Rhinoplasty in the Hispanic Patient

Stephen Higuera, M.D.,¹ Daniel A. Hatef, M.D.,¹ and Samuel Stal, M.D.¹

ABSTRACT

In the United States, rhinoplasty has traditionally been performed in Caucasian patients. Ethnic rhinoplasty is often thought of as a procedure done to reshape the nose of a black or Asian patient. Little attention has been paid to rhinoplasty in Hispanic patients. There has been a large increase in the Hispanic population of the United States, and plastic surgeons will see a concomitant rise in requests for rhinoplasty among this population. In an effort to increase our understanding of Hispanic rhinoplasty, a retrospective review of a senior surgeon's experience was performed. A retrospective chart review was done examining the senior author's (S.S.) rhinoplasty practice over the past 10 years. Hispanic patients presenting for aesthetic and corrective rhinoplasty (cleft patients were excluded) were analyzed. The Hispanic nose was divided into three archetypes. Type I is characterized by a high radix and prominent vault; these noses should be corrected by dorsal reduction and resection of caudal septum. Type II is characterized by a dependent tip with inadequate projection; dorsal augmentation with diced cartilage and tip support with cartilage grafts are important. Osteotomies should generally be avoided in this group. Type III noses are characterized by a broad nasal base with thick skin and a wide tip; rhinoplasty in this group requires correction of the dorsum-base disproportion using several techniques including columellar struts, tip grafts, and dorsal augmentation. Hispanics are projected to become the largest minority population within the next 10 years, and rhinoplasty in this population will become more frequent over time. It behooves plastic surgeons to become familiar with the different archetypes of Hispanic noses and appropriate corrective techniques for each.

KEYWORDS: Hispanic rhinoplasty, aesthetic and corrective rhinoplasty, archetypes

Webster's dictionary defines the word *Hispanic* as "of or relating to the people, speech, or culture of Spain or of Portugal and, relating to, or being a person of Latin American descent living in the United States; especially: one of Cuban, Mexican, or Puerto Rican origin."¹ The use of the word *Hispanic* in the U.S. can be traced back to the 1970s when the U.S. government used it to describe Latin American individuals and their descendants, living in the United States, regardless of race. The label *Hispanic* was chosen in part because in New Mexico, people of Spanish descent referred to

themselves as *hispanos*, which was anglicized as *Hispanic*. According to the U.S. Census Bureau's mid-decade report released in 2005, 1 in 3 U.S. residents were of non-white race origin. Hispanics continue to be the largest minority group in the United States at 42.7 million. The U.S. Census Bureau also reports Hispanics as the fastest-growing minority group. They accounted for almost half (1.3 million, or 49%) of the national population growth of 2.8 million between July 1, 2004, and July 1, 2005. The Hispanic population in 2005 was much younger with a median age of 27.2 years compared

¹Division of Plastic Surgery, Baylor College of Medicine, Houston, Texas.

Address for correspondence and reprint requests: Stephen Higuera, M.D., Division of Plastic Surgery, Baylor College of Medicine, 6701 Fannin, CC610.00, Houston, TX 77030 (e-mail: shiguera@bcm.edu).

Cosmetic Surgery in the Ethnic Population: Special Considerations

and Procedures; Guest Editor, Jamal M. Bullocks, M.D.

Semin Plast Surg 2009;23:207–214. Copyright © 2009 by Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001, USA. Tel: +1(212) 584-4662.

DOI 10.1055/s-0029-1224800. ISSN 1535-2188.

with the population as a whole at 36.2 years. If this trend continues, it is estimated that by the year 2050, Hispanics will surpass Caucasians as the largest ethnic group in America.²

A recent press release published by the American Society of Plastic Surgeons (ASPS) in March 2008 reports a 13% increase in cosmetic plastic surgery among ethnic patients. When compared with the ASPS data published in 2000, cosmetic surgery among Hispanics has increased by 173% with rhinoplasty among the top procedures requested. The 2007 ASPS national clearing house data on cosmetic demographics shows Hispanics as the second most popular group requesting cosmetic surgery with 1,011,071 patients, only behind Caucasians.³ It is imperative for plastic surgeons to become familiar with the Hispanic nose and its different archetypes. Hispanic rhinoplasty is not a novel subject. Dr. Rollin Daniel and Dr. F. Ortiz-Monasterio have previously described and classified the Hispanic nose.⁴⁻⁷

