Nostrilplasty: Raising, Lowering, Widening, and Symmetry Correction of the Alar Rim

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Background: Although the alar rim has frequently been neglected in correction of nasal deformities, techniques for its improvement have been proposed and used successfully.

Objective: Two techniques for correction of the deformed alar rim are described.

Methods: To lower the alar rim, the internal skin of the vestibule is dissected away from the areolar tissue and brought down as a flap. A segment of cartilage is taken from the septum or upper portion of the lower lateral cartilage. The cartilage graft is placed in the rim and the vestibular mucosa is folded over the graft and sutured to hold the cartilage in place. Raising of the alar rim is accomplished through direct excision to raise the rim and to make the nostril longer or wider. This technique is applicable to correction of a dropped rim, pinched nostrils, hidden columella, sigmoid ala, small nostrils, and foreshortened nose.

Results: These techniques have been used to treat primary, secondary, and traumatic nasal deformities in more than 200 patients during the past 20 years with few complications.

Conclusions: Although the techniques described require a learning curve, once mastered they can be combined with other techniques used routinely in rhinoplasty to successfully treat a variety of nasal deformities. (Aesthetic Surg J 2002;22:227-237.)

Dr. J. William Little once stated, “If you don’t see it, you can’t fix it.” With this admonition in mind, it is perhaps appropriate to note that surgical correction of the alar rim first begins with a diagnosis. The alar rim is frequently overlooked or neglected, even though it plays an integral part in many nasal deformities.

Astute plastic surgeons have recognized the importance of an organized approach to the diagnosis and correction of alar rim deformities and have established safe and effective surgical techniques to address the more common deformities. The purpose of this article is to provide the reader with 2 such techniques.

Alar Rim Lowering

Adequate local anesthesia is obtained in the nasal vestibule and ala proper by use of 10 mL of 0.50% xylocaine with 1:200,000 adrenaline and 0.5 mL hyaluronidase. An incision is made 5 mm in the mucosa of the rim parallel and cephalad to the alar rim. This incision must extend almost to the tip of the nose and to the pyriform recess (Figure 1, A). The internal skin of the vestibule is dissected away from the areolar tissue and is brought down as a flap (Figure 1, B). A segment of cartilage approximately 3 mm wide and 10...
mm long is taken from the septum or preferably from the cephalic portion of the lower lateral cartilage. When septum is used, it can make the reconstructed rim too thick. The vestibular mucosa is then folded over the cartilage graft (Figure 1, C) and sutured through and through with 5-0 nylon bolster stitches holding the cartilage in place (Figure 1, D). The lowered rim position achieved at this juncture will ultimately be the final result. There is a bare area internally above where the vestibular mucous membrane has been removed. There is no suturing of the internal mucosa, and this bare area rapidly epithelializes and has not, in our experience, caused scarified retraction of the alar rim. The identical procedure, if necessary, is performed on the other side. No bandage is required. The bolster stitches that are taken out at 1 week after operation will leave small dents initially in the external alar skin, but these will rapidly disappear within the following 2 weeks.

This technique can be used in both primary and secondary rhinoplasty procedures with great success. It is a technique that requires a learning curve, but it can be mastered with a little time and patience (Figures 2 and 3).

**Alar Rim Raising**

The ideal ala or nostril shape is drawn on the nose with gentian violet (Figure 4, A). After adequate anesthesia of
Figure 2. A, Preoperative view of a 47-year-old woman with bilateral high-arched nostrils secondary to previous rhinoplasty. B, Postoperative view 6 months after nostrilplasty shows the rim lowered by the techniques described in this article. The columella (medial crus cartilage) was elevated slightly.

Figure 3. A, Preoperative view of a 36-year-old woman with high-arched nostrils. B, Postoperative view 6 months after alar rim correction and other procedures shows the rim lowered by the technique illustrated.
the nose and the rim is achieved, a number 15 blade scalpel is used to cut out the ink line (Figure 4, B). A Kaye blepharoplasty scissors is then used to cut through both the mucosa and the external skin at the same level (Figure 4, C). The rim is sutured in one layer with interrupted 5-0 chromic stitches (Figure 4, D and E).

