

Lateral Browlift Using Temporal (Pretrichial) Subcutaneous Approach Under Local Anesthesia

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Abstract

Lateral brow ptosis is a common aging phenomenon, contributing to the lateral upper eyelid hooding, in addition to dermatochalasis. Lateral brow lift complements upper blepharoplasty in achieving a youthful periorbital appearance. In this study, the author reports his experience in utilizing a temporal (pretrichial) subcutaneous lateral brow lift technique under local anesthesia. A retrospective analysis of all patients undergoing the proposed technique by one surgeon from 2009 to 2016 was conducted. Additional procedures were recorded. Preoperative and postoperative photographs at the longest follow-up visit were used for analysis. Operation was performed under local anesthesia. The surgical technique included a temporal (pretrichial) incision with subcutaneous dissection toward the lateral brow, with superolateral lift and closure. Total of 45 patients (44 females, 1 male; mean age: 58 years) underwent the temporal (pretrichial) subcutaneous lateral brow lift technique under local anesthesia in office setting. The procedure was unilateral in 4 cases. Additional procedures included upper blepharoplasty (38), ptosis surgery (16), and lower blepharoplasty (24). Average follow-up time was 1 year (range, 6 months to 5 years). All patients were satisfied with the eyebrow contour and scar appearance. One patient required additional brow lift on one side for asymmetry. There were no cases of frontal nerve paralysis. In conclusion, the temporal (pretrichial) subcutaneous approach is an effective, safe technique for lateral brow lift/contouring, which can be performed under local anesthesia. It is ideal for women. Additional advantages include ease of operation, cost, and shortening the hairline (if necessary).

Keywords

temporal brow lift, pretrichial forehead lift, aesthetic, cosmetic, technique

Lateral brow ptosis is a common aging phenomenon, contributing to the lateral upper eyelid hooding, in addition to dermatochalasis. Lateral brow lift complements upper blepharoplasty in achieving a youthful periorbital appearance. Various brow lifting techniques have been described for ptotic brows, including coronal brow lift, endoscopic brow lift, direct brow lift, pretrichial brow lift, and mid-forehead brow lift.¹⁻⁹ There are also multiple indications and clinical findings that influence the surgical technique, in addition to surgeon's preference, including brow contour and position, degree of brow ptosis, skin type, presence of forehead rhytids, brow symmetry, and position of the hairline. Cost, recovery times, and patient preference are other factors involved.

In this study, the author reports his experience in utilizing a temporal (pretrichial) subcutaneous lateral brow lift technique under local anesthesia and discusses the ideal candidate.

Methods

This was a retrospective analysis of all patients undergoing the proposed technique by one surgeon (M.R.T.) from 2009 to 2016. Informed consent was obtained for each procedure, and the review adhered to the standards of the Declaration of Helsinki and was compliant with the Health Insurance Portability and Accountability Act. All patients were from the private practice of the senior author (M.R.T.), and all surgeries were performed at the office under local anesthesia.

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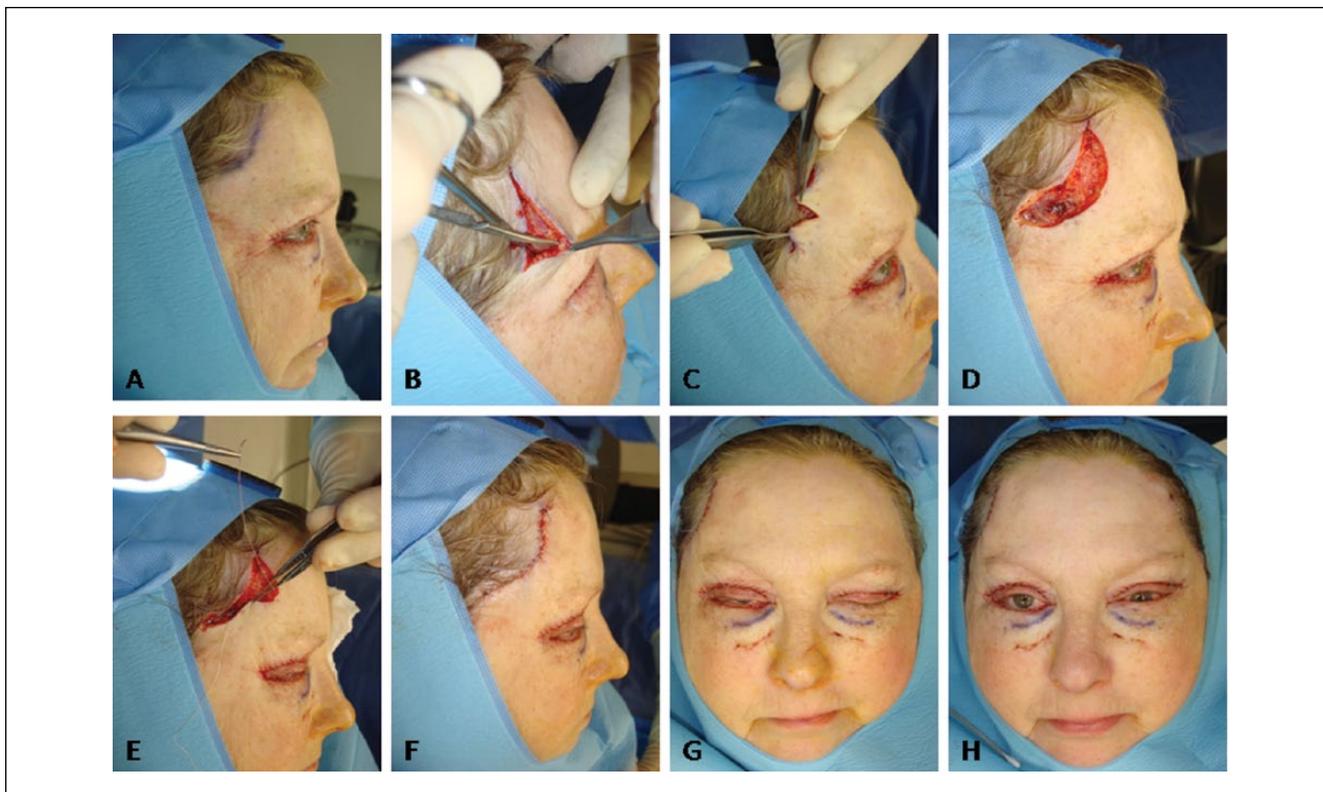