Ortiz-Monasterio defined and characterized the mestizo nose.⁵ He describes several key differences between this archetype and the Caucasian nose. Mestizos have a thicker, more sebaceous nose, smaller osseocartilaginous vault, a short medial crus and columella, weak caudal septum, and a wide alar base with rounded nostrils. These differences were emphasized by Daniel, reported in his article reviewing Hispanic rhinoplasty in the United States.⁴ Daniel classified the Hispanic nose into four major types:

type I, Castilian; type II, Mexican American; type III, Mestizo; type IV, Creole. We found similar characteristics to the ones previously described by Daniel and divided them into three archetypes. These three “archetypes” dictate the surgical techniques required for correction.

HISPANIC NASAL ARCHETYPES AND THEIR MANAGEMENT

The type I archetype usually has a normal radix height and normal tip. This nasal archetype also features prominent nasal bones with a high dorsum and, typically, a dorsal hump with a prominent, wide underlying osseocartilaginous framework (Fig. 1). A combination of surgical techniques is usually performed in this population. The dorsal reduction is done by rasping the bone and using a scalpel to shave down the cartilage. It is a good idea to use a rasp as it provides maximum control on small- and medium-sized dorsal humps. Another option is to cut the septal cartilage first and then use an osteotome to remove the bone. After dorsal reduction, we rarely trim the superior edge of the cartilage, but instead preserve the upper lateral cartilages (ULC) to maintain width and avoid midvault collapse. If the patient has wide nasal bones, lateral and medial osteotomies should be performed. The extent of hump removal determines if medial or transverse osteotomies are necessary. The lateral osteotomies separate the nasal bones from the

Figure 1 Type I Hispanic nasal archetype.

Figure 2 Type II Hispanic nasal archetype.

maxilla and allow them to move medially to reduce nasal width. This is done by following the lateral margin of the ascending maxilla starting at the pyriform aperture to avoid palpable bony ridges. It is important to have a good preoperative assessment of the patient's pyramidal versus parallel orientation of basilar nasal lines. These help dictate the direction of the osteotomy used. A greenstick fracture is then manually created at the level of the radix displacing the nasal bones medially. A medial osteotomy can be made along parallel lines to the lateral osteotomy to out-fracture an inwardly deviated nose as well. Spreader grafts are usually used to avoid the open roof deformity after osteotomies when there are short nasal bones or a large hump removed. The large nostrils and nasal base may now be addressed at this time. Depending on the amount of alar flare, we may perform an alar wedge/base resection.

Type II archetypes are significantly different from type I. These patients have a low radix without a prominent dorsum. These noses also typically have a dependent tip and decreased nasal projection (Figs. 2 and 3). To correct the low radix, these patients usually require dorsal augmentation. We like to augment and strengthen the dorsum using the previously described "Turkish delight" method.⁸ Daniel has also described a dorsal augmentation using diced cartilage wrapped in fascia. Other authors, like Ortiz-Monasterio, advocate the use of single- or double-layered septal cartilage grafts. For larger augmentations, he uses costochondral grafts.

To avoid a visible dorsal graft, Daniel and Ortiz-Monasterio both advocate the use of full-length grafts extending over the deficient bony vault.⁴⁻⁷ Daniel has avoided this by using diced cartilage wrapped in fascia.⁴ We have been using this technique in many rhinoplasty patients and have not found absorption to be a problem. Additionally, the ability to mold the graft postoperatively while it is still healing is a nice advantage. Finally, in the type II patient, tip projection must be addressed. Increasing tip projection is a challenge in these patients. This is best performed using sutures and a stabilizing strut or septal extensions (Figs. 4 and 5). Open tip suture techniques are beneficial in raising the tip.⁹ If a small increase is needed, simply suturing the medial walls of the domes together can raise the tip 1 to 2 mm by straightening out the flare of the anterior medial crura. For additional tip projection, columellar strut grafts can be placed through a vertical incision at the base of the columella and creating a pocket between the medial crura and premaxillary area. We have found that the columellar strut graft can lead to fullness in the columella; for this reason, the septal extension graft is our preferred method of lending support to the newly increased projection of the tip. Supradomal,¹⁰ shield,¹¹ and anatomic tip¹² grafts may be sutured or placed in a pocket over the tip as well. Typically, osteotomies are avoided in type II noses, as the width of the vault is usually acceptable. Base reductions vary, and the same techniques used in type I are applicable.

