

Correction of the Crooked Nose by Septorhinoplasty

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Abstract: *A crooked nose draws attention to the face that no amount of make up or jewelry can ever compensate. The goal of surgery is to improve the nasal airflow, while also improving the appearance of the nose. Septorhinoplasty is an operation that combines septoplasty with rhinoplasty in order to improve the function and appearance of the nose. Septoplasty is a corrective surgery done in order to straighten the deviated nasal septum, and is perhaps one of the most commonly performed ENT procedures. In this study, we have combined the procedure of septoplasty along with rhinoplasty to improve the appearance along with improving the function of the nose.*

Keywords: Septorhinoplasty, septoplasty, crooked, septal, deviation

1. Introduction

The nose being one of the most prominent feature of the face, even a slight external deviation is noticeable to the viewer. As ENT surgeons, the bulk of the patients that we treat approach us for functional correction of the nose as there is not much awareness amongst our general public about the aesthetic aspect. In most cases it is seen that doing a good septoplasty goes a long way in correcting the external nasal deformity, as we are all aware of the dictum “as goes the septum so goes the nose”. But in certain cases the external deformity also need to be addressed with osteotomies or augmentation after correction of the septum.

The first known mention of rhinologic surgery first appears in the Edwin Smith papyrus dated from 3000 to 2500 BC. Rhinoplasty techniques were carried out in ancient India by Sushruta around 800 BC as chopping off the nose was a common form of punishment during that period.

During the reign of the Romans (27 BC – 476AD), Celsus published the 8 -tome De Medecina, which described plastic surgery techniques and the procedures for the correction and reconstruction of the lips, ears, nose etc.

The west was unaware of the existence of Sushruta Samhita until the 11th century, when Ibn Abi Usaibia, an Arab physician from Damascus translated it from Sanskrit to Arabic.

In the late 19th century, the most common operation in the US was the Bosworth operation, wherein a specialized saw was used to remove the deviated portion of the septum along with the corresponding mucosa! Ingals introduced en bloc resection of small sections of septal cartilage in 1882. Around the same time, cocaine was becoming widely used during surgery and with it refined surgeries became more feasible.

In 1887, John Orlando Roe, performed the first closed rhinoplasty, for correction of saddle nose deformity.

Asch in 1899 was the first to suggest altering the tensile curve of the septal cartilage, instead of resecting it by proposing the use of full thickness cruciate incision.

In 1902 and 1904, Freer and Killian described the sub mucus resection operation, wherein they advocated the raising of

mucoperichondrial flaps, and resecting the cartilaginous and bony septum, leaving behind a 1 cm strut of dorsal and caudal strip to maintain dorsal bony support.

In 1907, Jacques Joseph published his Treatise on Rhinoplasty wherein he featured the various nasal deformities and their surgical treatment. Many consider him as the “father of modern facial plastic surgery” .

In 1921, A. Rethi introduced the open rhinoplasty approach, featuring an incision to the columella to facilitate modifying the tip.

Metzenbaum and Peer were the first to manipulate the caudal septum, using a variety of techniques, as the classic SMR was less effective in correcting this area of deviation. In addition, Metzenbaum, advocated the use of swinging door technique of septoplasty, and Peer in 1937 recommended removing the caudal septum, straightening it, and then replacing it in the midline.

In 1947, Cottle, introduced the hemitransfixion incision and advocated the primacy of the closed rhinoplasty approach. In 1957, A. Sercer advocated the “decortication of the nose,” which featured a columellar incision open rhinoplasty that allowed greater access to the nasal cavity and to the nasal septum.

Nonetheless, in the mid -20th century, despite refinements of the open technique, endonasal rhinoplasty was the commonly used practice – until the 1970’s when Padovan presented his technical refinements, advocating the open rhinoplasty approach. He received support from Wilfred Goodman (late 1970) and Jack Gunter (1990) who did extensive work to propagate the open rhinoplasty approach.

2. Aim of the study

The aim of the present study was to do a functional correction of the nose with concomitant correction of any evident external nasal deformity using both external and closed rhinoplasty approach.

Selection criteria

- All cases of atraumatic crooked nose with nasal blockage.
- All cases of traumatic crooked nose sustained during road traffic accident, blunt trauma etc

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Fresh cases of RTA with # nasal bone were not included in the study.

3. Materials and Method

In the present study a total of 23 cases underwent septorhinoplasty.

The name, age, sex, occupation and address have been recorded in every case and detailed history and clinical findings were documented for every case. A diagnostic nasal endoscopy and functional assessment of respiration was done in every case.

All cases of traumatic crooked nose underwent a CT scan.

Co-existing rhinosinusitis, if any was treated conservatively pre operatively. Necessary pre-operative investigations for surgery under general anesthesia was done for all cases.

A set of pre-operative and post operative photographs were taken for all patients which included frontal, right and left profile, right and left lateral, a basal and a helicopter view with the head in the Frankfurt plane.

All cases were operated under general anesthesia. After initial evaluation, if only septoplasty with lateral osteotomy was needed, then those cases were selected for a closed approach. But if tip work was also needed for some particular patients, then those were done using the external approach. For the external rhinoplasty approach, an inverted V or W incision was made in the mid columellar level and the caudal end of the quadrilateral cartilage identified after elevation of the skin flap and separating the medial crura of the lower lateral cartilage(LLC). Bilateral mucoperichondrial and mucoperiosteal tunnels were created and deviated portion of the bony and cartilaginous septum was then corrected. After that external nasal deformity was corrected using percutaneous lateral osteomy and paramedianosteomy. Any nasal dorsal deformity if present thereafter was then addressed. Before closing the incision the inferior end of the columella was re attached to the anterior nasal spine and re-enforced with a columellar strut.

