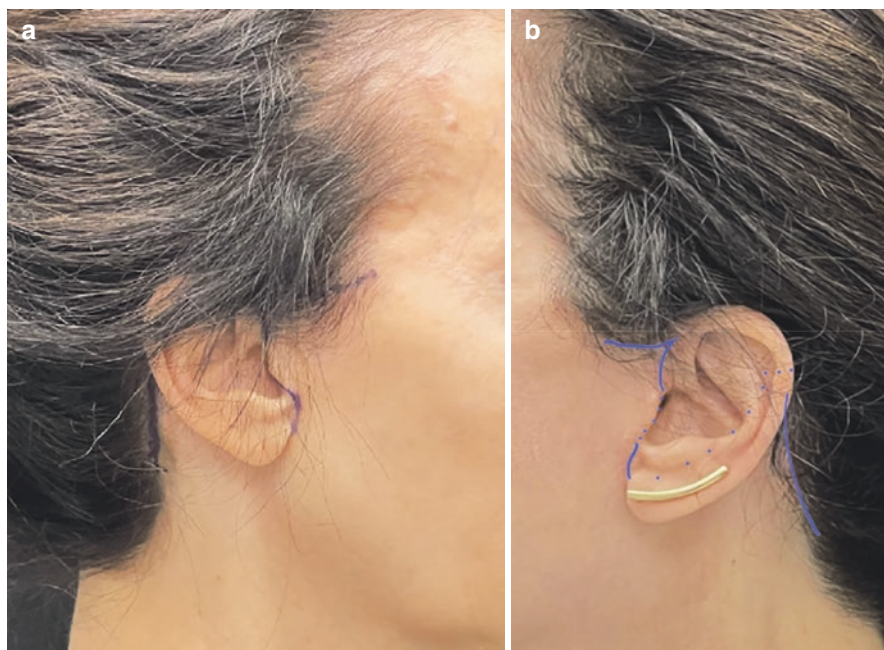


Fig. 45.2 (a, b) Markings (a, on patient; b, on a tablet)

- Review:
 - Encourage them to bring a friend or relative before surgery to review the procedure and act as a “second set of ears.”
 - Establish home nursing for wound care and drain management if used.
 - Out-of-town patients must stay in town for 10–14 days.
 - Verbalized and written no-smoking prerequisite. Smokers must refrain for 3 weeks pre- and 3 weeks post-surgery.

Setup and Anesthesia

- Instrumentation is variable but commonly includes the following:
 - Head light, rulers and calipers, facial liposuction cannulas (used on wall suction), retractors, skin hooks, periosteal elevator, #11 and #15 blade scalpels, facelift scissors (e.g., Kaye), curved and straight fine scissors (e.g., Iris or Webster), Mayo scissors, Adson and Brown pickups, Cushing pickups, DeBakey pickups, radio wave or electrosurgical unit with Colorado fine tip and insulated bipolar, various sized clamps (mosquito, hemostat, Adson, tonsils), needle holder (fine and long), smooth needle holder for holding stabilizing suture

under tension during knot placement (e.g., Webster), stapler, sutures (3-0 Monocryl, 4-0 Monocryl, 5-0 gut, 5-0 nylon), gauze, hair comb, various suction (Yankauer, tonsil, vascular, Frazier), tumescence (lidocaine, epinephrine, normal saline) with 22 gauge spinal needle and 60 mL syringe or Klein pump, 10 French Blake drains, hair wash (H₂O₂, shampoo, normal saline) and basin, head wrap (Kerlix, Coban, bacitracin, or mineral oil laced gauze around incisions), soft neck collar, and face bra (placed when head wrap is removed).

- Anesthesia will vary per patient and surgeon.
 - General anesthesia can cause elevated intrathoracic pressure during extubation and may provoke bleeding with subsequent hematoma.
 - Local anesthesia may limit the extent of tissue dissection possible.
 - IV sedation offers the most reasonable degree of sedation with less risk of hematoma and DVT, in the author's opinion.
- Markings should be done in a pre-op setting with the patient watching in a mirror and upright.
- Incision design will vary depending on lift type, surgeon preference, and patient anatomy; however, certain elements are ubiquitously accepted. Presented is the author's standard incision(s) with rationale:
 - Temporal tuft preserving with extreme bevel and undulating pattern at the periphery of sideburn to allow transfollicular hair growth (Fig. 45.3a, b).
 - May extend vertically with burrow's triangle for temporal standing cone/bulge (Fig. 45.4a–e).
 - Preauricular transition begins hidden behind/posterior to the anterior helix.
 - The ear is pushed forward with the back end of a scalpel handle to find the natural delineation of the helical attachment.
 - Tragal edge-type design is typically preferred by the author over pre-tragal, even in male patients (in which case electrolysis for removing beard hair can be employed postoperatively). It is important to carefully dissect the skin of the tragus, leaving some soft tissue over the cartilage. Skeletonized cartilage tends to retract.



