Cosmetic Follow-Up

Correction of Thin Lips: A 17-Year Follow-Up of the Original Technique

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The demand for lip augmentation in the older population and, occasionally, the younger one remains high. During the natural course of the aging process, the progressive loss of soft-tissue bulk and the flattening of the lip contour create an appearance of thin lips and their associated stigmata of old age.

In general, methods for lip augmentation fall into two categories: (1) local oral mucosal flaps and (2) autologous grafts, alloplastic implants, or injections. Numerous techniques have been described to address the senile lip, including V-Y plasty, lip-lifting buffalo horn excision, frenulum plasty, fat or dermal-fat grafting, use of polyacrylamide hydrogel, use of polytetrafluoroethylene tube, and silicone microgel injection, among others. In 1984, the lip lift technique was published as a procedure for correcting thin lips. Since its original publication, several modifications have been introduced. Outlined below are the revised evaluation of the lip complex and the modifications to the original lip lift technique, as experienced by the authors over a 17-year period.

Lip Aesthetics

Ideal Youthful Lip Contours

The aesthetic analysis described below has previously been published by one of us (Fanous) and is herein updated. In the frontal view, the aesthetically pleasing lip complex consists of both the upper and lower lips forming a single, diamond-shaped unit with three softly curving contours (M, M, and W). The contours of this single unit extend between both oral commissures (C and C').

The upper lip vermilion border forms a soft M with two peaks (B and B') corresponding to the philtral ridges. The peaks typically rise 3 to 5 mm above the central vermilion border (point A) at the midline. From B and B', the vermilion line follows a lazy S-shape or nearly straight line laterally and inferiorly toward the commissures. The tubercle, a central fullness, protrudes downward toward the lower lip. The typical height of the upper lip is approximately 7 to 8 mm in the midline.

The lower lip has two paramedian central enlargements (g and g' in Fig. 1, above) that shape its upper limit into an M, allowing a perfect and corresponding fit into the M of the upper lip on lip closure. The general mass of the lower lip is nearly 50 percent greater than that of the upper lip, with a height of approximately 10 to 12 mm in the midline (Fig. 1, center). The lower vermilion border has the form of a W, with its lower points, D and D', approximately 2 to 3 mm lateral to points B and B', respectively. The points B and B' are approximately 6 mm from the midline, whereas the points D and D' are at about 10 mm from the midline. The central portion of the line D-D' can be straight or form a slight arch at point F (Fig. 1).

Both the upper and lower lips have a linear, thickened, cordlike delineation along the vermilion borders. A similar but more prominent elevation is present along the philtral edges of the upper lip. In profile view, both lips are slightly everted at the vermilion border, with

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the lower lip being slightly posterior to the upper one.

**Lip Contour Changes Associated with Aging**

The lips undergo several changes associated with aging (Fig. 1, below). They tend to become thinner, atrophic, and redundant. All three contours (M, M, and W) tend to flatten. Tissue bulk loss is greatest in the central portion of the upper lip and results in the loss of the youthful, lozenge-shaped labial unit. The lower lip loses volume as well. The shrinkage of both lips diminishes the central fullness of the upper lip and the paramedian fullness of the lower lip and results in a straighter line between the lips. These atrophic changes can cause an inversion or eversion of one or both lips.

Loss of tissue elasticity creates an elongated upper lip, thus displacing the vermilion border downward. This is a crucial point to remember in lip analysis. Unlike the loss of volume that can be improved with implants or injections, the upper lip elongation can only be shortened surgically, either by a vermilion or subnasal incision. Therefore, the surgeon has to decide whether a surgical intervention is justified.

**Thin Lips in Young Patients**

Some young patients do possess thin lips. Their lip complex is thinner because of hereditary or racial predisposition. In these patients, the thin lip creates the perception of the patients being older than their true age.

**INDICATIONS OF THE LIP LIFT TECHNIQUE**

Poor outer lip contour (the outer limits of the lips represented by both vermilion borders) and an elongated upper lip are currently the only indications for the lip lift technique. Therefore, the ideal candidates for the lip lift procedure are patients with poor outer lip contour (flat vermilion border) with or without associated volume loss and those with an elongated upper lip, with or without associated volume loss.

In the original article, small lip volume alone was a sufficient indication for this procedure. This has subsequently changed, following the introduction of a myriad of lip fillers in the form of autogenous and alloplastic materials. Increasing the lip volume and changing the inner lip contour can both be accomplished by lip fillers. Surgical intervention, however, remains the only way to significantly modify the outer lip contour or the upper lip length.

