

Nasal Base Narrowing

The Combined Alar Base Excision Technique

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Objective: To evaluate the role of the combined alar base excision technique in narrowing the nasal base and correcting excessive alar flare.

Methods: The study included 60 cases presenting with a wide nasal base and excessive alar flaring. The surgical procedure combined an external alar wedge resection with an internal vestibular floor excision. All cases were followed up for a mean of 32 (range, 12-144) months. Nasal tip modification and correction of any preexisting caudal septal deformities were always completed before the nasal base narrowing.

Results: The mean width of the external alar wedge excised was 7.2 (range, 4-11) mm, whereas the mean width of the sill excision was 3.1 (range, 2-7) mm. Completing the internal excision first resulted in a more conservative external resection, thus avoiding any blunting of

the alar-facial crease. No cases of postoperative bleeding, infection, or keloid formation were encountered, and the external alar wedge excision healed with an inconspicuous scar that was well hidden in the depth of the alar-facial crease. Finally, the risk of notching of the alar rim, which can occur at the junction of the external and internal excisions, was significantly reduced by adopting a 2-layered closure of the vestibular floor ($P=.01$).

Conclusions: The combined alar base excision resulted in effective narrowing of the nasal base with elimination of excessive alar flare. Commonly feared complications, such as blunting of the alar-facial crease or notching of the alar rim, were avoided by using simple modifications in the technique of excision and closure.

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THE CONCEPT OF NARROWING the alar base dates back to the early days of modern rhinoplasty when Robert Wier,¹ in 1892, described the use of external alar wedge excisions to correct the unattractive alar flare that follows reduction rhinoplasty. In 1931, Joseph and Milstein² described narrowing of the alar base by using internal excisions from the nostril base and vestibular floor. This concept was later modified and popularized by many authors,³⁻⁶ mainly to avoid the external scar that follows the classic Wier excision. However, since the early 1980s, a return to use of the external cutaneous excision to avoid the risk of notching of the alar rims after vestibular skin excisions has been noted.⁷⁻¹¹ In a further attempt to avoid external scarring, some authors¹²⁻¹⁴ have described using cinching sutures to approximate the alae and narrow the nasal base; however, these suturing techniques failed to gain wide popularity.

The present study describes my experience with narrowing of the nasal base in cases with a wide base and alar flaring, using a procedure that combines external alar wedge resection and internal vestibular floor excision.

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METHODS

PREOPERATIVE ASSESSMENT

Before deciding to narrow the nasal base, the caudal septum should be carefully examined to exclude any degree of deflection, deviation, or dislocation. Such caudal septal deformities may lead to nasal base distortion (**Figure 1**) in the form of loss of tip projection or to unequal nostrils with an asymmetric amount of alar flare.¹⁵ The second step is to assess the nasal tip position and definition accurately because alterations in the degree of nasal tip projection,^{16,17} rotation,^{18,19} or width will have a direct effect on the width of the nasal base and the amount of alar flare (**Figure 2**). Therefore, the nasal base width should be evaluated only after completion of all required nasal tip modifications. For proper assessment of the nasal base width, a clear distinction should be made between the width of the alar base and the degree of alar flare. The width of the alar base is the distance measured from one alar crease to the other, which ideally should equal the intercanthal distance. The alar flare is the maximum degree of alar convexity above the alar crease.

A wide nasal base can be the result of a truly wide alar base with wide nostrils, excessive flaring with a normal alar base width, or a combination of both. In cases of a truly wide base with wide nostrils, internal excisions from the nos-



Figure 1. Preoperative (A) and postoperative (B) photographs show the improvement in nasal base width and symmetry after correction of a right-sided caudal septal dislocation.

