Tip Nuances for the Nose of African Descent

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Abstract

Keywords

- ► rhinoplasty
- ► ethnic
- ► nasal tip
- ► African
- ► African-American

Patients of African descent are seeking rhinoplasties today more than ever. As a result, the rhinoplasty surgeon must be aware of the ethnic, cultural, anatomic, and surgical issues pertaining to this patient population. In this article, the nuances of rhinoplasty as it pertains to the nasal tip in patients of African descent are discussed.

Cosmetic and reconstructive rhinoplasties are among the most commonly performed plastic surgery procedures within the United States. 1,2 Presently, the non-Caucasian demographic accounts for $\sim\!\!33\%$ of the United States population. Conservative estimates indicate that this group, which includes Africans, Asians, and Hispanics, is among the most rapidly growing group within America and will constitute $\sim\!\!54\%$ of the population by 2050. 3 These factors as well as an improved socioeconomic status have resulted in a dramatic increase in patients of African descent seeking rhinoplasty procedures over the past decade. Against this background, it is essential that the rhinoplasty surgeon have a thorough understanding of the subtleties related to culture, beauty, anatomy, and surgical techniques when considering rhinoplasty procedures on patients of African descent.

Patient desires and expected outcomes are strongly influenced by one's perception of beauty, which is influenced by a multitude of factors including race, ethnicity, and culture. Thus, a thorough understanding of these concepts and how they impact upon one's sense of self and concept of beauty is significant when considering rhinoplasty on patients of African descent

Race is an objective term that defines people of the same heritage who share similar physical attributes, and *ethnicity* is

a concept that is self-assigned and more subjective. *Culture* refers to a set of patterned beliefs or values that may or may not take race or ethnicity into account.⁴ Importantly, members of the same race may not necessarily share ethnic identities or the same conceptualization of beauty. Furthermore, because people from similar ethnic backgrounds may have very different cultural values, it is important to note that cultural forces play an important role in how individuals perceive beauty. These concepts of race, ethnicity, and culture in addition to the complex interplay among them should be explored when evaluating patients from diverse ethnic backgrounds who are seeking cosmetic rhinoplasty procedures.

The concepts of racial preservation and racial transformation are just as important to appreciate when evaluating patients of African descent. In addition to the desire to improve aesthetic appearance, harmony, and facial balance, most patients of ethnic backgrounds also have a strong desire to achieve outcomes that preserve racially and ethnically concordant features. Racial transformation, in contrast, refers to the transformation of a patient's features to obtain a more Westernized or otherwise racially discordant appearance. Patients whose desired surgical outcomes result in racial transformation should be educated about the potential risks of this objective, and these requests should generally be discouraged.

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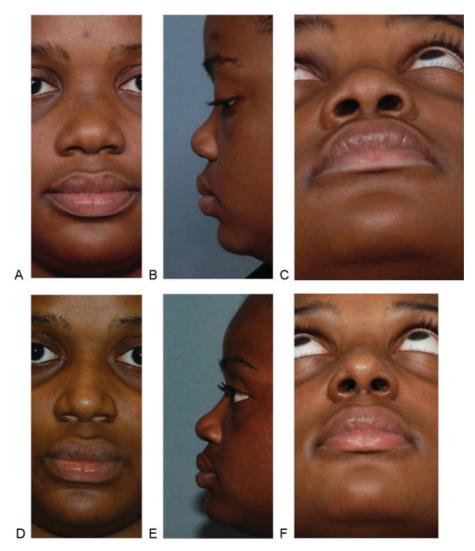


Figure 1 (A to C) Preoperative and (D to F) postoperative views of a patient of African descent 6 months after undergoing endonasal rhinoplasty with medial and lateral osteotomies, septal cartilage dorsal onlay graft placement, inter- and intradomal suture placement, bilateral rim grafts, and alar base stitch placement.

Although the desired outcomes of patients of African descent seeking rhinoplasty cannot be generalized, it is important to understand that some common trends do exist. These desires often include achieving definition and projection of the dorsum, improving tip definition, in addition to narrowing the boney and alar base (Fig. 1). The aim of this article is to discuss patient and anatomic characteristics pertaining to rhinoplasty in individuals of African descent, including evaluation and surgical techniques that may be used to improve upon the appearance of the nasal tip.

