

Refinement of Broad Nasal Tip

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ABSTRACT

Introduction: Control of nasal contour has always been a key component of a successful rhinoplasty. Typically, this procedure is performed with an emphasis on narrowing the nasal tip structure. Transcrural, intercrural, columella-septal sutures or a combination of them are used for correction of a broad nasal tip.

Material and Methods: Nineteen patients were subjected to open rhinoplasty for correction of broad nasal tip. All operations were done under general anesthesia by a single surgical team using different suture techniques.

Results: The results were acceptable and most patients were satisfied with their new nasal shape. However, complications like mild infection in the suture line which was treated by antibiotics and mild wound edge overlap were noticed in the postoperative period.

Conclusion: The successful and accurate use of different suture techniques is an effective method for correction of a broad nasal tip.

INTRODUCTION

The three-dimensional anatomy and conspicuous location of the nasal tip, makes it one of the most challenging sites of facial plastic surgery [1]. Refining the very broad nasal tip has been difficult to achieve with a single technique. Operations described often violate the domes and may result in visible irregularities and collapse of the alae. Adequate narrowing can be obtained by decreasing the angle between medial and lateral crura of the alar cartilage. This narrowing is achieved predictably by removing small part at the lateral most part of the alar cartilage. Scoring of the dome can also be done [2].

From 1935 to 1980, the nasal tip surgery consisted of excising, incising or dividing alar cartilage [3,4]. The first results were usually amazing but hematoma caused narrowing and collapse of external valve used to gradually occur, especially under thin skin [5].

Techniques intended to preserve and reorient the nasal tip cartilages are used, while maintaining

or restoring the intrinsic support mechanisms [6]. General principles for suture techniques to control tip shape are discussed. The algorithm presented includes four sutures, all of which are not necessary in every case. These sutures include (1) The transdomal sutures to narrow the individual domes (2) The interdomal suture to provide symmetry and tip strength and sometimes to narrow the tip complex, (3) The lateral crural mattress suture to reduce lateral crural convexity and (4) The columella-septal suture to prevent tip drop and adjust tip projection. The lateral crural mattress suture is newest of these sutures [7].

MATERIAL AND METHODS

A total number of 19 patients underwent rhinoplasty for correction of broad nasal tip between November 2008 to December 2011. Eleven cases (57.9%) were females and eight (42.1%) were males. All cases were operated by a single surgical team using open rhinoplasty technique. The age ranged between 18 and 36 years old with average age 29 years. The operation used in this study was open rhinoplasty under general anesthesia. The follow-up period ranged between 6 to 12 months.

Surgical technique:

Under general anesthesia, the patient was in supine position and head of the table elevated 15 degrees. The face and nose were prepared and draped.

A columellar broken incision was used. The incision was extended as a rim incision in both sides. The skin was dissected and elevated from the lower lateral cartilage for good exposure of both alar cartilages. All soft tissue over the lateral and between the medial crura of the lower lateral cartilage was removed. Hemostasis was secured using bipolar diathermy. The sutures using 5/0 prolene were used. According to each case, the

correction of the broad tip needed either intercrural, transcrural, columella-septal sutures or a combination of them. The cartilage was redraped by the nasal skin to see the nose from different directions. Further sutures might be added or repositioned to correct the dome of the nose. The incision was closed by 6/0 prolene keeping in mind to accurately adjust the wound edges. The sutures were removed in the 5th postoperative day.

RESULTS

All patients had a set of preoperative and postoperative standardized photographs for follow-up. A significant reduction in nasal tip was seen in all patients underwent nasal tip refinement. The open approach which combines a broken, transcolumellar

incision with bilateral rim incisions, offers good exposure of the nasal tip structures. With fine technique and attention to details of exposure, the transcolumellar scar was hardly visible. The great advantage of the use of sutures for alar cartilage reorientation and repositioning lies in the fact that at any point the sutures used may be removed and replaced under vision until correctly positioned and tensioned. One patient (5.3%) suffered from mild infection in the suture line which was treated by systemic and topical antibiotic. Another patient (5.3%) presented with mild wound edges overlap in the columella. Two patients (10.5%) were not satisfied with their nasal tip results. Otherwise the results were acceptable and the patients (89.5%) were satisfied with the new shape of their nasal tip.



