Closed Rhinoplasty Using Auricular Cartilage: A Case Report

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Abstract: This paper describes a case report of a patient with a cleft of nostril associated with the alar cartilages. Literature suggests both open and closed rhinoplasty procedures for correction of deformed nose either by augmenting or reducing the nasal structures. Closed rhinoplasty advocated, with the need for augmentation of lower lateral cartilages using auricular cartilage as an onlay graft and secured with a bolster dressing.

Key words: Closed rhinoplasty, Auricular cartilage, Lower lateral cartilage

INTRODUCTION

Surgery to reshape nose is a common plastic surgery procedure as it can increase or decrease the size of the nose. Not only is the nose the central aesthetic feature of the face, but if it is misshapen a functional problem may compound the cosmetic distortion. The characteristics of nose are inherited from parents and develop during adolescent years. The deformities of nose characterizes with displacement of deformed alar cartilage, deviation of septum and nasal bones. Proper clinical assessment is very essential to diagnose the nasal deformity and for choosing appropriate technique of rhinoplasty. The type of deformity indicates for the need of augmentation or reduction of the nasal structure.

CASE REPORT

A 20 year-old female reported to our department with a chief complaint of deformed nostril presenting on the right lower half of the nose since birth. On clinical examination revealed that, the alar cartilage was deformed associated with buckling of alar cartilage, tipping caudally (fig-1). Surgery was planned under general anesthesia. Local anesthesia was infiltrated over the right auricle. Linear incision made on the dorsal surface of the ear (fig-2), blunt dissection made to expose conchal cartilage (fig-3). Conchal cartilage incised without damaging the skin and harvested (fig-4). The incision is closed with a subcuticular suturing using 4-0 vicryl.

Local anesthesia injected at the junction of lower and upper lateral cartilages, at marginal incision, nasal septum, alar base and infraorbital nerve. The incisions for closed rhinoplasty are transverse intercartilagenous and another incision through the lateral portion of the columnella internally. Submucosal blunt dissection was performed to connect with the other end (fig-5). Auricular cartilage harvested is cut into desired shape and with the help of a trocar is tunneled through and secured over the lower lateral cartilage as an onlay graft. The graft is secured to lower lateral cartilages with vertical mattress suture using 5-0 prolene. The incisions are closed using 5-0 vicryl suture. Bolster dressing given externally for additional support (fig-6). Regular follow up done and suture was removed after 10 days. The graft is secured in its position providing a good nasal contour till date (fig-7).

DISCUSSION

The nose, as the most prominent facial feature, becomes the focus of psychologic and social attention when it is distinguished by anomalous features. Nasal aesthetics are central in our appreciation and the attractiveness of the face. The balance of elements of the nose from any point of view affects the overall balance and aesthetics of the entire face. Understanding nasal aesthetics and the interdependence with the rest of the face is as important as the technical skill and experience required to perform the elegant and complex operation of rhinoplasty. Rhinoplasty originated as a reconstructive procedure, which, in essence, was a form of nasal augmentation. In 500 BC, Sushruta pioneered the Indian method of nasal reconstruction with the use of the forehead flap. In the 1800s, two German surgeons, Carl von Grafe and Johann Dieffenbach, made significant advances in rhinoplasty techniques. In subsequent years, Dr John Roe described the endonasal approach in 1887, and Drs. Joseph Safian and Gustave Aufricht described advanced techniques.

Open rhinoplasty has been ensconced in controversy...
due to unnecessary scarring, reduction of the tip support, extended operative time and excessive postoperative tip swelling. The closed approaches continue to have their proponents, for very good reasons and appear to be especially useful for simple tip and dorsum correction\(^3\). Open rhinoplasty is indicated over closed rhinoplasty in cases where excessive deformity or revisions or regrafting procedures required. The timing of nasal surgery has to be delayed until the nasal complex is close to mature size.

Reconstructive surgeons, in applying different methods have used various autogenous and alloplastic, such as bone grafts, various cartilages and range of manufactured materials, to augment the tissue for nasal deformities. Each has its own advantages and disadvantages. Cartilage grafting is a critical component of the final nasal reconstruction and is used for augmentation of dysmorphic lower lateral cartilage. Most commonly used are auricular, septal or rib cartilages. Rib cartilages harvesting has unfavorable donor site morbidity, with risk of pneumothorax. Septal cartilage often could be defective due to cleft or might be insufficient. Auricular cartilages possess advantage of its curvature as it can take the shape of alar cartilages with proper recontouring\(^2, 3\). Graft anchoring is very essential during closed rhinoplasty as there are chances of failure are common.

**CONCLUSION**

Rhinoplasty surgery has become more predictable over the years. As the understanding of the nasal anatomy and nasal/facial aesthetics has improved and the availability of augmentation materials has increased, the surgical outcomes have become more consistent and predictable. Rhinoplasty surgeons should thoroughly understand the anatomy, have an appreciation of facial and nasal aesthetics, accurately define the surgical problem, and adhere to meticulous surgical technique. Doing so ensures consistent results and minimizes complications. After one has determined the cause behind a deformity the operative principles should be oriented towards correcting it. The spectrum of indications of rhinoplasty in patients is very wide\(^6\). The augmented graft has to be anchored properly. The anchor must be considered a fundamental cause for producing the displacement of alar domes and the irregularity in shape of nostril. The auricular cartilage is a safe, effective and versatile graft material in nasal deformities.

**REFERENCES**

LIST OF PHOTOGRAPHS

Fig. 1- Preoperative

Fig. 2- Linear Incision Placed Over Right Auricle

Fig. 3- Blunt Dissection Done to Expose Auricular Cartilage

Fig. 4- Harvested Auricular Cartilage

Fig. 5- Tunneling Through the Incisions Submucosally

Fig. 6- Bolster Dressing after Securing Graft

Fig. 7- Post Operative View after 3 Months