Anatomy and Function

The term African-American nose, although used commonly, does not capture the wide variability of nasal types that exist amongst Africans. In support of this concept, Ofodile et al described the diversity of African-American nasal anatomic features by highlighting the African, Caucasian, and Native American backgrounds of African Americans living within the United States. Despite this variability, there are some consistent anatomic features that are often observed in the noses of patients of African descent who are seeking rhinoplasty procedures. These features are seen in the soft tissue envelope as well as the boney and cartilaginous framework.

The nose is composed of the soft tissue envelope, cartilaginous and boney framework, as well as the internal lining. In the nose of African descent (NAD), the soft tissue envelope of the nasal tip is often thicker when compared with that of the leptorrhine nose. This thick nasal tip skin often effaces the structure of the underlying cartilage, resulting in decreased tip definition in many patients of African descent seeking rhinoplasty.

The supportive nasal framework consists of the nasal bones, the upper lateral cartilages (ULCs), the lower lateral cartilages (LLCs), and the premaxilla. The nasal bones articulate with the nasal processes of the frontal bone and maxilla superiorly and laterally.⁶ An obtuse angular relationship between the nasal bones at the dorsum will result in an illdefined dorsum and broad midnasal vault, both of which are common complaints of patients of African descent seeking

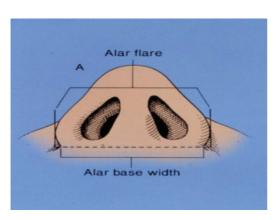


Figure 2 Alar flare, described as the maximum degree of convex bowing above the alar crease. Alar base width, the distance between both alar creases. (Used with permission from Farkas LG, Hreczko TA, Deutsch CK. Ann Plast Surg 1983;11:381–389.)

rhinoplasty. Short nasal bones, a common feature in the NAD, are at risk for midvault collapse following rhinoplasty if not properly handled during osteotomies.⁷

The ULCs articulate cephalically with the undersurface of the nasal bones and caudally with the LLCs in the scroll area. The ULCs provide support to the midnasal vault and together with the nasal bones determine the width of the nasal bridge and the definition of the nasal dorsum. The ULCs are supported by the underlying quadrangular cartilage of the nasal septum with which they are in continuity. The quadrangular septal cartilage is a prime source of grafting material during rhinoplasty but may be inadequate for cartilage harvest in the patient of African descent; thus alternative sources for grafting material should be considered. The septum ends caudally at the anterior septal angle and plays an important role in supporting the nasal tip.

The LLCs play a dominant role in providing nasal tip support. Each LLC consists of a medial, middle, and lateral crus. The size, contour, and orientation of the paired LLCs determine the width and definition of the nasal tip. When dissected free of the surrounding soft tissue, the LLC is seen as a three-dimensional structure changing orientation in multiple planes to give structure and shape to the nasal tip. The transition from the medial to the lateral crus of the LLC defines the intradomal angle. A broad intradomal angle contributes to a wide bulbous-appearing nasal tip with poor definition. The interdomal angle is the angle that is created between the two intermediate segments of the LLC; this interdomal angle partly dictates the distance between the nasal tip-defining points. It is the reflection of the contours of the LLC through the overlying skin that determines the definition and aesthetic appearance of the nasal tip. The nasal tip is devoid of any cartilaginous support caudal to the lateral crus of the LLC. Thus, the shape and resilience on the nostril along the alar margin depends greatly on the rigidity of the soft tissue in the region of the ala. On basal view, the nostril takes on a pearlike shape and can vary widely in size. The nostril shape and size are determined laterally by the alar margin, medially by the columella, inferiorly by the nasal sill, and superiorly by the soft triangle. Laterally, the alar rims should transition smoothly from the nasal tip to the alar facial grooves. A significant degree of flare along the alar margin is common in individuals complaining of wide nostrils. The alar base width is distinct from alar flare and is measured as the distance between the two alar-facial transition points (Fig. 2). The appropriate alar base width is determined from patient to patient based on the aesthetic proportions of the entire face. The premaxilla and the anterior nasal spine in the NAD are typically not as prominent in comparison to the leptorrhine nose. These differences contribute to an acute nasal labial angle and diminished nasal tip support.