**Factors Affecting the Choice of Candidates**

Patients who meet one or both indications for the procedure (poor outer lip contour or elongated upper lip or both) can be classified as ideal or less than ideal candidates, depending on two factors: age and skin thickness. Ideal candidates are those who have thin skin and are 40 years of age or older (the older the better). This is because there tends to be less scarring in elderly patients and in those with thin skin. Young patients and those with thick, oily skin tend to develop more scarring. Those patients can still undergo the procedure, but their scars may not be as fine as those of the first group.
Preoperative Marking

First, the existing vermilion borders of both the upper and lower lips are traced as tiny dots, using a fine-tip marker to ensure accuracy (Fig. 2, above). A vertical line representing the midline is drawn on the upper and lower lips (Fig. 2, second from above). Two vertical lines are then traced laterally on both sides of the midline on the upper lip to define the two upper lip peaks (B and B'). Two other vertical lines are used to guide the future location of the lower lip peaks (D and D').

The second step is to mark the new B and B' peaks of the upper lips 3 to 5 mm higher than their original position, including an additional 1 mm to account for the expected minimal postoperative drooping of the upper lip’s new vermilion border, a phenomenon not seen in the lower lip. Depending on the position of central point A, it is usually elevated by 2 to 3 mm to achieve appropriate contour. The new upper lip vermilion border is then outlined with fine dots that stop 2 to 3 mm from the commissures.

The third step involves marking new D and D' peaks for the lower lip, which are lowered between 2 and 6 mm, as judged by the surgeon. The new vermilion borders are then traced with fine dots connecting the peaks and extending laterally as a lazy S-shape, reaching approximately 2 to 3 mm short of the commissure.

Surgical Technique

Anesthesia

Typically, local anesthesia is used. Lidocaine and prilocaine cream (EMLA; Astra Merck, Wayne, Pa.) is applied for 30 to 45 minutes before the procedure. The surgical field is infiltrated with a total of 3 to 5 cc of 1% lidocaine and epinephrine (Xylocaine; Astra Merck) with epinephrine 1:100,000.

Incision and Tissue Excision

The lip is held taut between the thumb and forefinger. Using a no. 11 or no. 15 blade, incisions are made first along the newly outlined vermilion borders and then along the original ones. The extra skin is then removed. Cauterization with a very-fine-needle cautery tool is beneficial. It is important, however, to not cauterize too close to the cut edges, as this can inhibit healing and promote scarring.

Closure

Closure is achieved using a few inverted 4-0 polydioxanone suture or Vicryl (polyglactin 910) dermal sutures, and then multiple, interrupted 6-0 chromic skin sutures are used at the incision line to achieve a taut closure. Steri-Strip dressings are used over the incision for 1 week.

Volume Augmentation as an Adjunct Procedure

Postoperatively, further augmentation options are now available, including both autogenous and alloplastic materials, either temporary or permanent.13–15 These options (collagen injections, hyaluronidase acid injec-
tions, Gore-Tex filaments or pieces, polymethyl methacrylate microspheres, and harvested fat injections, among others) can be used in the body of the lips, as well as along the vermilion border or philtrum, to further enhance both volume and contour definition. These fillers are well known to all plastic surgeons and are not covered in this article.

Figures 3 and 4 show preoperative photographs and postoperative results of the lip lift technique.

DISCUSSION

With aging, the lips undergo significant changes which result in a loss of tissue bulk and a poor contour. Three fundamental principles need to be achieved to restore a balanced and aesthetically pleasing lip complex: (1) proper lip contour, (2) proper upper lip length, and (3) proper lip volume. The lip lift technique is a procedure that helps address some of these problems. Since its initial description, several modifications have been made. Indications are presently limited to poor outer lip contour and upper lip elongation. Volume augmentation is not an indication anymore, because it can be easily corrected with autogenous or alloplastic materials. During preoperative planning, the central upper vermilion point (A) is now usually raised, and the lateral peaks (B, B' and D, D') are more accurately placed. Finally, fine electrocauterization and a two-layer closure are now used.

In the early 1980s, when the technique was first introduced, the number of cases performed annually ranged from eight to 10. As the number of indications for the procedure has decreased, the number of lip lifts performed has shrunk as well, to between three and five cases annually.
The three complications mentioned in the original article (hypertrophic scarring, asymmetry, and undercorrection) still represent the three most common sequelae of the procedure. Hypertrophic scarring is rare, occurring in only two patients over the last 20 years. In both cases, the scarring was mild to moderate and improved to an acceptable result with steroid injections and time. Asymmetry is related to experience. Revisions (touch-ups) were required in about 10 percent of the cases and were usually very minor, involving raising or lowering the vermillion border in a specific spot. Undercorrection was not a problem in our practice, except in the first year or two of the procedure. In general, the patient satisfaction rate is extremely high, especially beyond the first 6 months after the operation, when the scarring has become less obvious and the contour more subtle and natural-looking. Overall, the lip lift technique offers a controlled correction for labial problems that are not improved with nonsurgical means.

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