

Facial rejuvenation: A scarless technique

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A scarless facelift operation is the procedure of choice for facial rejuvenation. Emphasis is placed on the midfacial area to compliment the overall appearance of the face. Nasojugal folds are eliminated or improved. The cheek lift provides some augmentation in the malar area, which reduces the prominence of the nasolabial fold. Complications are minimal. The subperiosteal facelift operation is done via the lower eyelid blepharoplasty incision. Concurrent lower eyelid canthoplasty is done at the time of blepharoplasty to support the eyelid and to avoid postoperative ectropion.

Key Words: *Bitemporal lift; Midfacial; Scarless; Subperiosteal*

Rajeunissement facial : une technique sans cicatrices

RÉSUMÉ : Une rhytidectomie sans cicatrices est la technique de choix pour un rajeunissement facial. L'accent est mis sur la partie médiofaciale pour compléter l'apparence globale du visage. Les plis naso-jugaux sont éliminés ou améliorés. Le rehaussement des joues augmente légèrement la région malaire, ce qui réduit la prééminence du pli naso-labial. Les complications sont minimales. La rhytidectomie sous-périostée se pratique par le biais de l'incision de la blépharoplastie de la paupière inférieure. Une cantoplastie concomitante de la paupière inférieure est pratiquée au moment de la blépharoplastie pour soutenir la paupière et pour éviter un ectropion postopératoire.

The goal of facial rejuvenation surgery is to provide a youthful contour to an ageing face. Facelift surgery has gone through a variety of modifications during the past 20 years. Initially, only skin lifts were performed, then modification of the submuscular aponeurotic system (SMAS) and platysma surgery. This endangered the facial nerve and parotid gland. Subsequently, adjunctive procedures were done that attempted to improve difficult areas of correction (Figure 1). Extended SMAS operations were done to correct the nasolabial fold, and on some occasions dermal grafting was done in the nasolabial fold area to reduce the prominence of the fold. Hoping to achieve long lasting results in rejuvenation of the neck, neck contouring surgery was further enhanced by platysmaplasties, both anteriorly as well as posteriorly, with liposuction. All of these procedures have demonstrated some beneficial results but with less than ideal results in the nasolabial fold and jowl areas, particularly in the junction between the chin and cheek (Figure 2). Long term follow-up has demonstrated scars that have drifted

down in the retroauricular and occipital areas, leaving tell-tale signs of previous facelift surgery.

Facial rejuvenation with the minimal scar technique is presented to show improved facial results with minimal or no scars in the retroauricular area of the face. The face is evaluated by dividing it into three parts, the upper, middle and lower thirds of the face. By enhancing youthfulness in the upper third of the face, an endobrowlift can be considered to correct the corrugator and procerus muscles with medial brow elevation centrally, while the lateral brow position is improved by a lateral temple lift, thus enhancing the upper third of the face. The midfacial correction is achieved by lower eyelid blepharoplasty with canthoplasty and a subperiosteal facial dissection, as initiated by Hester (1), aiming to improve the nasolabial fold and to correct the lower cheek and chin jawline using this technique (Figure 3). This not only improves the nasojugal fold, but also repositions the cheek pad onto the malar area, giving a malar augmented look while eliminating the jowl on the cheek-chin junction (1).

The lower third of the face is improved by an anterior-platysmaplasty via the submental approach with concomitant liposuction, which contours the anterior part of the neck. The posterior occipital area is improved by an occipital scalp incision with posterior platysmaplasty and platysma-mastoid suspension with sutures. This eliminates scars in the retro-