Nasal tip support is complex and based upon relationships between several adjacent structures. These include the LLCs, fibrous attachments between the ULCs and LLCs, suspensory ligaments overlying the crura and anterior septal angle, the abutment of the LLCs with the pyriform aperture, the nasal septum, and the anterior nasal spine.^{8,9}

Preserving nasal function is paramount when considering rhinoplasty procedures. The nasal valves are critical to nasal function and play a critical role in regulating nasal airflow. The external nasal valve is composed of the caudal septum, columella, and premaxilla medially and the alar lobule, ala, and dilator muscles laterally. 10 The internal nasal valve angle formed by the junction of the septum and the caudal aspect of the ULCs is the narrowest portion of the nasal airway and accounts for the majority of the upper airway resistance.¹⁰ Whereas the internal valve angle should be between 10 and 15 degrees for adequate airflow to occur during inspiration in the leptorrhine nose, it is generally wider in the NAD. The nasal valve area, described by the area bound by the septum, the caudal end of the ULC, and the head of the inferior turbinate, is believed to have a greater impact on upper airway resistance in noses of African descent.¹¹

Assessment and Evaluation

During preoperative planning, it is important to evaluate the nose from all views. The septum and the internal and external nasal valves should be assessed during both quiet and deep inspiration. Additionally, a thorough intranasal exam that evaluates the size of the head of the inferior turbinate and how it impacts upon the nasal valve area is essential as plans to execute alar and boney base-narrowing techniques may also narrow the valve area, potentially worsening nasal function.

Frontal View

When considering characteristics of the nasal tip such as width, definition, shape, and symmetry, assessing the nose from the frontal view is most helpful, recognizing that large within-group differences exist in patients of African descent. Alar base width can range from a distance as narrow as the length between the medial canthi, to a length as wide as the interpupillary distance, or anywhere between (**Figs. 3A**, **3C**). It is important to recognize that patients of African descent seeking rhinoplasty procedures are often those

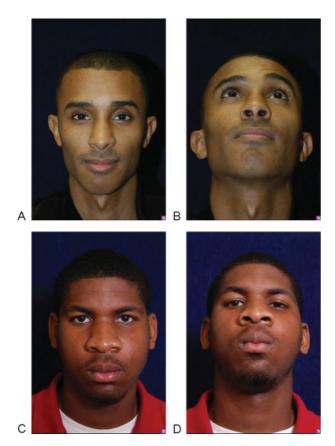


Figure 3 (A) A patient of African descent demonstrating interalar width equal to the distance between the medial canthi and (B) nostril-to-infratip lobule ratio approaching 2:1. (C) A patient of African descent demonstrating interalar width equal to the distance between the medial limbi and (D) nostril-to-infratip lobule ratio of \sim 1:1.

whose alar base width extends beyond the medial canthi and approaches the medial limbus. Nasal tip definition can also be evaluated from the frontal view. As previously discussed, the thickened soft tissue envelope and the weakness of the LLCs often contribute to a poorly defined nasal tip. When assessing nasal tip definition, from the frontal view, one must consider bulbosity, nasal tip width, and the transition of the tip to the nasal dorsum. The contour of the tip should be continuous with the brow-tip aesthetic, or dorsal ciliary lines and the lateral borders of the tip should transition smoothly into the curvilinear contour of the alar lobule. 12 Achieving characteristics such as well-defined tip-defining points, distinct light reflexes, and smooth dorsal ciliary lines as seen in the leptorrhine nose, may not be realistic for some patients with noses of African descent. Nonetheless, the rhinoplasty surgeon operating upon the patient of African descent should seek to improve upon all of these characteristics, creating improvement in tip definition, nasal tip width, and a harmonious transition to the dorsum.

Basal View

Nostril shape and tip projection are best assessed by carefully evaluating the nose from the lateral and basal views. It is especially important to recognize the intimate relationship between nostril shape and tip projection in the patient of

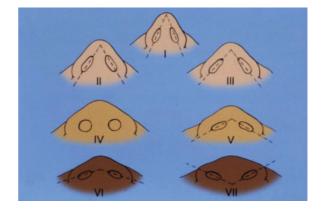


Figure 4 Nostril types, demonstrating range from vertically oriented to more horizontally oriented subtypes. (Used with permission from Farkas LG, Hreczko TA, Deutsch CK. Ann Plast Surg. 1983;11:381–389.)