Figure 3 Patient of Mexican descent, preoperative and postoperative photos, type II Hispanic nasal archetype.

Type III archetypes have a wide base and dorsum, decreased nasal length, diminished tip definition, short nasal bones, and thicker, more sebaceous skin. Type III Hispanic noses have short nasal bones with a flat appearance (Figs. 6 and 7). There is decreased nasal length with a broad base and dorsum; these patients typically have a bulbous, underprojected tip. These noses are usually referred to as “mestizo,” or “chata,” which means “flat” in Spanish. Nasal base reductions, tip grafts, columellar struts, alar and nostril sill wedge resections, and alar rim grafts are usually required to

correct type III noses. These patients have an illusion of a narrower dorsum due to the dorsum-to-base disproportion. Short nasal bones are seen when the length of the bones is less than half the distance from the radix to the septal angle. Osteotomies are to be avoided in this archetype, as they may cause collapse of the lateral walls. These patients have a large disproportion between the upper and lower thirds of the nose. The lower third is usually much wider than the short upper third of the nose. Nasal base reductions are key in this archetype; when necessary, these reductions are

Figure 4 Columellar strut graft.

followed by dorsal augmentation. The surgical techniques for dorsal augmentation are the same as in type II. Type III noses usually have thicker skin requiring a more aggressive use of tip grafts to assist in tip defi-

nition. These patients sometimes have inadequate tip projection, and in this case, the standard combinations of tip sutures and grafts can be employed. The columellar strut graft is especially useful in this population because the medial crura are frequently weak and in need of structural support.¹³

The patient must be counseled concerning the appearance of his or her nose, its relationship to the underlying nasal framework, and what can be done to correct it. The surgeon must gain an understanding of the patient's goals. Although our artistic sensibilities may push us to desire the creation of a nose that is harmonious, obtaining an aesthetic shape while maintaining the patient's ethnicity, this may not be the patient's goal. They may wish to completely transform their nasal appearance to one that is more "Caucasian." The surgeon and patient must come together with a mutual understanding of their shared goals.

Although the classification schemes are helpful in organizing the understanding of the different anatomic features seen in the Hispanic population in the surgeon's mind, the same operation should not be performed for every patient of the respective archetypes. There should not be a "signature" nose created with each archetype,

Figure 5 Columellar extension graft.

Figure 6 Type III Hispanic nasal archetype.

disregarding the fact that no two noses are exactly alike. The operative plan must be designed for the specific problems that the patient presents with. To formulate this plan, nasal characteristics should be addressed and a careful description of nasal problems such as asymmetries, tip deformities, and dorsal irregularities should be made. We employ a spreadsheet that divides our examination into nasal symptoms, skin type, face shape, ethnic background, nasal proportions, anatomic measurements, and a systematic analysis of the frontal, lateral, and basal views.

Although operative techniques differ for the Hispanic nasal archetypes, there are many factors that should be generally considered when performing rhinoplasty in this patient population. In general, Hispanics tend to have thicker, more sebaceous skin. This type of skin can result in prolonged postoperative edema with increased scar formation. As well, the Hispanic nasal tip is usually underprojected due to small and thin alar cartilages.¹⁴ This combination of thick sebaceous nasal skin along with a weak cartilaginous framework creates a round and poorly defined tip. Airway is not usually an issue in Hispanic rhinoplasty unless a significant septal deviation is present. The nasal aperture and base is usually larger in Hispanics. They tend to have similar nostril flare to African American noses. Nasal base reductions with nostril sill and alar base resections are often necessary in all three Hispanic archetypes.