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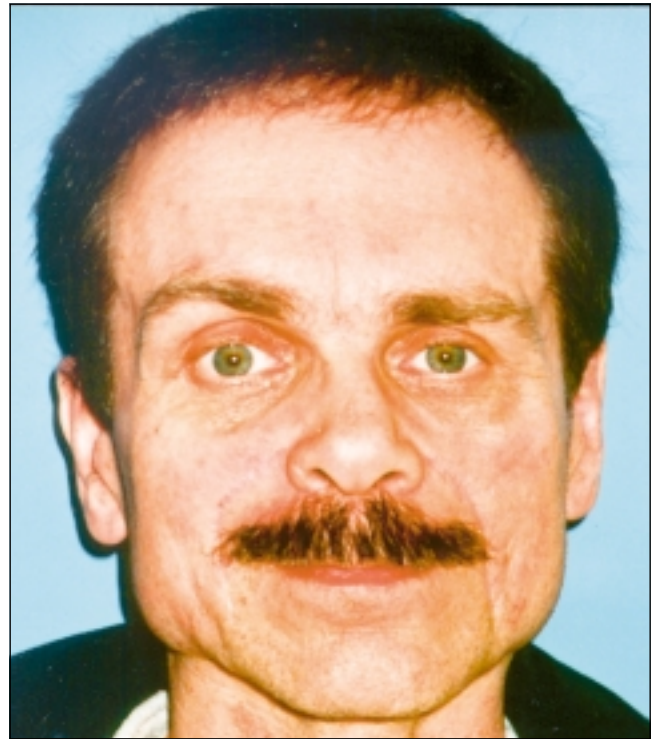
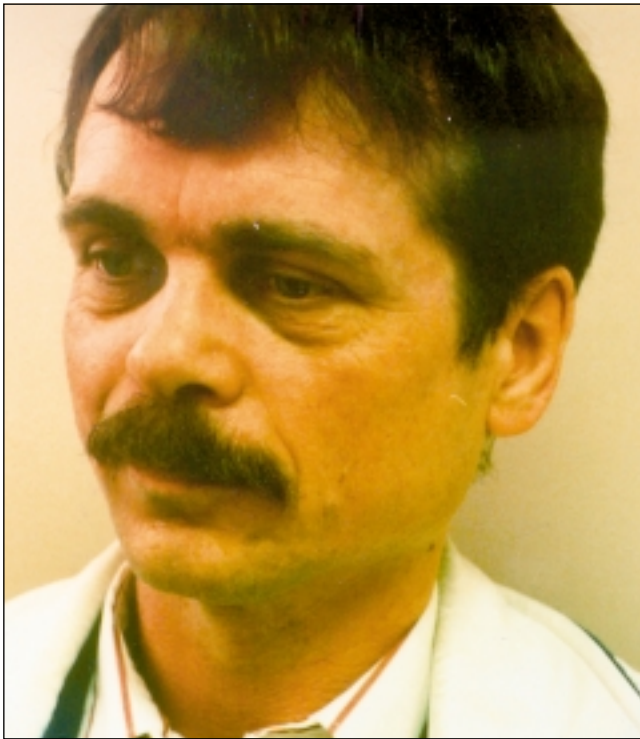


Figure 1) Top left Before facial rejuvenation. **Bottom left** After nasolabial fold excision. **Above** Eight years later the scars are depressed and visible

auricular and postauricular areas. This procedure is preferred in Asian and black individuals, and in patients who have keloidal tendencies.

Midthird facial improvement is achieved by a subperiosteal lift via the lower blepharoplasty incision. The surgical procedure is done via an infraciliary incision, where skin and muscle flap is elevated and tissue is dissected to the orbital rim (1). The zygomatic arch fascia is incised, subperiosteal

dissection is done down to the nasolabial fold, medially towards the lateral nasal bone, onto the maxilla, anteriorly around the infraorbital rim, up to the upper gingival sulcus and laterally up to the masseteric fascia.