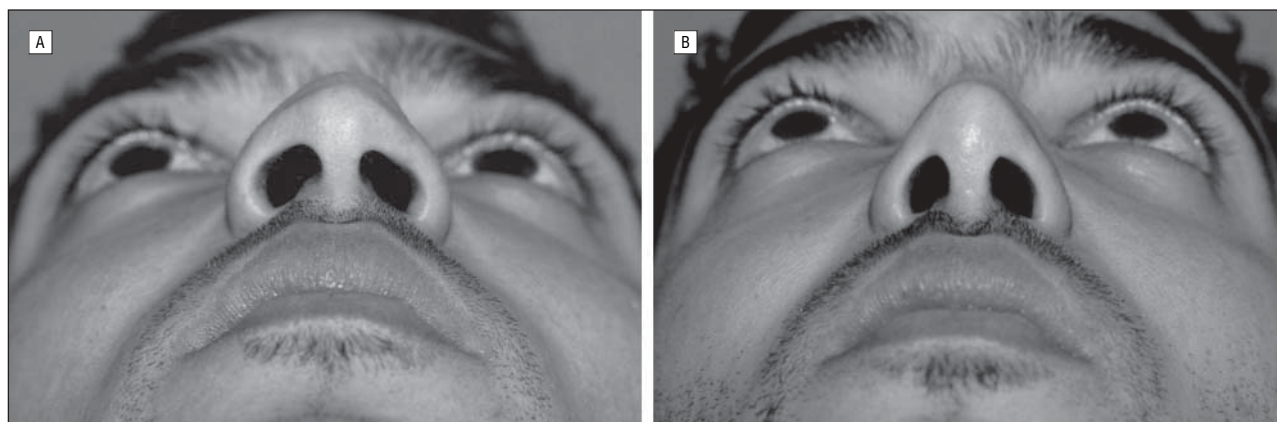


Figure 2. Preoperative (A) and postoperative (B) photographs show that increasing nasal tip projection will result in an apparently narrower nasal base with less alar flaring.

tril floor will result in narrowing of the nostrils and a true decrease in the width of the nasal base. In cases of excessive alar flare, external alar excisions will result in a decrease in alar flare with no true decrease in the width of the alar base; however, this decrease in lateral flare will result in an apparently narrower base as a result of the decrease in the widest diameter of the nasal base. Finally, in cases of a wide alar base associated with excessive flaring, effective nasal base narrowing can be achieved only by combining the internal vestibular floor excision with an external alar wedge excision.

An important factor to be assessed before surgery is any difference in the level of insertion of the alar lobule into the upper lip, which may lead to an oblique base with asymmetric flare.^{17,20} Other factors include the thickness of nasal skin and the presence of previous scars.²¹⁻²³

SURGICAL TECHNIQUE

Alar base narrowing is performed as the final step in rhinoplasty because any narrowing of the nasal tip or any change in tip projection will have a direct effect on the alar base configuration. Only after the closure of all rhinoplasty incisions can the amount of alar base narrowing be judged properly.

Before injection of anesthesia, a caliper is used to measure the distance from the midcolumnar point to the alar crease on each side to detect any difference in the width of the nasal sill, which may require asymmetric excision of nasal sills. The amount of sill resection is marked using 2 vertical parallel lines,

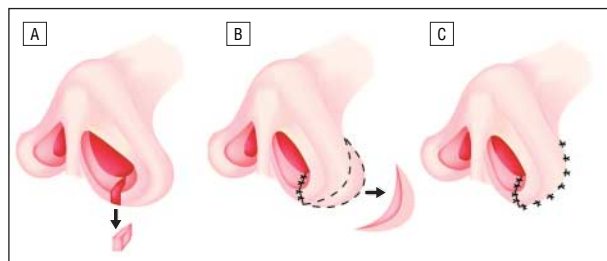


Figure 3. Schematic illustration of the combined alar base excision technique. The technique starts with the internal nostril floor excision (A); detachment of the ala at the alar-facial groove, followed by closure of the nostril floor defect before assessing the amount of external alar excision needed (B); and finally closes the external alar excision defect (C).

which extend into the nostril where the upper ends of both lines are connected with an inverted V-shaped incision (**Figure 3A**).

The alar-facial groove is marked, and the marking is extended along the crease between the nostril sill and the upper lip until meeting, at a right angle, with the medial line of the previously marked sill resection. When the marking is completed, the area is injected with 1% lidocaine hydrochloride and 1:100 000 U of epinephrine.

A No. 11 blade is used to perform the sill resection, followed by a No. 15 blade to detach the alar lobule from the face at the alar crease. Meticulous cauterization using a fine microdissection needle (Colorado needle; Stryker, Portage, Mich) is performed to achieve complete hemostasis. The anteroinferior end

