

Septorhinoplasty for the Crooked Nose

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ABSTRACT:

BACKGROUND:

The externally deviated nose represents a complex cosmetic and functional problem. Its correction remains one of the challenging problems in rhinoplasty.

OBJECTIVE:

To evaluate the result of correction of crooked nose by septorhinoplasty with fixation of nasal septum to the anterior nasal spine.

METHODS:

54 patients have undergone primary septorhinoplasty through a closed approach including full mobilization of the septal cartilage, osteotomy to reduce the displaced lateral nasal wall and finally fixing the septal cartilage to the anterior nasal spine.

RESULT:

The minimum follow-up period was 6 months. Recurrence rate for nasal deviation 10%. The aesthetic results were considered good to excellent in all patients, as judged by both the surgeons and patients.

CONCLUSION:

Complete mobilization of septal cartilage without scoring along with its fixation to the anterior nasal spine is satisfactory for correcting crooked nose.

KEY WORDS: crooked nose. externally deviated nose, twisted nose.

INTRODUCTION:

The nose is termed deviated when both the septum and the external vault are displaced. With the exception of the congenitally deviated nose, such as that associated with cleft lip, deviated noses are mostly traumatic in origin⁽¹⁾.

This results from external trauma or failed rhinoplasty procedures. Because of the intimate relationship of the bony and cartilaginous framework of the nose, the effects of fractured nasal bones may extend to involve the nasal septum, the upper lateral cartilages, and even the alar cartilages. To achieve successful correction of the deviated nose, all anatomical components involved in the deformity should be adequately recognized and surgically corrected. i.e. both nasal bones and the septum must be corrected using a one stage septorhinoplasty technique^(1,2).

Despite the many methods devised for correcting the externally deviated nose, the recurrence rate of nasal deviation remains high.^(3,4,5,6,7) The external approach to the septoplasty is an option for the treatment of the severely deviated nose but the fear of collapse of the nasal dorsum, has led to the

development of external cantilever sling technique in septorhinoplasty⁽²⁾.

Traditionally, scoring has been a successful means of controlling the curvature of

cartilage. Unfortunately; it is associated with cartilage instability⁽⁸⁾. Guyuron stated that the weakness in the cartilage resulting from gentle scoring is often minimized by the formation of fibrous tissue at the scored sites with proper splinting, similar to bone healing⁽⁹⁾. Byrd et al advised the use of mattress sutures, rather than scoring, for correction of septal deformity. The sutures provide reinforcement of the cartilage much as rebar does in concrete^(8, 10, and 11). A crooked septum is commonly corrected by resecting the central component leaving an L-shaped strut. If the horizontal component of the L strut is crooked, it is commonly corrected by scoring while if the vertical component is crooked, it is best corrected with a batten graft. The mattress suture works well to correct both the vertical and the horizontal component of the L-shaped strut⁽¹¹⁾.

PATIENTS AND METHODS:

This study included 54 patients seeking septorhinoplasty to correct external nasal deviation; (male: female ratio, 3:2; mean age is 25 years

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ranges from 15 to 45 years). All patients had various degrees of nasal obstruction. Septal surgery was necessary for all patients, not only to improve breathing but also to achieve a straight nose.

43 patients related their nasal deviation to nasal trauma and 11 patients had no history of previous trauma. A full history was obtained from each patient. Nasal trauma, nasal obstruction (complete or incomplete, unilateral or bilateral) and previous nasal operations were noted. Both clinical and radiological assessments of patients were done. All patients were operated on using the closed approach. Under general anesthesia, 1% xylocaine with 1:100,000 units of epinephrine were infiltrated locally. A transfixion incision placed directly on the caudal edge of the septal cartilage. The caudal 1cm of the septum was dissected down to its attachments with the anterior nasal spine. The dissection was done on both sides of the septum starting on the concave side first. As the dissection proceeded cephalad, the perichondrium was less densely adherent and could be elevated with a periosteal elevator over the remainder of the septum and the perpendicular plate of ethmoid and continued down the maxillary crest and nasal floor. The septal cartilage was then freed from the maxillary crest and posteriorly from the bony septum. Any spurs which interfered with the medialization of the lateral nasal bone after osteotomy were resected. One (Figure-of-eight) 3/0 absorbable suture was used to fix the septum to the anterior nasal spine. Through bilateral intercartilaginous incisions, cephalic trimming of both alar cartilages was performed when needed. Separation of the upper lateral cartilages from the septum was done on both sides preserving the underlying mucosa. Following this, the cartilaginous and bony hump removed if it needed. Rasping was then used to smooth out any residual irregularities. Only after dehumping, reduction of

the upper lateral cartilages is considered; this is performed only if necessary. Bilateral osteotomies were performed for all patients. The transfixion incision was closed and the mucoperiosteal flaps were matted using 4-0 absorbable sutures in a running fashion, to eliminate any dead space thus preventing hematoma formation. Two portions of X-Ray film were used as supports for the septum on both sides minimizing the need for bulky intranasal packing; this was limited to Vaseline gauze pack. Skin closure tapes and a Plaster of Paris nasal splint were kept in place for 10 days.