An index finger is then introduced in the subperiosteal plane to loosen up any residual attachments, allowing mobilization of the whole cheek fat pad towards the deep temporal fascia (1-4). The suborbicularis oculi fat tissue is draped over the anterior part of the maxilla, which achieves some orbital rim augmentation. This mobile cheek tissue is pulled superiorly, slightly laterally, up to the zygomatic arch, and one suture is used to attach it to the deep temporal fascia for suspension (1). A second suture is placed lateral to the orbital rim for lateral support. This reoriented tissue improves the nasojugal fold, repositions the cheek fat pad and augments the anterior part of the maxillary area while reducing the prominence of the nasolabial fold. The excess skin is excised just above the lower eyelid incision and closed with a subcuticular suture with 6.0 Prolene (Ethicon, Somerville, New Jersey) (1). This procedure is performed in conjunction with the lower eyelid blepharoplasty. If the tone in the lower eyelid is good, canthoplasty is unnecessary. The snap test is performed by pulling the lower eyelid from the globe and assessing the retraction of the lid. If no lid retraction is present with the snap test, the inferior lamella of the lateral canthal ligament is incised and attached to the lateral orbital rim

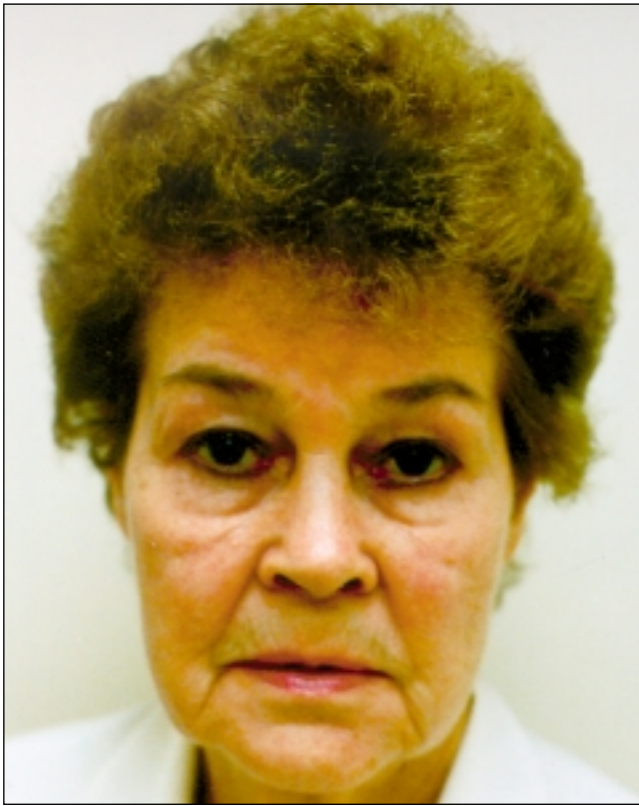


Figure 2) Left Before facial rejuvenation. Right After extended facelift jowl persistence 6/12 is visible

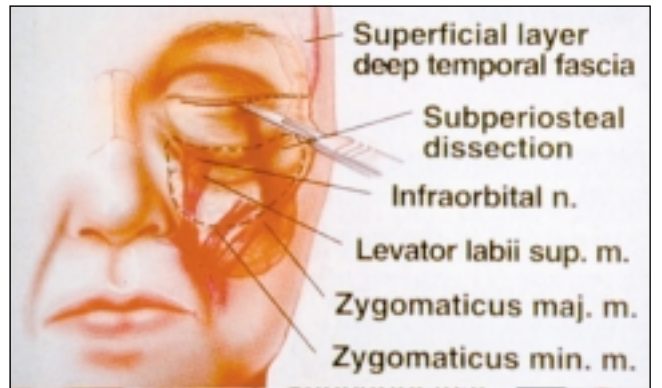
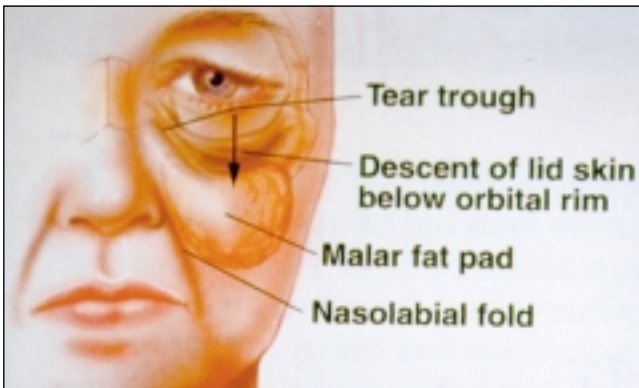