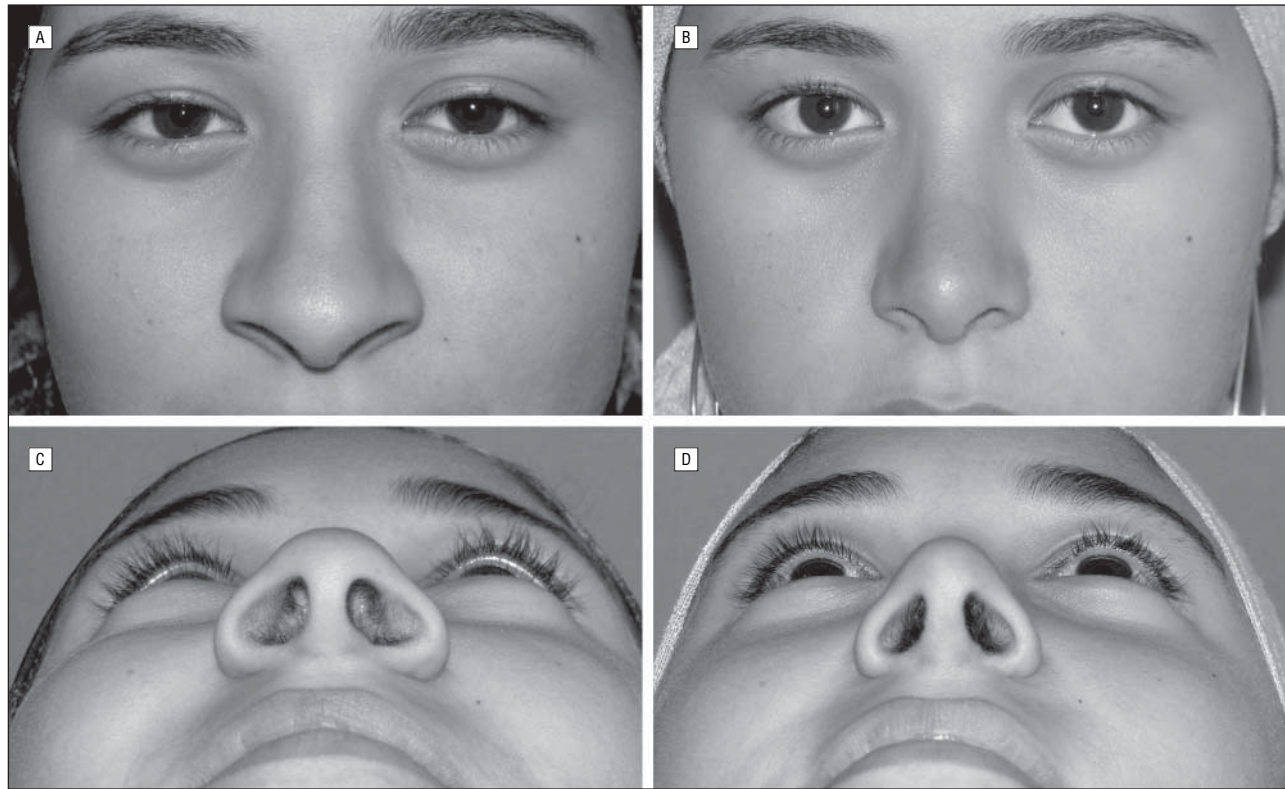


Figure 4. Preoperative photographs (A and C) of a patient with an extremely wide nasal base with wide nostrils and excessive alar flaring. The 2-year postoperative photographs (B and D) of the same patient after a combined alar base excision show effective narrowing of the nasal base without obliterating the alar-facial crease.

of the now-free alar flap is rotated downward and medially into the vestibular floor defect and fixed to the medial corner of the defect by a 5/0 polypropylene suture (Prolene; Ethicon Inc, Somerville, NJ). The level of this corner suture can be adjusted to reposition the insertion of the alar lobule into the upper lip to correct any preexisting asymmetry in the level of the alae. Only after closing the vestibular floor defect can the surgeon more accurately assess the amount of external alar excision needed (Figure 3B). On average, a 7.2-mm wedge excision from the lateral edge of the mobilized ala was found to be enough to eliminate the excessive alar flare in the study cases.

The sill excision is closed in 2 layers using 5/0 polyglactin 910 subcutaneous bunching sutures (Vicryl; Ethicon Inc) to help evert the skin edges, which are then closed using 6/0 polypropylene sutures for the part outside the nostril rim and 5/0 polyglactin 910 sutures inside the nostril. The alar crease incision is also closed in 2 layers using 2 deep 5/0 polyglactin 910 anchoring sutures to relieve tension at the skin edges, which are then approximated with a few interrupted 6/0 polypropylene sutures (Figure 3C). Antibiotic cream is applied to the incision lines, and all of the polypropylene sutures are removed on the fifth postoperative day.

RESULTS

On review of 1000 consecutive rhinoplasty cases I have performed, I found that some type of alar base excision was performed in 150 cases (15%). Of these, 81 cases (8.1%) received external wedge excisions to correct excessive alar flaring; 60 cases (6%) received a combined external alar wedge resection and internal vestibular floor excision to correct a wide nasal base with excessive flaring; and only 9 cases (0.9%) needed an isolated internal nostril floor (sill) excision to correct a slightly wide nasal base.