Fig. 45.3 (a, b) Extreme bevel (transfollicular) in the hairline

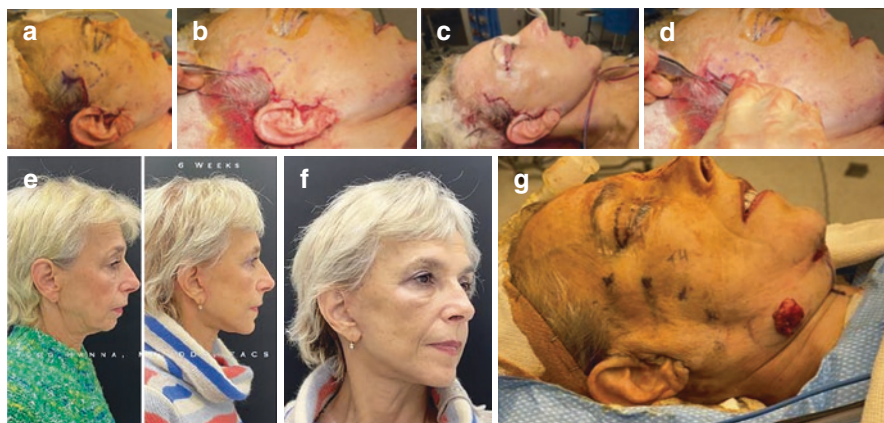


Fig. 45.4 (a, b, c, d) Temporal bulge management with Burow's triangle; (e, f) at 6 weeks post-op deep plane face and neck lift with submandibular gland reduction, upper and lower blepharoplasty, and genioplasty); (g) portion of the submandibular gland below the inferior border removed through the submental incision. Note that only a part of the gland should be removed

- A “notch” just above the lobe can be used, then releasing the lobule into the postauricular crease.
- Staying within the postauricular crease, rather than onto the concha, is preferred as key sutures will prevent retraction of the scar inferiorly.
- At the level where the pinna is closest to the posterior hairline, the incision is carried across the mastoid.

For short-scar mid-facelifts, the incision stops here.

For comprehensive face/neck lifts, the author prefers to carry the incision into the posterior cervical hairline, again using an extreme bevel transfollicular approach.

If a submentoplasty is employed, a 2–3 cm incision made approximately 5 mm posterior to the submental crease is used. Greater distance is used if a chin advancement (genioplasty or chin implant) is done, as this may advance the incision, making it less conspicuous.

- Mark midline lower lip, chin, and neck.

Helps to confirm equal pull tension bilaterally.

Outline zones of liposuction: Jowls and submental landmarks (inferior border, SCM muscles, the superior edge of the thyroid cartilage).

Surgical Technique for Standard Comprehensive Cervicofacial Rhytidectomy

- Apply a tumescent solution in the submental zone.