The relationship of the alar rim to the columella must be correct to be aesthetically pleasing to the eye. The surgical technique described here can be combined with other techniques used routinely during rhinoplasty. Admittedly, this technique may be intimidating for the plastic surgeon performing it for the first time. However, no patient of ours has ever complained of unacceptable long-term alar rim scarring.
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Figure 6. A, Preoperative view of a 31-year-old woman with a hidden columella. B, Postoperative view 6 months after raising of the alar rim and placement of a dorsal graft.

Figure 7. A, A 41-year-old man with a hidden columella after 3 rhinoplasty procedures. B, Postoperative view 6 months after raising of the alar rim and placement of dorsal and tip grafts.

This technique can be applied to a variety of presentations, as follows:

Hidden columella (Figures 5 to 7). The nasal rim is excised back far enough to display 5 mm of columella.
Sigmoid ala (Figures 8 to 10). Many patients have, instead of an arched ala, an S-shaped ala with a lowered portion posteriorly. This is excised in the same position.

Pinched nostrils (Figures 11 to 13). The vestibule is

Figure 8. Correction of sigmoid ala. An S-shaped ala that is redundant posteriorly is trimmed to create an aesthetic arch.

Figure 9. A, Preoperative view of a 47-year-old woman who had undergone alar base excision and 3 rhinoplasty procedures. B, Postoperative view 4 months after correction of ala and other procedures.
Base or in patients who have a pinched tip without adequate tip support.

Small round nostrils (Figures 14 and 15).

Figure 10. A, Preoperative view of a 24-year-old man with asymmetric nostrils and bilateral sigmoid ala. B, Postoperative view 6 months after correction of ala and achievement of symmetric nostrils through bilateral rim excision.

Figure 11. Correction of the pinched nostril created by the excessive removal of the lower lateral cartilage or excessive alar base excision. The excised rim makes the nostril wider because the vestibule is wider cephalad and laterally.

Wider cephalically and laterally than at the rim. Excising the rim creates a wider nostril. This procedure can be used in patients who have had overexcision of the alar base or in patients who have a pinched tip without adequate tip support.

Small round nostrils (Figures 14 and 15). These nostrils
Figure 12. A, Preoperative view of a 36-year-old patient with a pinched nostril deformity who had undergone 3 previous rhinoplasties. B, Postoperative view shows improved symmetry.

Figure 13. A, Postoperative view of a 49-year-old woman immediately after correction of pinched nostrils. B, Postoperative view 1 year after correction shows acceptable appearance of incisions.

Figure 14. Correction of the small round nostril. The area of the soft triangle can be excised to lengthen the nostril.
Figure 15. A, Basilar view of a 35-year-old man with small rounded nostrils that contribute to an increased lobular-to-nostril discrepancy. B, Postoperative view 10 days after excision of tissue in the soft triangle area demonstrates an improved tip-to-nostril proportion.

Figure 16. Correction of dropped rim. This technique can be used for traumatic, congenital, or cleft lip asymmetry.

can be extended by excising tissue in the soft triangle area to create a better tip-to-nostril proportion.

Dropped rim (Figures 16 to 18). The technique is particularly useful in rhinoplasty procedures involving patients with cleft lip or trauma in which the nostrils are asymmetrical and the rim is dropped. The proposed nostril is outlined with a marking pen, excised with a knife and scissors, and closed.

The foreshortened nose (Figures 19 and 20). The angle of the ala rim with the face to the foreshortened nose is generally 30 degrees or higher. By excising the rim, the angle can be improved to 15 degrees or less. The lengthening of a foreshortened nose is one of the most difficult procedures in plastic surgery, and there is a high risk of unsatisfactory results. The adjunct of raising the base of the columella and excising the rim not only results in a
different labial-columella angle but also gives the impression that the nose is longer.

**Conclusion**

The ala rim raising and lowering procedures described here have been used by the authors to treat primary, secondary, and traumatic nasal deformities in more than 200 patients over a 20-year period. These techniques help to successfully treat the entire nasal deformity. The incidence of complications, such as unacceptable scar
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formation, dehiscence, inadequate excision, and asymmetry, has been low.

References

Figure 19. Correction of the foreshortened nose. By changing the angle of both the columnella and the ala rim, the nose appears less upturned.

Figure 20. A. Preoperative view of a 34-year-old Hispanic woman after multiple rhinoplasty procedures and excessive alar rim angulation. B. Postoperative view 6 months after lengthening of foreshortened nose demonstrates correction using described technique.