In the 60 cases of combined alar base excision, the mean width of the external alar wedge excised was 7.2 (range, 4-11) mm, whereas the mean width of the sill excision was 3.1 (range, 2-7) mm.

The combined alar base excision resulted in effective narrowing of the nasal base with elimination of the excessive alar flare, even in cases presenting with an extremely wide nasal base (Figure 4). No cases of postoperative bleeding, infection, or keloid formation were encountered. However, partial extrusion of the deep polyglactin 910 sutures occurred in 3 cases (5%) and was managed by removing the extruding sutures and cauterizing the area with silver nitrate. Cosmetically, the external alar wedge excision healed with an inconspicuous scar that was well hidden in the depth of the alar-facial crease and did not result in obliteration of the natural crease in any of our cases. However, dermabrasion of the external alar scar was performed in 6 cases with excessively oily skin, to eliminate apparent suture track marks.

Six (30%) of the first 20 cases showed variable degrees of alar rim notching in the nostril's floor at the junction of the alar and sill excisions. This incidence was significantly reduced to only 2 (5%) of the next 40 cases after adding a few 5/0 polyglactin 910 subcutaneous sutures before closure of the vestibular floor skin ($P = .01$).

COMMENT

Despite numerous articles on alar base narrowing, the management of cases with a wide nasal base and alar flar-