African descent. As previously mentioned, there are large within-group differences in the noses of patients of African descent, and this holds true for nostril shape. Nostril shape may vary from vertically oriented, to nostrils that are more horizontal or inverted in appearance (Fig. 4). As one's nostril shape changes from vertical to more horizontal, the projection of the nasal tip decreases as well. Additionally, the nostril-to-infratip lobule ratio will decrease. In the African nose with more leptorrhine characteristics and vertically oriented nostrils, the nostril-to-infratip lobule ratio is typically 2:1 and represents a balanced and appropriately projected nasal tip (►Fig. 3B, 3D). As nasal tip projection decreases, the nostril-to-infratip lobule ratio also decreases and approaches 1:1. It is important to recognize that the size of the infratip lobule remains relatively constant when tipprojecting techniques are employed, thus a 2:1 nostril-toinfratip lobule ratio in the underprojected nose is difficult to create even if adequate tip projection is achieved. Alar flare and base width should also be assessed by evaluating the nose from its basal view. There is a wide range of acceptable nasal widths, and it is important to recognize that surgical maneuvers that increase tip projection may decrease alar flare, thus creating the appearance of narrower nose. Alar base width, on the other hand, is not significantly impacted by tip-projecting techniques.

Lateral View

Assessments of nasal tip rotation, the nasal labial angle, tip projection, and the transition from the tip to the dorsum can be assessed by evaluating the nose from its lateral view. The nasal labial angle in patients of African descent is generally more acute when compared with the nasal labial angle in Caucasian or leptorrhine noses. Ofodile and Bokhari reported the mean nasal labial angle of the Black American nose to be \sim 91 degrees in women and 84 degrees in men, 13 compared with ranges of 95 to 100 degrees and 90 to 95 degrees in Caucasian women and men, respectively. 14 There are a multitude of factors contributing to this difference in nasal labial angle between the leptorrhine noses and NADs, with the most

significant being a less prominent premaxilla and anterior nasal spine in the NAD.

Patients of African descent seeking rhinoplasty frequently request increased tip rotation. Tip rotation is determined by examining the relationships between the dorsum, lobule, and columella on the lateral view. The transition from the dorsum to the columella should be smooth, except for the possible presence of supratip and columella break points. The supratip break point is created by the separation of the septum from the dorsal line and a subtle convexity of the alar cartilages, and the columellar break point separates the most anterior segment of the columella from the infralobule. These features are more prevalent in leptorrhine noses but may be present in some patients of African descent.

The goals when performing rhinoplasty on patients of African descent are to produce a natural-appearing, harmonious, and ethnically congruent nose while maintaining or improving function. These goals can be achieved by executing surgical techniques focused on increasing the projection of the dorsum and the nasal tip, enhancing tip definition, increasing the nasal labial angle, and narrowing the alar and boney base.

Surgical Techniques

Access to the nasal tip can be accomplished by using either an open or endonasal approach. Depending upon the surgical goals, both approaches offer unique advantages and disadvantages. The open approach, while allowing for increased exposure and more precise graft and suture placement, is associated with prolonged tip edema, tip numbness, and an external scar. The transcolumellar scar associated with the open approach heals satisfactorily and provides an acceptable outcome: keloid-prone patients rarely have untoward scarring issues in this area. The presence of this scar should not be a major deterrent when considering the open approach in a patient of African descent. On the other hand, the endonasal approach is associated with less soft tissue disruption, less edema, and more rapid recovery. However, it is also associated with decreased visualization of tip anatomy and greater complexity in making precise changes to the nasal tip cartilage. In the final analysis, the decision to perform tip rhinoplasty through an open or endonasal approach should be based upon the patient's individual needs and surgeon's experience with the chosen approach.

Tip Projection and Definition

Projection of the nasal tip is impacted by the boney support at the base of the nose supplied by the premaxilla and anterior nasal spine. These bones are commonly hypoplastic in patients of African descent, and consequently the nasal tip is often underprojected in these patients. *Tip definition* refers to the degree of refinement of the underlying cartilaginous structures of the tip, smooth transitions between the tip and its surrounding aesthetic subunits, and how well the skin envelope drapes over the underlying framework. There are a multitude of techniques that can be employed to improve upon nasal tip projection in the patient of African descent (**Table 1**). These strategies include cartilage mobilization with suture fixation techniques, cartilage-grafting techniques, as well as the use of synthetic nasal implants.