Figure 1. Intraoperative photo series demonstrating temporal brow lift in a 63-year-old female: A, Marking along the hairline in the temple; B, beveled incision and vertical spreading technique in the subcutaneous plane; C, excess skin to be excised; D, after excision; E, superolateral lift closure with subcutaneous 4-0 Vicryl suture; F, superficial closure using 5-0 Prolene suture; G, after completion of the right side, before start of the left side; H, immediate postoperative bilateral lift.

Surgical candidate included any person with lateral brow ptosis without significant medial brow descent. Smokers were excluded. Concomitant surgical procedures were recorded. Preoperative and postoperative photographs at the longest follow-up visit were analyzed for cosmetic outcome. All photographs were obtained using a standardized technique in the frontal and oblique positions with the eyelids open and facial muscles relaxed. Complications were recorded.

Surgical Technique

Operation was performed under local anesthesia (with light oral sedation using 5-10 mg Valium) in the office setting. Markings were made preoperatively, with the patient in a sitting position. The lateral brow was manually lifted in superolateral direction to achieve aesthetic youthful brow with the lateral half higher than the medial half of the brow. This was done with the patient's input with a mirror on hand. The markings were made along the temple hairline (Figure 1).

The area of the dissection was infiltrated with lidocaine 1% or 2% with epinephrine, with a total of 3 to 6 CC injected on each side. After sterile preparation, a beveled incision was made to allow for potential hair growth through the scar. The

subcutaneous plane was elevated from the incision line to a level midway to the lateral brow using a blunt vertical spreading technique.

The skin flap was lifted in an ideal vector for the individual patient in superolateral direction. Appropriate amount of excess skin was excised. The flap was closed under minimal (less lift) to moderate (more lift) tension by using deep subcutaneous 4-0 Vicryl sutures in an interrupted fashion followed by superficial closure using 5-0 Prolene sutures in a running fashion. Dog ear at the most superior end of the wound were trimmed. Both sides were closed in a similar fashion under same tension unless there was preoperative asymmetry, in which case the more ptotic side was lifted in greater amount, resulting in more tension on the wound closure (moderate instead of minimal tension). The sutures were then covered by antibiotic ointment without any dressing. First postoperative follow-up was at 1 week at which time the Prolene sutures were removed.

Results

Total of 45 patients (44 females, 1 male; mean age, 58 years; range, 38-78 years) underwent the temporal (pretrichial) subcutaneous lateral brow lift technique under local anesthesia

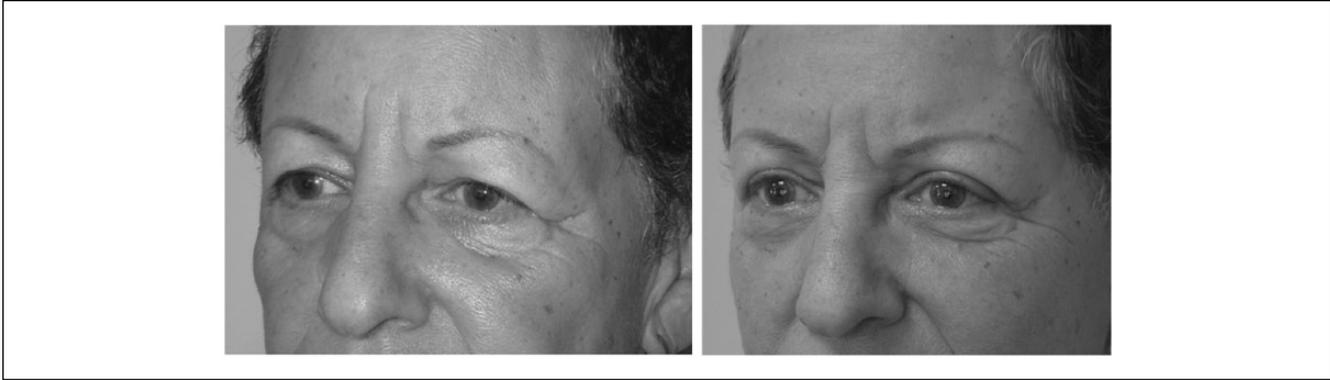


Figure 2. Preoperative (left) and 8-month postoperative (right) photographs of a 73-year-old female who underwent bilateral lateral brow lift and upper blepharoplasty.