We have found that an open rhinoplasty allows for greater exposure and makes certain maneuvers easier to perform. One of its main advantages is obtaining direct visualization of the underlying anatomy. This gives us the ability to make a more accurate diagnosis of the bony and cartilaginous framework. As with all rhinoplasty patients, good exposure is key for obtaining a good result for these types of patients. In addition to the improved exposure, it also allows an easier avenue for insertion of columellar strut grafts to increase tip projection; placement of spreader grafts to avoid vault collapse/deformity; and onlay grafts to increase dorsum and radix height. The open technique does not come without its set of disadvantages as well. Because of the thick sebaceous skin, there is a risk of prolonged swelling. Additionally, there is the drawback of the transcolumellar scar and increased operative time. For all of our open rhinoplasties, the fibrissae (nasal vestibule hair) are trimmed and the nose is injected with 6 to 7 mL lidocaine (0.5% solution) with 1:100,000 epinephrine using a 30-gauge needle. We inject the nasal base, septum, dorsum, and tip. Pledgets soaked with 4% cocaine solution are placed along the nasal floor and over the inferior and middle turbinates to aid with vasoconstriction and local anesthesia. A transcolumellar “stair step” incision is used, and careful soft tissue undermining is performed just superficial to the lower lateral cartilages to avoid injuring the

Figure 7 Patient of Cuban descent, preoperative and postoperative photos, type III Hispanic nasal archetype.

soft tissue triangle and subsequent notching in that region.

CONCLUSION

Classifying the Hispanic nose into the three archetypes assists the surgeon in formulating an operative plan. More Hispanics are requesting rhinoplasties, and a thorough understanding of the nasal anatomy and different archetypes is key for successful rhinoplasty outcomes in this population. Type I noses can often be corrected simply by dorsal reduction with minor tip and base modifications. Type II noses typically need dorsal augmentations with open rhinoplasty to address the tip using both suture techniques and tip grafts. Type III noses have a significant vertical and horizontal disproportion. This requires correction with reduction of the wide nasal base in conjunction with dorsal augmentation. Finally, an in-depth discussion regarding the patient's surgical goal is very important. It is important to

know if the patient wants to obtain an aesthetically pleasing result while maintaining ethnicity or whether the patient wants to have a nose that appears Caucasian.

REFERENCES

1. Merriam-Webster Dictionary. Available at: <http://meriam-webster.com>. Accessed May 8, 2009
2. United States Census Bureau. Population estimates. Available at: <http://www.census.gov>. Accessed May 8, 2009
3. ASPS. 2007 National Clearinghouse of Plastic Surgery Statistics. Available at: <http://www.plasticsurgery.org/media/statistics/2007>. Accessed May 8, 2009
4. Daniel RK. Hispanic rhinoplasty in the United States, with emphasis on the Mexican American nose. *Plast Reconstr Surg* 2003;112:244-256; discussion 257-258
5. Ortiz-Monasterio F, Olmedo A. Rhinoplasty on the mestizo nose. *Clin Plast Surg* 1977;4:89-102
6. Ortiz-Monasterio F. Rhinoplasty in the non-Caucasian nose. In: Gruber RP, Peck GC, eds. *Rhinoplasty: State of the Art*. St. Louis, MO: Mosby-Year Book; 1993:171-180

7. Ortiz-Monasterio F, Olmedo A. Rhinoplasty in the mestizo nose: secondary rhinoplasty in the thick skinned nose. In: Rees TD, Baker DC, Tabbal N, eds. *Rhinoplasty: Problems and Controversies*. St. Louis, MO: Mosby-Year Book; 1988: 372–383
8. Erol OO. The Turkish delight: a pliable graft for rhinoplasty. *Plast Reconstr Surg* 2000;105:2229–2241; discussion 2242–2243
9. Gunter JP. The merits of the open approach in rhinoplasty. *Plast Reconstr Surg* 1997;99:863–867
10. Sheen JH. Tip graft: a 20-year retrospective. *Plast Reconstr Surg* 1993;91:48–63
11. Peck GC Jr, Michelson L, Segal J, Peck GC Sr. An 18-year experience with the umbrella graft in rhinoplasty. *Plast Reconstr Surg* 1998;102:2158–2165; discussion 2166–2168
12. Gruber RP, Grover S. The anatomic tip graft for nasal augmentation. *Plast Reconstr Surg* 1999;103:1744–1753; discussion 1754–1758
13. Cobo R. Mestizo rhinoplasty. *Facial Plast Surg* 2003;19:257–268
14. Milgrim LM, Lawson W, Cohen AF. Anthropometric analysis of the female Latino nose. Revised aesthetic concepts and their surgical implications. *Arch Otolaryngol Head Neck Surg* 1996;122:1079–1086