Cartilage mobilization and suture fixation techniques that improve tip projection and definition can be accomplished through both endonasal and open techniques. When utilizing the endonasal approach, a marginal and infracartilaginous incision is used to gain access to the nasal tip structures and deliver the domal cartilages. Although there are many mobilization and fixation technique options that can be used to improve upon projection and definition, the lateral crural steal¹⁵ with intradomal and interdomal sutures is often helpful when dealing with patients of African descent. Mobilizing the lateral crura from the underlying vestibular lining allows the surgeon to utilize cartilage from the lateral crura to add projection to the nasal tip. Additionally, the lateral crus can also be released from its most lateral portion, allowing for even more movement toward the dome. If the lateral crus is released at its most lateral segment, it is critical that this area be reconstituted and supported with a lateral crural strut to provide support to the alar and external nasal valve (►Fig. 5A).

Domal sutures can be utilized to improve upon nasal tip projection and definition in either an intradomal or interdomal fashion. The domal segment of the LLC is often wide and poorly defined in noses of African descent. These characteristics allow for an opportunity to improve upon projection and definition with the use of intradomal sutures. Intradomal sutures are horizontal mattress sutures that are placed through the domal region of the LLCs. These sutures function by decreasing the angle between the medial and lateral crura of the LLCs, thus narrowing the width of the nasal tip, increasing its projection and enhancing its definition

Table 1 Common Defects in Patients of African Descent Seeking Rhinoplasty and Recommended Treatment Pearls

Defect	Surgical Pearls
Inadequate tip projection and definition	Domal sutures, lateral crural steal, columellar/septal extension graft, nasal onlay grafts (septal donor site preferred)
Underrotated tip	Lateral crural overlay, premaxillary onlay grafts, columella plumping grafts
Alar flare	Minimize external incisions, alar base excision + lateral crural strut, rim grafts
Increased interalar width	Alar base excision + alar base cinch

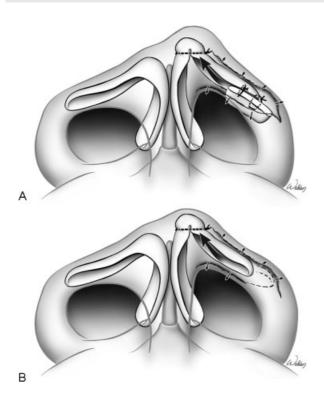


Figure 5 (A) Lateral crural release and strut placement, as well as intradomal suture placement. (B) Intradomal suture placement and lateral crural release.

(**>Fig. 5B**). The patient of African descent with wide domal arches will benefit greatly with intradomal sutures. Interdomal sutures attach the posterior medial aspect of the domes to one another; this technique serves to narrow the interdomal distance between the tip-defining points, thus enhancing the nasal tip definition.

Cartilage mobilization and suture fixation techniques such as the lateral crural steal and domal sutures are generally well suited for improving nasal projection and enhancing tip definition. However, because of the thickness of the soft tissue envelope in NADs, these techniques may result in only modest improvements in nasal tip projection and definition. To obtain more significant changes in nasal tip projection, cartilage-grafting techniques are often necessary. The septum is the preferred choice for autologous cartilage. When harvesting septal cartilage, it is important to maintain a sufficient dorsal strut and to preserve the keystone area of the septum, thus decreasing the risk of saddling, supratip depression, and airway collapse. 16 Because there is a relative paucity of cartilage in many noses of African descent, cartilage grafts from sources other than the septum may be necessary. In these situations, conchal or costal cartilage can be harvested and used as grafts within the nasal tip. Harvesting of conchal cartilage in patients of African descent should be approached with caution as the periauricular region is a highrisk area for keloid formation. For this reason, the postauricular approach to the concha is preferable to the anterior approach. Donor site morbidity can be avoided altogether by using irradiated homologous costal cartilage grafts. Irradiated costal cartilage is readily available in sufficient quantities and

its reported long-term use has been favorable.¹⁷ In general, we discourage the use of synthetic grafts for nasal tip or dorsal augmentation to minimize long-term complications such as infection and extrusion.