- Allow 5 min for epinephrine to take effect for excellent hemostasis.
- Make stab incision within submentoplasty marking for liposuction cannula.
- Pre-dissect in lipocutaneous plane with dissector or spatulate cannula, not on suction.
- Begin liposuction using sequentially progressive cannulas until a smooth layer of skin and fat can be palpated.
- Avoid liposuction of the jowl from a submental approach, as it will put the marginal branch of the facial nerve at risk of being compressed between the cannula and the inferior border.
- Next, complete the submental incision and dissect it in the lipocutaneous plane with Kaye scissors and a right-angle retractor.
 - Identify the medial border of the platysma and selectively excise minimal subplatysmal fat being mindful to avoid a cobra neck deformity.
 - You can track in the subplatysmal plane laterally to access and reduce the submandibular glands as needed through this incision, as is the author's preferred approach. An alternate approach to the submandibular gland is through the preauricular incision (Fig. 45.4g).
 - The oromandibular ligaments can be released here as well.
 - Plication, or approximation, of the medial platysma is then made using 2–0 Monocryl suture in a corseted fashion.
- Attention is then drawn to the right or left face, and the tumescent solution is administered. It is important to include the mastoid region while injecting as this will help hydro-dissect this tenacious zone making your dissection easier.
 - The incision is made with a #15 blade, and scalpel dissection is used to elevate the first 2–4 cm of the lipocutaneous plane, particularly in the tragal and postauricular zones where the skin is very thin and fixed to deeper layers.
 - The desired extent of dissection is carried out within the lipocutaneous plane with Kaye scissors. Connection should typically be made into the submental dissection to release all retaining ligaments.
 - Liposuction of the jowl is performed from this approach.
- The SMAS should be manipulated to assess laxity and ideal vectors.
 - Incision into the SMAS is made approximately 2 cm anterior to the tragus.
 - The author prefers a “lazy Z-type” SMASectomy pattern that is horizontal below the zygoma, vertical in the preauricular zone, and diagonal along the lateral platysma to allow for ideal vectors of pull (Fig. 45.5).
 - At this point, one can enter the deep plane into the face and neck below the SMAS and lateral platysma if indicated.
 - Caution must be taken to identify and protect the facial nerve branches in deep plane techniques as well as recognize other deep structures such as the parotid gland and master muscle (Fig. 45.6a–d).
 - SMASectomy is performed with scissors or electrocautery, exposing the underlying parotidomasseteric fascia.

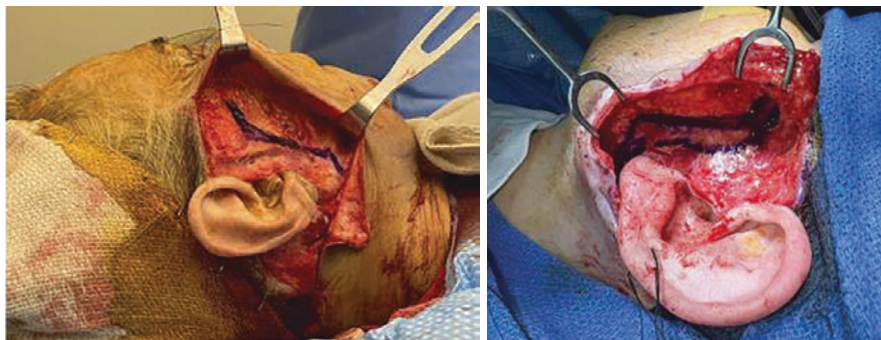


Fig. 45.5 SMASectomy “lazy Z” design

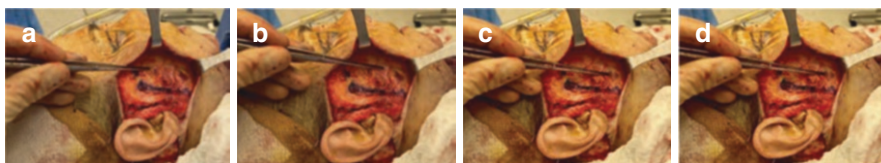


Fig. 45.6 (a, b, c, d) Deep plane demonstrating the zygomatic and buccal branch of the facial nerve, the masseter muscle, and a part of the parotid gland

- SMAS resuspension sutures, 2-0 Monocryl, are first placed at the jawl and then progressed to the temporal and mastoid regions. Typically 8–10 SMAS sutures are placed in interrupted buried horizontal mattress fashion (Video 45.1).
- The tension of skin redraping should largely be carried by the SMAS sutures.
- The lipocutaneous flap should be passively laid into the ideal vector and position.
- Key sutures, 4-0 Monocryl, are placed on either side of the helix and pinna and above and below the tragus.
- The postauricular vector is typically more vertical than the preauricular vector, cradling the ear.
- The skin is thinned and left in excess at the tragus to avoid a “thick-skinned” appearance at the tragus, which naturally has thinner skin (Fig. 45.7a–c).
- The ear lobe is then passively delivered, and the skin is tailored. The cut end of the ear lobe can be used as a guide for skin excision in this area.
 - Avoid over-resecting here, as the lobe will retract with healing and gravity when upright and can result in a pixie ear deformity.
 - Avoid anterior or posterior lobe position, and refer to preoperative photos here.
- If a more vertical vector is required at the temporal zone, the author prefers a Burow’s triangle excision well hidden into the hairline to avoid a dog ear or temporal bulge, as aforementioned.