Septal splints were applied to bilateral nasal cavity and the external nose was covered with a plaster of paris (PoP) cast which was removed after 4 weeks.

In the post operative period application of ice packs were advised to reduce swelling. Only 8 cases required post op anterior nasal packing.

4. Results and observations

A total of 23 patients were included in the study during the 2 year period. Majority of the cases were due to trauma and only 5 cases non traumatic. In a study conducted by Vikash Sinha et al 62.5% were found to be idiopathic and only 25% were due to trauma. All the patients belonged to the age group between 14 years and 48 years. We encountered 16 male cases and 7 female cases. All the cases presented with nasal obstruction along with external deviation of the nose involving either the bony third or the cartilaginous portion or both. Post – operative complications like periorbital oedema

and ecchymosis were present with both the open and closed approaches and there was no statistically significant difference.

All the cases were assessed 4 weeks and 3 months after surgery. Although functional correction was achieved in all the cases, total correction of the external nasal deviation was achieved in only 70% of the cases as was evident from the two sets of photographs.

5. Discussion

Deviations of the nose pose a particular challenge in nasal reconstruction, which can vex even the most experienced of surgeons, as there is inevitably a combination of functional and aesthetic abnormalities which need to be addressed. Ellis and Gilbert defined a crooked nose as one that is displaced from the midline plane of the face without any loss of the supporting skeletal framework. Crooked nose is frequently found in clinical practice today as a result of blunt trauma from sports injuries or road accidents. Neglected or partially reduced nasal fractures usually result in a crooked nose associated with surface depressions and irregularities. Crooked nose also may occur as a congenital or idiopathic deformity. Forceps-assisted or breech delivery often is mentioned as the etiology of injury. The consequences for the patient are severe in both functionality and esthetic term. Still more important than the social aspect of the crooked nose is its psychological impact on the person concerned. In our world, as we are all well aware, the face plays the crucial role in social relations as it is the first thing people see upon meeting.

When analysing the nasal dorsum in the frontal plane by dividing into thirds, we may get a potential 27 type of variations. We should diagnose where the bones are twisted. If the nasal bones are shifted off of the midline, then medial and lateral osteotomies will suffice. However, if there is an inherent deviation of the nasal bones, these locations must be identified, and the bone must be cut in these locations – intermediate osteotomies – to allow us to straighten the nasal bone. Analysis should continue with evaluation of symmetry of the middle third of the nose. One attempts to determine the relationship of the upper lateral cartilage with the nasal bones, particularly if there is any narrowing, step-off deformity, or skewing. Scarring or warping in the middle vault is also assessed. The lower third of the nose includes the medial, middle, and lateral crura of the lower lateral cartilages. Asymmetry from septal deformity in this area is appreciated by skewing of the tip-defining points from the horizontal. The caudal edge of the septum may be apparent because it protrudes into one nostril or the other. The lower lateral cartilages may have intrinsic deformities that lead to asymmetry. Internally, the septum is analyzed for deviations, particularly those deflections that are high dorsal or caudal. Of high importance in this region is the area of the internal nasal valve, which is formed by the caudal free edge of the upper lateral cartilage, the septum, and the nasal floor. Any angle at less than 10 may result in nasal airway obstruction.

The approach for septorhinoplasty must be chosen after careful considerations of the external nasal deformity that must be addressed. More than 30 years have passed since the

introduction of open approach in North America. From a survey analysis conducted amongst 178 ENT and Facial plastic surgeon practising in North America, it is clear that this approach has gained wide acceptance as a good approach, if not the preferred approach, for rhinoplasty. One of the most striking observations from this analysis was that open approach is used by 53% of surgeons most of the time, and in surveying contemporary facial plastic surgeons, 63% of them performed this approach most of the time. This is of particular interest because the open approach to rhinoplasty has been ensconced in controversy since its inception, and this indicates an exceptional acceptance of this approach over the past 30 years. Proponents of closed rhinoplasty initially criticized this technique, vigorously citing potential problems such as unnecessary scarring, reduction of tip support, extended operative time, and excessive postoperative tip swelling. However, it is clear that the open approach can be advantageous by offering better exposure to a small surgical field. The open approach allows the surgeon to better diagnose the deformity through inspection, to better execute certain maneuvers, and to teach and learn the operation with greater ease. It may also be that revision rates for primary open approach are less than those for closed rhinoplasty.

6. Conclusion

Septorhinoplasty as a treatment for crooked nose addresses both the functional as well as the aesthetic component. Only correction of the external deviation does not afford functional relief to the patient. As ENT surgeons are routinely performing septoplasty operations, combining it with rhinoplasty gives a better overall result. Though the basic surgical steps remain the same, modifications are required according to individual need and surgical expertise. We should always look to make incremental improvements while addressing the external deformity. A proper pre operative counseling and a realistic level of expectation in both the surgeon and the patient can give a satisfactory result in most of the cases. Experience and maturity of the surgeon goes a long way in fashioning a desirable outcome.

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Pre – operative and post operative (4 months)