When considering techniques that improve upon nasal tip projection and definition in noses of African descent, the utilization of cartilage grafts is paramount. The columellar strut is essential for creating support to the nasal tip in addition to reestablishing the tip support mechanism that may have been disrupted, particularly in the open approach. The placement of a columellar strut is a logical starting point when attempting to increase tip projection in the patient of African descent, as it creates stability to the nasal tip and serves as a foundation to build upon. Furthermore, a strong columellar strut provides the long-term stability needed to support other grafts that may be placed more anteriorly on the tip for improved projection and definition. In comparison with the leptorrhine nose, columellar struts placed within the NAD can often be positioned lower on the nasal base and adjacent to the anterior nasal spine and premaxilla. Because the premaxilla and anterior nasal spine are less prominent in the NAD, there is less of a risk for clicking or malposition of the strut along the premaxilla if it is placed low but does allow for more tip stability. If additional nasal length is needed along with tip projection, a septal extension graft may prove useful and obviate the need for a columellar strut. 18 The septal extension graft can be secured to the caudal septum in end-to-end or overlapping fashion and fixated with permanent or slowly resorbing suture. Like columellar struts, septal extension grafts provide structural support to the nasal tip and decrease the risk of tip ptosis postoperatively. Once strut or septal extension graft placement is complete, the nasal tip should be reassessed and additional grafting techniques employed as needed.

Nasal onlay techniques designed to improve upon tip projection involve the placement of cartilage grafts adjacent to the domal segments of the LLC. These grafts have been popularized by many authors and can be stacked in double or triple layers to provide up to 6 mm of augmented projection (**Figs. 6A, 6B**). ^{19–22} Although it is essential that these grafts be properly carved and are not be excessively large, the soft tissue envelope of patients of African descent seeking rhinoplasty is often relatively thick, allowing generous grafts to be used. In addition, the use of grafts to enhance tip projection also results in improved tip definition, a frequent request of patients of African descent seeking nasal tip refinement.

Debulking the fibrofatty soft tissue can be considered in patients of African descent in an attempt to add additional definition to the nasal tip region following the use of suture fixation or grafting techniques and can be performed by gently removing small lobules of fat in the region of the middle crura, taking care not to injure the subdermal plexus. This maneuver should be performed judiciously, as excessive defatting can lead to devascularization and necrosis of the soft tissue envelope.

Tip Rotation

Underrotation of the tip is a common feature in the NAD due to the decreased support from the premaxilla and anterior nasal spine. When considering strategies that rotate the nose

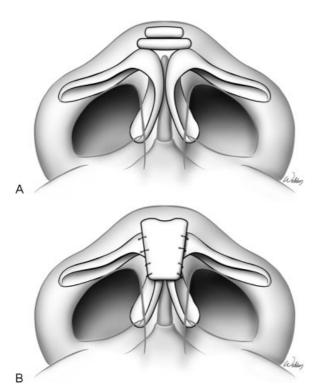


Figure 6 (A) Double-stacked nasal onlay graft. (B) Infratip lobular graft.

or create the appearance of rotation, options include the placement of premaxillary onlay grafts, columella plumping grafts, and suture fixation techniques. In the patient with significant deficiency of the premaxilla, a cartilaginous onlay graft can be placed in the premaxillary regions. Due to the generous volume of this graft that may be required, it is best to use costochondral cartilage. This premaxillary graft should be carefully crafted to straddle the region of the anterior nasal spine while not extending laterally beyond the alar base. The premaxillary graft serves as a foundation to build upon and corrects the anatomic deficiency of the premaxilla often seen in the underrotated African nose. This graft can be deployed through a hemitransfixion incision and placed within a precise pocket. Additionally, crushed cartilage plumping grafts can be placed within the nasal labial angle through a hemitransfixion or transcolumellar incision. This graft serves to add volume over the region of the anterior nasal spine and premaxilla; by doing so it softens the nasal labial angle and creates the illusion of tip rotation. Suture fixation techniques can also assist in rotating the nasal tip. If a columellar extension graft is used, the medial crura of the LLCs can be sutured to the caudal end of the graft allowing the nasal tip to be secured into the position of desired rotation. The lateral crural overlay technique described by Kridel and Konior can be effective in correcting the underrotated nose. 15 In this technique, the lateral crura are cut across their midportions, then overlapped and fixed with horizontal mattress sutures.