Figure 3) Top left Characteristics of infraorbital and midfacial ageing. Top right Anatomy of the cheek. Bottom left Suspension sutures. Bottom right Deep temporal fascia



Figure 4) **Top left** Before facial rejuvenation. **Top right** Four years after first facelift – nasolabial fold prominence and jowls are visible. **Above** Six months after second surgery – subperiosteal facelift, endobrowlift and bilateral temporal lift

at the seven o'clock position. A suspension suture is placed inside the inner wall of the orbital rim to achieve appropriate contouring over the globe of the eye.

Duration of surgery under local anesthesia is approximately 2 h. The following solution is used for infiltration for this procedure: 1% lidocaine (10 cm³), 0.5% bupivacaine hydrochloride (10 cm³), 20 mL saline and 2 cm³ sodium bicarbonate solution.

The subperiosteal lift and the bitemporal lift done together provide a better result. Here, it is more common that canthoplasty is not done unless the tone in the lower eyelid is poor. A bitemporal lift appear to support and suspend the lower eyelid until healing is complete. The superficial temporal fascia is incised and separated from the deep temporal fascia up to the lateral orbital rim. Suspension sutures are applied to the superficial temporal fascia, pulling it superiorly to achieve the desired pull on the lateral eyebrow, and the excess skin is excised. If necessary, further enhancement and improvement of appearance that incorporate a preauricular incision extending onto the tragus and slightly inferiorly can be achieved. A preauricular subcutaneous dissection is done up to the malar prominence, and some platysmal tightening can be achieved by platysmal sutures where needed.

Pre-auricular dissection enhances the appearance of the face and achieves better contouring. The jawline is also enhanced. The anterior neck is contoured by a small submental incision, and an anterioplatysmaplasty with liposuction is completed.

The laxity of the neck can be improved further by making an incision in the occipital hairline with dissection carried in the subcutaneous plane, exposing the sternocleidomastoid, and the platysma fascia. The platysma is elevated and incised, and a posterior platysma mastoid suspension suture is applied to achieve pull in the posterior occipital plane backwards and slightly upwards. This gives significant tightness



Figure 5) Left Before facial rejuvenation. **Right** After subperiosteal facelift, endobrowlift, bitemporal facelift and submental liposuction

to deeper tissues of the neck. The excess skin is excised in the occipital hairline, pulling the hairline in a slightly more lateral and superior plane. The ear lobule is moved superiorly, which looks more esthetically pleasing. There are no visible scars in the retroauricular mastoid and occipital areas.

RESULTS

A total of 38 surgeries were performed. Surgeries were divided into one of five categories:

Category 1 – subperiosteal cheek lift with lower eyelid blepharoplasty (seven cases).

Category 2 – subperiosteal cheek lift with lower eyelid blepharoplasty and canthoplasty (eight cases).

Category 3 – subperiosteal cheek lift, lower eyelid blepharoplasty and bitemporal lift (10 cases).

Category 4 – subperiosteal cheek lift, lower eyelid blepharoplasty, canthoplasty and bitemporal lift (five cases).

Category 5 – all of the above plus anterioplatysmaplasty and occipital platysmaplasty (eight cases).

All of the cases above except one in Category 1 had submental liposuction.

COMPLICATIONS

Three patients had lateral orbital swelling with looseness of the skin with a bulge. Two patients settled down within three months with taping. One patient needed a conservative skin

excision to reduce the bulge on the lateral part of the orbital rim, which was well accepted by the patient. The patients who had a bitemporal lift with subperiosteal facelift with and without canthoplasties had no eyelid complications, although they had some swelling in the malar prominence that resolved within two to three months – no surgery was necessary. Overall, the patients who had a bitemporal lift had significant malar augmentation bilaterally, which was very desirable.