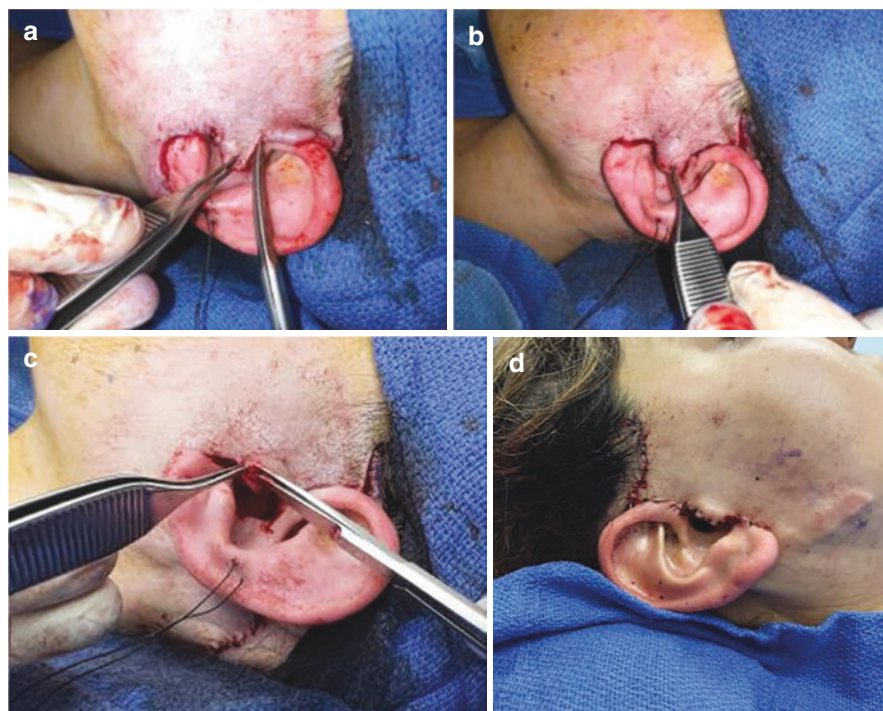


Fig. 45.7 (a, b, c) Trimming and thinning the tragus. (d) Final closure

- 10 French Blake or size 3 x 7 mm Jackson-Pratt suction drains extend along the cheek and into the submentum, exiting posteriorly into the hair-bearing scalp.
- Skin closure is performed with 5-0 nylon in running fashion in the preauricular region. One to two interrupted mattress sutures are placed at the lobe as this area is prone to dehiscence from removing a shirt or pulling during sleep (Fig. 45.7d).
- 4-0 Monocryl is used for key and deep sutures.
- 4-0 gut is used in all hair-bearing zones; alternatively, one can use staples.
- The identical procedure is then performed on the contralateral side, being mindful of your midline marking for symmetrical pull.
- The hair is rinsed with H₂O₂ and shampoo and towel-dried.
- Bacitracin, Xeroform gauze, or mineral oil-soaked gauze is placed over the incisions, and a pressure dressing is applied using Kerlix and Coban.
- A soft neck brace is placed to restrict head movement for the first post-op week.
- The suction bulbs are secured to the patient's shirt and monitored in recovery until discharged home with nursing care.

Post-Op Care

- Management of PONV is imperative as retching can result in hematoma formation.
 - Anesthetic methods, as well as post-op steroids and Zofran, are standard.
 - Limiting narcotics is also important.
- Keeping blood pressure low post-op is also imperative to avoid hematoma.
- The pressure dressing is removed on POD 1, and bacitracin is reapplied to the wounds.
 - A face bra is placed and worn along with the soft neck brace for the first week.
- From weeks 2–4, the face bra should be worn at night and, when possible, during the day.
- The drain is removed when output is less than 20 mL in 24 h (typically 2–3 days).

Managing Complications

- Intraoperative:

- Bleeding.

Managed with diligent inspection after irrigating the field to find “occult bleeders.”

You can have anesthesia lightened or use Valsalva to increase blood or intrathoracic pressure prior to closure to help identify these.

Prudent use of bipolar electrocautery, being mindful of nerves and thermal injury to the skin flap.

Utilize drains and pressure dressing.

- Injury to the motor or sensory nerves.

Direct immediate repair if visualized under loupe magnification.

High-dose steroids and B-complex vitamins postoperatively in case of neuropraxia.

Some literature supports the use of gabapentin.

Refer to a facial reanimation specialist as needed.

Most neuropraxia is temporary and resolves in 60–90 days.

