

Subperiosteal Rejuvenation of The Forehead

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Subperiosteal rejuvenation of the forehead may be performed through several small incisions in the brow. Small incisions are placed in the hairline and within the hair-bearing portion of the brow. The procedure provides a safe and reliable way to improve the position of the brow. The addition of resorbable screw fixation improves the stability of the brow position postoperatively and facilitates healing in the desired location. Subperiosteal brow lift may be performed successfully by way of minimally invasive incisions with favorable results.

METHODS

The authors have established that a small incision placed directly in the brow can provide excellent exposure to the lower forehead, based on our extensive experience in craniofacial surgery. If the incision is beveled correctly and an atraumatic technique pursued during dissection and closure of the wound, the brow incision provides an excellent aesthetic result in all age groups. Subperiosteal dissection of the entire forehead, combined with removal of the corrugator supercillii and procerus muscles, facilitates predictable elevation of the forehead. Furthermore, based on

our large series of craniofacial reconstructions using resorbable screw rigid-fixation, it became apparent that resorbable fixation would provide the optimal means of securing the soft tissue to the underlying bone without the potential risks of permanent screws and plates.

TECHNIQUE

A thorough physical examination is performed on the patient to identify the anatomy of the bony landmarks. After the supraorbital and supratrochlear notches on the foramen are marked, a brow incision is made immediately lateral

to the foramen using a #11 scalpel blade, making sure to bevel the knife in the direction of the hair follicles. When the subperiosteal plane is entered, an endoscopic elevator is introduced and dissection is carried out in the subperiosteal plane to the level of the temporal fusion line and the forehead is, thus, released from all lateral attachments. If planned, a corrugator and procerus resection also can be carried out at this time.

After the forehead is released from all periosteal attachments, small stab incisions are made over the desired fixation points, or upper lid blepharoplasty incisions are used for placement of the resorbable screws (Lactosorb, Walter



Figure 1. Preoperative photograph of 59-year-old patient before brow lift and lower lid blepharoplasty.

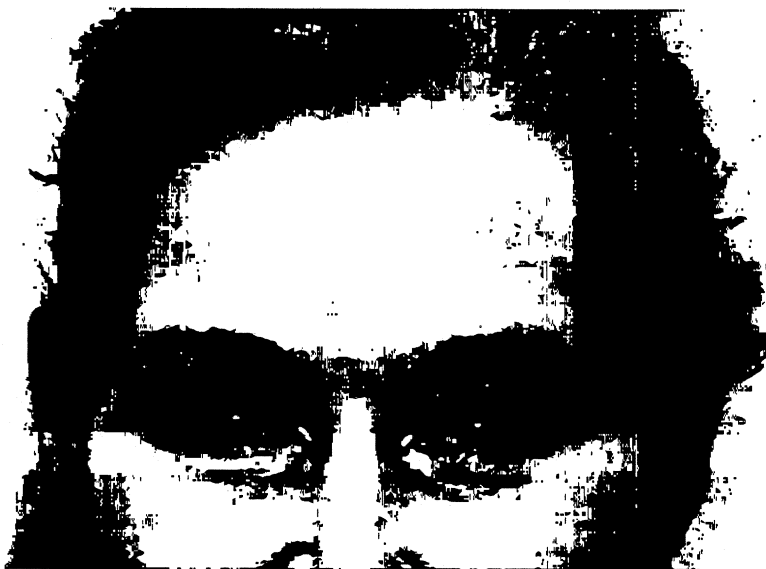


Figure 2. Postoperative appearance at six months following brow lift and lower lid blepharoplasty. Note improved position of brow.

Lorenz Surgical, Jacksonville, FL). This procedure is accomplished by use of the hand-held, self-drilling, and tapping device in a single maneuver (Walter Lorenz Surgical). The 7-mm long resorbable brow screws are then inserted. The suture is pulled tight, elevating the forehead to the desired position, and tied after completely securing the screw into the bone. It is important to completely release the dermal attachments of the stab incision to prevent dimpling

postoperatively. The wound beds are then irrigated and closed.

DISCUSSION

Forehead suspension has become an integral component of the rejuvenation of the upper third of the face (Fig 1).¹⁻⁵ When used properly, it raises the brows to the precisely desired position, and improves the appearance of the mid-forehead rhytids while minimizing the

required upper lid skin excision (Fig 2).

Successful execution of the subperiosteal forehead lift is dependent on thorough knowledge of the anatomy of the forehead to avoid damage to the neurovascular bundles, coupled with proper soft-tissue fixation to diminish undue tension of the incisions. The supraorbital neurovascular bundles are identified. The vessels are noted as they exit the notch in the supraorbital rim and deflected inferiorly. Supraorbital vessels that exit by way of a foramen are freed with a small osteotome.

This technique allows excellent exposure to the subperiosteal plane and stable fixation of the soft tissues, thus minimizing incisional tension and scalp alopecia. Use of resorbable screws has added the advantage of stable fixation without concern of permanent indwelling devices that could migrate intracranially or exteriorize from the scalp.⁶

Forehead lifting has become an integral component in rejuvenation of the face. New techniques such as described here, which allow precision in soft-tissue placement, will have an increasingly critical role in future surgical procedures to enhance the results. **STI**

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