Note. Her eyebrow tattoo is elevated laterally, which depicts clear elevation of the lateral eyebrow (with no possible manipulation of any eyebrow hair).



Figure 3. Preoperative (top, left) and 1-year postoperative (bottom, left) photographs of a 57-year-old female who underwent bilateral lateral brow lift, quad-blepharoplasty, ptosis surgery, and canthoplasty, and right photo depicts faint scar along the temple hairline.

in the office setting. The procedure was unilateral in 4 cases due to preoperative asymmetry. Concomitant surgical procedures performed included upper blepharoplasty (38), ptosis surgery (16), and lower blepharoplasty (24). Average follow-up time was 1 year (range, 6 months to 5 years).

All patients were satisfied with the eyebrow contour and scar appearance at the 4-month postoperative visit, as assessed by a short questionnaire at the 3- to 4-month postoperative period. No patient needed scar revision. One patient required additional brow lift on one side for asymmetry. There were no incidences of hematoma, infection, prolonged numbness, or frontal nerve paralysis.

Representative clinical photographs from 5 patients in this series can be seen in Figures 2 to 6.

Discussion

The temporal/lateral brow lift using pretrichial incision with subcutaneous dissection can be done under local anesthesia with effective and safe results, with high patient satisfaction. The lateral brow is normally the main segment of the eyebrow that descends with time, and this technique effectively addressed this segment and addresses the lateral brow "hooding," which cannot be addressed by upper blepharoplasty



Figure 4. Preoperative (left) and 9-month postoperative (right) photographs of a 67-year-old female who underwent bilateral lateral brow lift, quad-blepharoplasty, and ptosis surgery.



Figure 5. Preoperative (left) and 2 years postoperative (right) photographs of a 71-year-old female who underwent bilateral lateral brow lift, quad-blepharoplasty, ptosis surgery, and canthoplasty.

alone. It can be combined with other periorbital rejuvenation procedures to achieve optimal results.

This proposed variation of the lateral brow lift technique has multiple advantages over other brow lift techniques. The incision and dissection is much closer to the lateral brow than the standard pretrichial incision in the superior forehead area, which results in less dissection, more comfort, less sensory nerve loss, and more effective results due to simple physics.^{1,10-12} The incision is easily hidden along the lateral hairline in females, during the initial 3 months of healing, after which the incision is not clearly visible in almost all the patients. This technique can either elevate (by removing hair-barring portion) or lower the hairline, as desired, or the hairline position can be left undisturbed. The extent of dissection and tissue removed along with the vector (and effective lift) can be titrated to each side to correct for asymmetries. Most importantly, this minimally invasive technique can be done comfortably and safely in the office setting under local anesthesia without extensive equipment, unlike endoscopic or coronal lift. This reduces the cost and

stress for the patient, with desired quicker recovery and less anesthesia (with less subsequent short-term and long-term side effects). This technique has distinct advantages over 2 other brow lift techniques that can be performed under local anesthesia. Internal brow lift/fixation usually only gives support to the brows, with only modest lift at best. Direct brow lift technique leaves a visible permanent scar, which is not preferred by almost all female patients.

There are 3 main limitations of this technique. First, it only addresses the lateral brow and hence it is not appropriate for those patients in whom the entire forehead needs to be lifted. Second, the incision is visible (red) for about 3 months after the procedure, which limits its use in patients with short hair (ie, males). Third, the feasibility of this technique in patients with poor healing or smokers is yet to be determined.

In summary, the temporal/lateral brow lift technique using pretrichial incision with subcutaneous dissection is ideal for nonsmoking patients with long hair and lateral brow descent with limited central forehead rhytids. It can be combined



Figure 6. Same patient as the one in the surgical series in Figure 1, undergoing bilateral lateral brow lift, quad-blepharoplasty, and canthoplasty.

Note. Top Left, preoperative; Top Right, 1-week postoperative; Bottom, 4-month postoperative photographs. Note faint scar along the temple hairline.

with other periorbital procedures in the office under local anesthesia. In addition, it can address eyebrow asymmetry, along with addressing high or short hairline. It is effective, safe, and inexpensive with high patient satisfaction.

Author's Note

This study was presented at American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS) 11th International Symposium in New York (May 29, 2014) and at the Vegas Cosmetic Conference in Las Vegas (June 26, 2014).

Declaration of Conflicting Interests

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