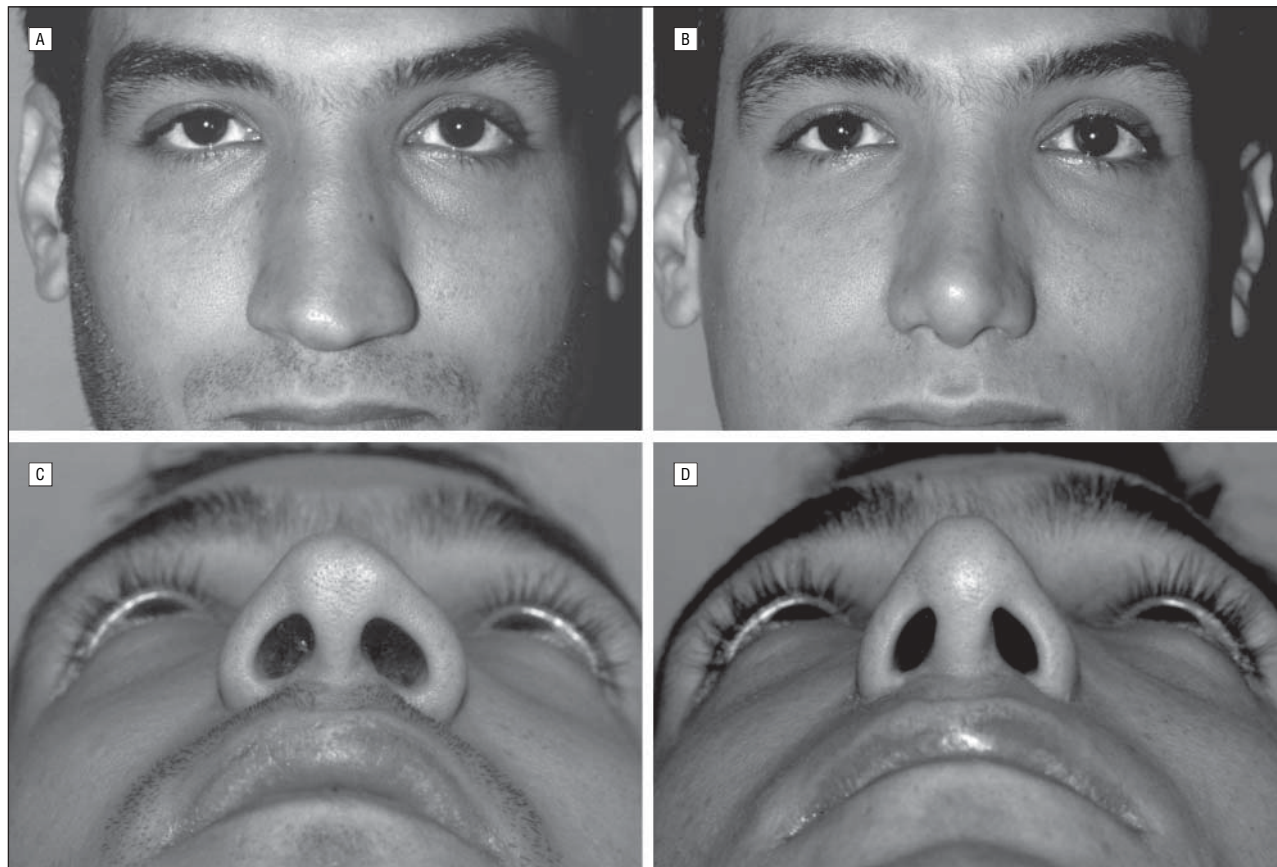


Figure 5. Preoperative photographs (A and C) of a patient with a wide nasal base and asymmetric alar flaring (more on left side). The postoperative photographs (B and D) of the same patient 3 years after a combined alar base excision, which narrowed the nasal base, corrected the asymmetric flare, and changed the wide, horizontally oriented nostrils to more oval, vertically oriented nostrils.

ing remains limited to 1 of the following 2 options: the use of cinching sutures to pull the ala together or the use of combined alar base excision to remove parts of the alar lobule and the vestibular floor.

The major advantage of the cinching suture technique is avoidance of external incisions. However, many limitations are associated with the use of this technique for wide noses with excessive flaring because it may lead to bunching of the floor of the nostrils and excessive rounding of the alae. These limitations stimulated some authors^{13,14} to modify the technique by combining it with excisions from the vestibular floor or the alar lobule.

Another important limitation of the cinching suture technique is that it can only result in symmetric medialization of the alae, which makes it inapplicable in cases with asymmetric flaring (**Figure 5A** and **C**). This problem is demonstrated in the first case reported by Millard¹³ in his original description of the alar cinch technique, in which the technique effectively narrowed the alar base but failed to correct the preexisting asymmetric flare. Finally, despite the numerous modifications in suturing material and the technique used, the long-term effect of the cinching sutures remains questionable.

Considering these limitations, the cinching suture technique failed to replace alar base excisions as the standard method for alar base narrowing.

In the present study, a combined alar base excision was used in 60 cases with a wide nasal base and alar flaring.



Figure 6. Photograph of a revision case who underwent operation elsewhere shows obliteration of the alar-facial crease after excessive external alar wedge resection.

The excision combines an external alar wedge resection, which decreases the alar flare, with an internal nostril floor resection that approximates the alae, thus decreasing the width of the nasal base. The present study found that starting with the internal resection allowed a more accurate judgment of the amount of external alar excision needed, thus avoiding any overresection, which is usually the main cause of obliteration of the natural alar-facial crease (**Figure 6**). This obliteration did not occur in the present study because, even in the cases with a very wide nasal base, after

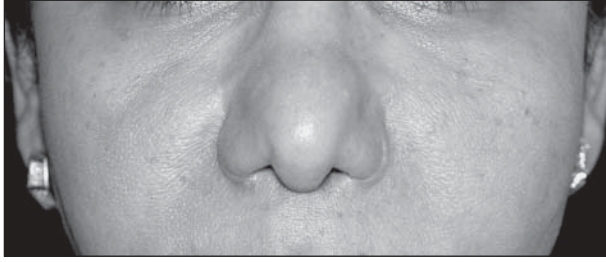


Figure 7. Photograph of a revision case who underwent operation elsewhere shows obvious scarring that parallels the alar crease as a result of high alar wedge excisions placed above the natural crease.

the internal excision was completed, the amount of external alar excision required was found to be less than that initially calculated, thus leading to a more conservative external resection with preservation of the natural alar crease (Figure 4B and D).

Although the results of alar base excisions are gratifying, many surgeons are reluctant to perform such excisions for fear of obvious scarring and/or unnatural results. In all of the present cases, the external incision was placed in the alar-facial crease and continued in the groove between the sill and the upper lip. This left an inconspicuous scar that was well hidden in the depth of the natural alar crease. This is in contrast with other higher incisions²⁴⁻²⁶ that are placed above the crease to avoid crease obliteration, which in the present patient population results in obvious scars that parallel the alar crease (Figure 7).

Dermabrasion was needed in 10% of our cases, who had thick oily nasal skin, to eliminate suture marks of the external wedge excision. It is recommended to counsel the patients about the possibility of needing dermabrasion postoperatively to improve their alar scars.²⁷

Finally, notching of the alar rim, which can occur at the junction of the alar and sill excisions, was significantly reduced by adding a deep layer of 5/0 polyglactin 910 sutures ($P = .01$). These deep sutures help to bunch the subcutaneous tissue of the vestibular floor, which will evert and take the tension off the skin edges, thus minimizing the risk of postoperative notching.

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