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**Guilherme Barros De Monteiro
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Schonauer, Giovanni Francesco Nicoletti
& Gisella Nele**

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Alar base symmetrization suture in ethnic rhinoplasty

Guilherme Barros De Monteiro Bussade¹ · Francesco D'Andrea^{2,3} · Fabrizio Schonauer³ · Giovanni Francesco Nicoletti⁴ · Gisella Nele⁴ 

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Abstract

Alar base surgery has been widely studied in modern rhinoplasty. After the equalization of the dorsum-tip relationship and the improvement of the nasolabial, nasocolumellar and nasofrontal angle, also alar base, needs to be harmonized also. Several classifications of alar base deformities have been described, as well as many techniques for correcting them. This work aims to demonstrate that alar base symmetrization suture (abss) is effective in keeping the nasal wings symmetrical immediately after alar wedges resection and also permits maintenance of the symmetrization during time. It is a simple technique to perform with long-lasting esthetic results.

Level of evidence: Level V, therapeutic study.

Keywords Ethnic · Rhinoplasty · Alar base · Symmetry · Nose

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✉ Gisella Nele
gisenele@gmail.com

Francesco D'Andrea
profdandrea@gmail.com

Fabrizio Schonauer
fschona@libero.it

Giovanni Francesco Nicoletti
giovannifrancesco.nicoletti@unina.it

- ¹ Rio De Janeiro, Brazil
- ² Università degli Studi di Napoli Federico II, Naples, Italy
- ³ University Federico II of Naples, Naples, Italy
- ⁴ Università degli studi della Campania Luigi Vanvitelli, Naples, Italy

Introduction

Nasal harmonization with eyes, lips, and malar region is essential for a successful rhinoplasty. In order to obtain this, alar base needs to be evaluated and eventually reduced/symmetrized. In ethnic rhinoplasty, patients frequently present with a broad nasal base. Therefore, it is mandatory to precisely manage this problem in order to achieve better natural esthetic results. Nasal width is determined by the combination of different factors: alar base width, alar flaring, nostril sill width, and columella base width [1, 2]. A normal alar width can be defined as 2 mm wider than intercanthal distance (n.v. 31–33 mm), or if the latter is abnormal, than to orbitary fissure width [3]. Different techniques have been described to correct nasal broad base such as alar wedge excision [4–6], flap advancement techniques [7], and cinching sutures techniques alone or associated with alar wedge excision [8]. In 2009, Gruber et al. created a classification and treatment algorithm [1] for broad nasal base on the basis of anatomy.

Table 1 FACE-Q Nostril Satisfaction Scale. Higher scores reflect a better outcome

TOT score	5	9	11	13	14	15	16	17	19	20
N patients	1	1	1	1	1	12	2	1	3	7

However, nostril sill distortion, asymmetry, stenosis, and recurrence are complications that can be related to these procedures.

To avoid these undesirable effects, in patients presenting with alar flare or broad alar base, we propose alar wedge resection associated with an alar base symmetrization suture. This new technique is easy to perform and permits to achieve long-lasting results, symmetry, and a natural appearance of the nostrils.

Material and methods

From July 2016 to July 2017, alar base symmetrization suture was performed in 30 patients, 20 were females and 10 males, 15 patients were Afro-Americans, while 15 were Caucasians.

Fifteen rhinoplasties were performed open, while the others were performed with the delivery technique.

Surgical technique

Operations were performed under general anesthesia. Alar wedge excision and alar base symmetrization suture were performed as the last maneuvers of the surgery.

A vertical line is drawn from the center of the alar base to the cupid's bow, in between the two labial philtrum. Infiltration is performed with Physiologic solution, xylocaine 2% and adrenaline 1:100.000. 0.3 mm down the columella, an incision of 1 mm is realized with an 11 blade. This is central control point (CCP). With a converse scissor, a detachment is performed from CCP to right alar base and from CCP to left alar base in a subcutaneous plane, in order to obtain 2 tunnels, one on the right and one on the left.

A mononylon 4-0 with a cutting tip is entered in CCP and directioned throughout the right tunnel toward the medial anterior edge of right alar base. Then it is directioned to the lateral aspect of the right alar base and then the needle goes back to CCP. It is then directioned to the medial anterior edge of the left alar base, then to the lateral edge of the left alar base and in the end to CCP once again. CCP is at the same time the entrance and the exit point. The suture is tractioned as the surgeon needs: it can reduce left and right alar base and it can symmetrize right and left alar base (video 1).

With a Castroviejo caliber, symmetry is checked. When the desired tension is reached, the suture can be closed with 7 nodes and hidden in CCP with a nylon 6-0. 1-2 stitches of mononylon 6-0 are used to hide ABSS in CCP.

Results

After a 1-year follow-up, 28 patients presented with symmetrical lasting result, while 2 patients presented with alar nostril asymmetry, 1 of them underwent a revisional surgery in local anesthesia, while the other patient was satisfied with the result.

Fig. 1 Pre operative and post operative photos at 6 months follow-up



Fig. 2 Pre operative and post operative photos at 9 months follow-up



FACE-Q questionnaire (size, shape, well matched, nostril show, look overall) was completed by each patient in order to assess satisfaction with nostrils (Table 1) (Figs. 1 and 2). In 2 patients, ABSS was removed after 6 months because of an inflammatory chronic reaction. However, in these patients, symmetry was maintained during the follow-up period. Alar base width was measured and compared with pre-operative width. Mean width reduction was 1.8 cm in males and 1.66 cm in females.

All of the patients were checked at 6 months, 9 months, and 1 year with physical exam, photographs, and in the end with a questionnaire about their satisfaction.

Discussion

It has been recently reported that the most common facial plastic surgery procedure performed in South America is rhinoplasty [9]. Moreover, according to the last census held in Brazil in 2010, 50.7% of the population declared to be black or mixed race, making African-Brazilians the official majority [10]. It is well known that nasal characteristics vary in dependence of racial characteristics. In particular, Hinderer firstly classified nasal types as platyrrhine (African), mesorrhine (Asian), and leptorrhine (Caucasian), using the nasal index and the tip index as measures to identify racial differences [11]. Therefore, Brazilian rhinoplasty could be described as one of the most challenging esthetic surgeries because of the extreme racial variety of the population.

Different authors have previously emphasized the importance of alar base evaluation to achieve harmonious results in rhinoplasty [1, 2].

Alar wedge excision [4–6], advancement techniques [7], and cinching suture techniques alone or associated with alar wedge excision [8] can be used to correct broad nasal base [8]. However, complications such as asymmetry and nostril sill distortion can still occur.

In 2002, Gruber described a technique for nasal base reduction in which he associates an alar wedge resection with a suspension suture from one alar base to another. Our technique is different because our alar base symmetrization suture goes first from CCP to an alar base and back, and then from CCP to the other alar base and back. In this way, nostril equalization and symmetrization toward the midline are achieved. During follow-up period, only 6.66% of patients presented with asymmetry of the nostrils. In 2 patients, it was required to remove alar base symmetrization suture, but this did not affect the overall results during follow-up.

In conclusion, this new technique is easy to perform and permits to achieve long-lasting results, symmetry, and a natural appearance of the nostrils.

Compliance with ethical standards

Conflict of interest Guilherme Barros De Monteiro Bussade, Francesco D'Andrea, Fabrizio Schonauer, Giovanni Francesco Nicoletti, and Gisella Nele declare that they have no conflict of interest.

Patient consent Patients provided written consent before their inclusion in this study. Additional written consent was obtained for the use of their images.

Ethical approval All the procedures performed in this study were in accordance with the ethical standards of the institutional and national Brazilian research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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