Alar Base Modification

Modifications to the alar base have often focused on addressing alar flare and excess nasal base width with soft tissue

excision techniques. Although these techniques are extremely helpful in addressing increased base width, they also contribute to external scars, hyperpigmentation, and an unnatural transition to the cheek or upper lip. We have found that the use of cartilage grafts placed adjacent to the rim or as lateral crural struts can serve to stiffen the rim, decrease mild to moderate alar flare deformities, and obviate the need for alar base excisions. Additionally, crural strut grafts can be placed along the undersurface of the lateral crura to flatten them and accentuate tip contour in patients with bulbous-appearing tips. When considering alar base excision techniques, it is important to correctly diagnose alar flare and recognize that it is a different entity from increased alar base width. Alar flare refers to the maximum degree of convex bowing of the alar base above the alar crease (► Fig. 2). The interalar width is the distance between the alar creases. Alar base excision and suture techniques can be localized to the base, the nostril sill, or a combination of both depending on the deformity (**Fig. 7**). If alar flaring is the problem, excision of the alar base is performed. If the problem is increased alar width, direct excisions of the nasal sill alone can be performed. If a significant amount of soft tissue excision is required to correct excessive interalar base width, the alar cinch technique, which involves releasing and repositioning the ala at its base, can be effective. In this technique, vertically oriented incisions are placed within the nasal sill and the tissue corresponding to the amount of narrowing is removed. Once this tissue is removed, the alae are cinched at the midline with a straight Keith needle (Figs. 8A to 8E).9 With the alar cinching technique, the integrity of the alar rim is preserved, and there is usually an increase in tip projection once the cinch is performed. As an adjunctive measure, alar rim grafts can be placed to stiffen the alar side wall and create the appearance of decreased alar flare. When treating the alar base, it is important to avoid placing incisions directly in the alar-facial groove and to bevel the incisions to allow for inversion of the skin edges during closure. It is also important to place deep sutures during closure to minimize scar widening postoperatively.

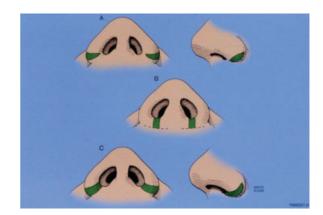


Figure 7 Techniques for alar base and nasal sill reduction. (A) Excision of alar base to treat alar flare. (B) Direct excision of nostril floor to reduce nasal sill. (C) Combined reduction of alar base and nasal floor to reduce alar flare and nostril size. (Used with permission from Brissett AE, Sherris DA. Changing the nostril shape. Facial Plast Surg Clin North Am 2000;8:433–445. 9)

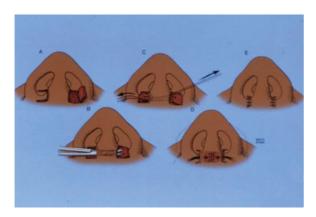


Figure 8 Alar cinch technique. (A) Vertical incisions are placed within the sill and horizontal back cuts corresponding to the desired amount of narrowing are made. (B) Tissue to be cinched may be deepithelialized (as shown) or excised, and tissue overlying the anterior nasal spine is undermined. (C and D) Cinching is performed at the midline with a straight Keith needle. (E) Nasal sill incisions are closed. (Used with permission from Brissett AE, Sherris DA. Changing the nostril shape. Facial Plast Surg Clin North Am 2000;8:433–445.9)

Aftercare

Close attention to the aftercare is critical to achieving successful outcomes when performing rhinoplasty in the patient of African descent. Scars are usually inconspicuous, and keloids or hypertrophic scarring occur less commonly around the nose than in other body parts.²³ Splints should be well placed and secured, and the patient should be adequately counseled about the possibility of an extended period of splinting if necessary, because prolonged edema is common in patients of African descent after rhinoplasty. Improvements in tip definition may not become fully evident for up to 18 months after surgery, when the swelling finally subsides.²³ Revision rhinoplasty may be considered if there are any problems that persist beyond 18 months and that are concerning to the patient.

Conclusion

Tip rhinoplasty in noses of African descent demands careful preoperative analysis, anatomic mastery, and an appreciation of the cultural issues we have highlighted. Judicious debulking of the soft tissue envelope, cartilage rearrangement and augmentation, and a focus on nasofacial harmony will improve the frequency of successful outcomes.