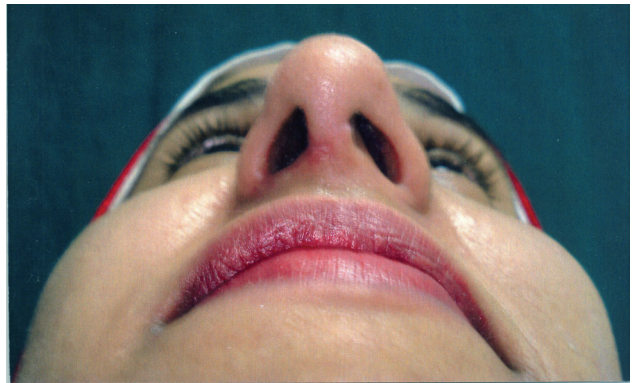
Case (1): Preoperative.



Case (1): Postoperative.



Case (2): Preoperative.



Case (2): Postoperative.



Case (3): Preoperative.



Case (3): Postoperative.

DISCUSSION

The modern era of nasal surgery has introduced a philosophy of preservation and orientation of nasal tip structures. Current methods seek to preserve and augment the existing support structures in conjunction with modifying the native cartilages framework [8].

Operative experience enhances the surgeon's ability to diagnose the underlying abnormal anatomic divergences and correct them through grafts, suturing, resection, dome division and possibly dorsal modification. A thorough understanding of the three-dimensional topography of the nose and tip also improves the surgeon's ability to exert and maintain control of the nasal tip, achieving lasting results and avoid the over operated appearance that results from excessive tip narrowing [9].

The intercrural suture technique was first described in 1980 by McCollough, English, Tardy and Chen as an effective nasal tip surgery. The convexity of the alar cartilage is one of the most common deformities and it requires attention during rhinoplasty. The use of intercrural suture allows create concave contour to be created in this structure [6].

The final result of nasal refinement is influenced by factors such as type of cartilage and degree of enlargement of the nasal tip, degree of intrinsic strength of the lower lateral cartilage and tensile strength of suture, thus promoting a higher or lower dome approximation [8].

The thickness of the skin is a determining factor when improving the nasal tip contour [6]. In patients with Caucasian nose, the result is more significant because their skin and lower lateral cartilage are thinner [8]. In patients with a thicker skin, excessive subcutaneous tissue and a thicker lower lateral cartilage, the effect of the suture can be more discrete [10].

In this study it is proved that using of a combination of different types of sutures can reform the alar cartilages and a good nasal contour can be achieved easily through an open technique of rhinoplasty.

Conclusion: The accurate combination of intercrural, transcrural and columella-septal sutures with excision of excess subcutaneous tissue is an effective method to better sharpen the nasal wide broad tips. It is easy to apply sutures especially under visualization through an open rhinoplasty.

REFERENCES

- 1- Lo S. and Rowe-Jones J.: Suture techniques in nasal tip sculpture: Current concepts. J. Laryngol. Otol., 121 (8): E10, 2007.
- 2- Chait L. and Ritz M.: A new approach for refinement of the very broad nasal tip. Br. J. Plast. Surg., 44 (8): 572-4, 1991.
- 3- Peck G.C.: Techniques in aesthetic rhinoplasty. 2nd ed. New York: Thieme-Stratton, 1990.
- 4- Papel I.D.: Interlocked transdomal suture technique for the wide interdomal space in rhinoplasty. Arch. Facial Plast. Surg., 7 (6): 414-7, 2005.
- 5- Kridel R.W., Konior F.J., Shumrick K.A., et al.: Advances in nasal tip surgery: The lateral crural steal. Arch. Otolaryngol. Head Neck Surg., 115 (10): 1206-12, 1989.
- 6- Antonio C.N.N., Giovana R., Denise B.R., et al.: Nasal tip narrowing: Minimally invasive suture technique for thick nose tip. Int Arch. Otolaryngol. [Online], Vol. 15 (3): 302-7, 2011.
- 7- Gruber, Ronald P. and Friedman G.D.: Suture Algorithm for the broad or bulbous nasal tip. Plast. Reconst. Surg., 110 (7): 1752-64, 2002.
- 8- Antony C., Jason D., Bloom, et al.: Domal stabilization suture in tip rhinoplasty. Arch. Facial Plast. Surg., 11 (3): 194-7, 2009.
- 9- Nitin C., Maya G., Sardesai, et al.: Nasal tip refinement: Analysis of surgical technique, efficacy and secondary effect of skin Thickness. Aesth. Surg. J., 30 (1): 39-43, 2010.
- 10- Becker S.R.: Suture contouring of the nasal tip. Arch. Facial Plast. Surg., 2 (1): 34-42, 2000.