Bruising and swelling on the neck and cheek areas was present in all patients who had suction assisted lipectomy in conjunction with the surgery. One patient had a recurrence of cheek ptosis on the left side that was seen four weeks post-surgery that was corrected by resuspension of the cheek, re-exploration and resuture. This patient had an uneventful recovery within three months after surgery. One patient had paresis of the frontal branch of the facial nerve on the left side. This was related to performing endoscopic browlift in conjunction with subperiosteal lift, and anterior and posterior platysmaplasty. This was treated conservatively, and in four months the paresis resolved spontaneously.

Initial postoperative swelling and fullness on the lateral orbital rim is treated by taping the eyelids and cheeks for up to one month. Only one patient who had not had a bitemporal excision, required excision of a 'dog-ear' at the lateral orbital rim. The facial swelling and bruising all settled within one month after surgery.



Figure 6) Top left *Before facial rejuvenation.* Bottom left *Two weeks after subperiosteal facelift with local anesthetic.* Above *One-and-a-half years after subperiosteal facelift*

The patients who underwent the full facial rejuvenation operation, including occipital incision, took four weeks to resolve and returned to work two weeks after surgery. The procedure took approximately 5.5 h to complete. Patients admitted overnight in the hospital were discharged the next day after their dressings were changed.

Surgery lasted 3.5 h for patients who had subperiosteal lift via the lower eyelid blepharoplasty and a bitemporal lift including liposuction. Surgery was performed under local anesthesia in the ambulatory care facility. Patients were given pethidine hydrochloride 2 mg, cephalexin 500 mg orally, lorazepam 2 mg sublingually and dimenhydrinate 50 mg one-half hour before the procedure. Patients were kept in the recovery room for approximately 2 h after surgery and then discharged. Swelling and fullness of the cheek and chin areas were more related to the liposuction that was done in conjunction with the cheek lift than the cheek lift alone.

DISCUSSION

The subperiosteal cheek lift done via lower eyelid blepharoplasty with or without canthoplasty has achieved significant improvement over the malar and zygomatic areas (1,2). This

enhances the results of the blepharoplasty and improves the appearance of the midface. Prominence of the nasolabial folds is reduced, and the soft tissue of the face is redraped in the midfacial area. The 'dog-ear' deformities, fullness on the lateral orbital rim and wrinkling of the skin were minimized or eliminated by performing a bitemporal lift concomitant with a subperiosteal lift, which also reduced the need for canthoplasty (Figures 4,5). Lax lower eyelids were improved with inferior lamella canthoplasty without resection of the lower eyelid (1). Initial postoperative swelling and fullness on the lateral orbital rim was treated by taping of the eyelids and cheeks for up to one month.

CONCLUSIONS

A subperiosteal facelift and cheek lift via the lower eyelid blepharoplasty incision enhances the appearance of the midface and improves the results of the lower eyelid blepharoplasty (Figure 6). The prominence of nasolabial folds is significantly reduced, and the jowl prominence is reduced and

minimized, especially in patients who have concomitant liposuction submentally. The upper lip is improved in appearance, and the midface appears fuller. The alar nostrils are pulled laterally and upwards in a more youthful plane. A concomitant bitemporal lift improves skin wrinkling around the lateral orbital area and improves the appearance of the lateral brow, reducing the need for a lower eyelid canthoplasty. In addition, the nasojugal folds are eliminated or improved, enhancing the overall appearance of the face. Patients who underwent full facial rejuvenation have minimal scarring.

REFERENCES

1. Hester TR, Codner MA, McCord CD. The "centrofacial" approach for correction of facial aging using the transblepharoplasty subperiosteal cheek lift. *Aesth Surg Quarterly* 1996;7:51.
2. Hamra ST. The role of orbital fat preservation in facial aesthetic surgery. A new concept. *Clin Plast Surg* 1996;23:17-28.
3. Loeb R. *Aesthetic Surgery of the Eyelids*. New York: Springer Verlag, 1989:1-10.
4. Hamra ST. Arcus marginalis release and orbital fat preservation in midface rejuvenation. *Plast Reconstr Surg* 1995;96:354-62.