References

1 American Academy of Facial Plastic and Reconstructive Surgery 2009 membership survey: trends in facial plastic surgery. Available at: http://www.aafprs.org/media/stats_polls/aafprsMedia2010.pdf. Accessed September 9, 2010

- 2 Report of the 2009 statistics, American Society of Plastic Surgeons. National Clearinghouse of Plastic Surgery Statistics. Available at: http://www.plasticsurgery.org/Documents/Media/statistics/ 2009-US-cosmeticreconstructive plastic surgeryminimally-invasivestatistics.pdf. Accessed September 9, 2010
- 3 National population projections by age, sex, race, and Hispanic origin: 2008 to 2050, U.S. Census Bureau. Available at http://www. census.gov/population/www/projections/2008projections.html. Accessed September 9, 2010
- 4 Sturm-O'Brien AK, Brissett AE, Brissett AE. Ethnic trends in facial plastic surgery. Facial Plast Surg 2010;26:69-74
- 5 Ofodile FA, Bokhari FJ, Ellis C. The black American nose. Ann Plast Surg 1993;31:209-218; discussion 218-219
- 6 Safian J. A critical review of recent literature on rhinoplasty. Plast Reconstr Surg (1946) 1947;2:463-473
- 7 Ofodile FA. Nasal bones and pyriform apertures in blacks. Ann Plast Surg 1994;32:21-26
- 8 Adams WP Jr, Rohrich RJ, Hollier LH, Minoli J, Thornton LK, Gyimesi I. Anatomic basis and clinical implications for nasal tip support in open versus closed rhinoplasty. Plast Reconstr Surg 1999;103: 255–261; discussion 262–264
- 9 Brissett AE, Sherris DA. Changing the nostril shape. Facial Plast Surg Clin North Am 2000;8:433-445
- 10 André RF, D'Souza AR, Kunst HP, Vuyk HD. Sub-alar batten grafts as treatment for nasal valve incompetence; description of technique and functional evaluation. Rhinology 2006;44:118-122
- Zhu JH, Lee HP, Lim KM, Lee SJ, Wang Y. Evaluation and comparison of nasal airway flow patterns among three subjects from Caucasian, Chinese and Indian ethnic groups using computational fluid dynamics simulation. Respir Physiol Neurobiol 2011;175:62-69
- 12 Toriumi DM. New concepts in nasal tip contouring. Arch Facial Plast Surg 2006;8:156-185
- 13 Ofodile FA, Bokhari F. The African-American nose: Part II. Ann Plast Surg 1995;34:123-129
- Gunter JP, Rohrich RJ, Adams WP. Dallas Rhinoplasty: Nasal Surgery by the Masters. St. Louis, MO: Quality Medical Publishing; 2002
- 15 Kridel RW, Konior RJ. Controlled nasal tip rotation via the lateral crural overlay technique. Arch Otolaryngol Head Neck Surg 1991;117:411-415
- 16 Ketcham AS, Han JK. Complications and management of septoplasty. Otolaryngol Clin North Am 2010;43:897-904
- 17 Kridel RW, Ashoori F, Liu ES, Hart CG. Long-term use and follow-up of irradiated homologous costal cartilage grafts in the nose. Arch Facial Plast Surg 2009;11:378-394
- 18 Byrd HS, Andochick S, Copit S, Walton KG. Septal extension grafts: a method of controlling tip projection shape. Plast Reconstr Surg 1997;100:999-1010
- 19 Peck GC. The onlay graft for nasal tip projection. Plast Reconstr Surg 1983;71:27-39
- 20 Sheen JH. Achieving more nasal tip projection by the use of a small autogenous vomer or septal cartilage graft. A preliminary report. Plast Reconstr Surg 1975;56:35-40
- 21 Gunter JP, Rohrich RJ. External approach for secondary rhinoplasty. Plast Reconstr Surg 1987;80:161-174
- 22 Kang JG, Ryu J. Nasal tip surgery using a modified septal extension graft by means of extended marginal incision. Plast Reconstr Surg 2009;123:343-352
- 23 Matory WE Jr, Falces E. Non-Caucasian rhinoplasty: a 16-year experience. Plast Reconstr Surg 1986;77:239-252