Can use Botox selectively on the unaffected side for symmetry during the recovery phase.

- Postoperative:

- Expanding hematoma.

- Will present as significant asymmetrical pain, ecchymosis, and firm swelling.
Open and evacuate early to avoid skin flap necrosis.
Compression.
- Seroma.
 - Aspiration and compression.
 - Commonly redeveloped.
- Neck banding and wash boarding.
 - Best prevented by the use of drains.
 - Treat with an aspiration of fluid in early stages.
 - Dilute steroid injections, warm compresses, and massage in later stages.
- Skin flap necrosis.
 - Causes include untreated hematoma, aggressive cautery and thermal injury to the skin flap, aggressive and thin skin flap elevation, excessive tension upon closure, poor patient selection such as smokers, pressure from eyeglasses, and aggressive skin resurfacing at the time of a facelift.
 - Manage with wound care.
 - Nitric oxide paste and HBO potentially have benefits.
 - May require resurfacing or scar revision when healed.
- Hypertrophic or poor scar formation.
 - Minimize tension upon closure.
 - Gentle soft tissue handling.
 - Meticulous skin closure.
 - Steroid, 5-FU, or laser treatment as needed.
 - Occasionally need surgical scar revision.
- Alopecia.
 - Minimize thermal injury to hair follicles.
 - Minimize undermining hair-bearing scalp.
 - Usually improves within 6 months.
 - Follicular unit hair transplants for areas that do not improve.
- Temporal balding.
 - Occurs from improper incision design.
 - Treat with follicular unit hair transplant.
- Retracted tragus.
 - Occurs from undercutting skin flap at tragus, resulting in tension upon closure.
 - Prevent by leaving excess skin here.
 - Treatment is a revision and redrawing skin flap.

- Pixie ear deformity.

Occurs from undercutting lobe attachment which retracts with gravity and natural contracture that comes with wound healing.

Treatment is a revision and redrawing skin flap.

- Residual skin laxity.

Most commonly seen in the submental area and jowl.

Small areas may be amenable to excision of skin (at submental incision), radiofrequency, or CO₂ laser for skin retraction.

Large areas need revision lift.

- Early relapse.

Usually results from insufficient deep sutures or early and excessive post-operative head/neck movement by the patient.

A soft neck collar for the first week postoperatively is helpful to prevent the latter.

- Extruded sutures and suture reactions.

Can be seen several months/years later.

Can be minimized by burying the knot deep in the SMAS and using slow-resorbable sutures.

Treatment requires the removal of extruded sutures and wound care.

- Sialocele and salivary gland fistula.

Most commonly results from partial submandibular gland excision.

Can also be seen from the parotid gland.

Placement of drains helps to minimize.

Treatment includes aspiration, compression, and medications such as Botox and anticholinergics.

Pearls

- Not all facelifts are for age-related changes.
- Preoperative preparation is key for successful results.
- Setting clear expectations and establishing a rapport with the patient are essential.
- Postoperative care is crucial in avoiding complications.
- Management of PONV is imperative, as retching can result in hematoma formation.

Pitfalls

- Learn how to manage complications intraoperatively and postoperatively since they can happen and affect the outcomes of surgery.
- Pay attention to “occult bleeders” intraoperatively.
- Judicious use of drains and compression dressing will minimize postoperative hematoma.
- Expanding hematoma must be drained to avoid skin necrosis.
- Avoid the use of excessive cautery since it will increase the risk of skin flap necrosis.

Typical results of short-scar (mini) lift (Fig. 45.8a–c) and comprehensive face and neck lift (Fig. 45.9a–c).



Fig. 45.8 (a, b, c) Short-scar mini lift (with custom angle implants and subnasal lip lift)



Fig. 45.9 (a, b, c) Comprehensive face and neck lift (with chin implant removal and geniotomy, temporal fat grafting, and upper blepharoplasty)

Further Readings

- Fedok FG, Lighthall JG. Evaluation and treatment planning for the aging face patient. *Facial Plast Surg Clin North Am.* 2022;30(3):277–90. PMID: 35934430. <https://doi.org/10.1016/j.fsc.2022.03.002>.
- Kaya KS, Cakmak O. Facelift techniques: an overview. *Facial Plast Surg.* 2022;38(6):540–5. Epub 2022 Jun 16. PMID: 35709719. <https://doi.org/10.1055/a-1877-9371>.
- Niamtu J III. *Cosmetic facial surgery*. 2nd ed. New York: Elsevier.