RESULTS:

Bony deviation limited to the upper third of the nose was found in 12 patients, cartilaginous deviation confined to the lower two thirds in 16 patients and the remaining 26 patients had a mixed bony-cartilaginous deviation. The most common septal deviation affecting nasal symmetry are those involving the dorsal and caudal parts of the cartilaginous septum. The postoperative follow-up period ranged from 6 -12 months (a mean of 7 months) during which periodic clinical examination and photographic documentations were performed for evaluation. Septal surgery was found to be necessary in all patients (100%) to correct the external deviation and to improve breathing. Most of the patients (90%) were satisfied with their aesthetic and functional results. The unsatisfied (10%) group was due to cosmetic rather than functional outcome in form of simple residual nasal deviation without nasal obstruction. The revision consists mainly of repeating the lateral osteotomy to correct an inadequately mobilized nasal bone.

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Fig.1: Left views are preoperative and right views are 6 months postoperatively.

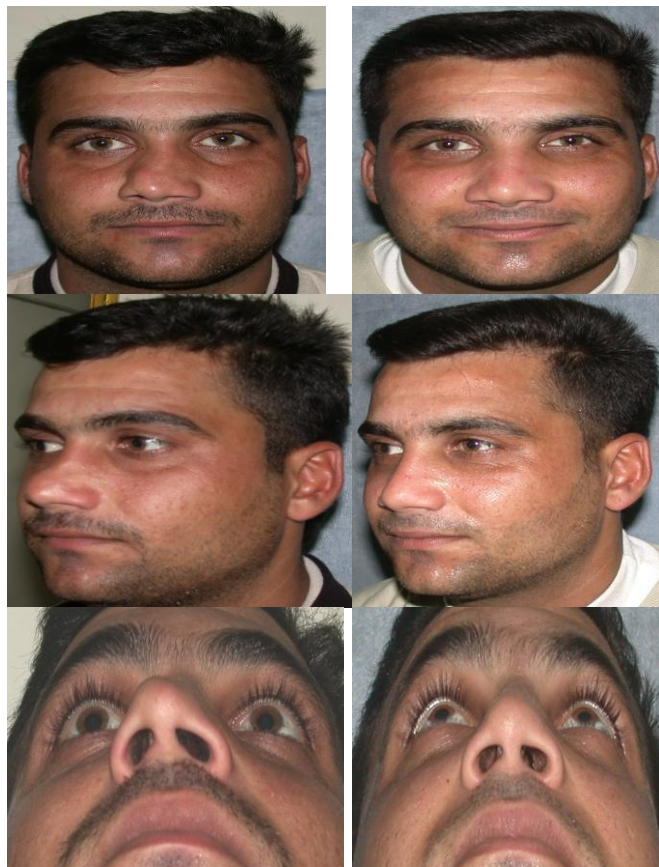


Fig.2: Left views are preoperative and right views are 6 months postoperatively.

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Fig.3: Left views are preoperative and right views are 7 months postoperatively .



Fig.4: Left view is preoperative and right view is 6 month postoperatively.

DISCUSSION:

In emergency treatment of the fractured nose, the septal problems are frequently neglected. This may result in incomplete correction or recurrence of the external nasal deviation ⁽¹⁾. The septum has a memory and, if not permanently modified, has a tendency to become distorted.

Many techniques have been advocated as a solution but mostly are ineffective when the septum is folded in multiple planes ⁽²⁾. The forces causing septal deviation may be extrinsic or intrinsic to the septal cartilage.

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Extrinsic forces include those secondary to deviation of the nasal pyramid, vomer, perpendicular plate of the ethmoid or maxillary crest as well as forces acting through the attachments of the upper and lower lateral cartilages. Failure to achieve complete release of these forces will contribute to the recurrence of the nasal deviation. Intrinsic deviating forces may be secondary to growth or injury to the septal cartilage itself. Although it is said that these intrinsic forces must be overcome by weakening the cartilage through scoring, overpowering the deforming forces with permanent horizontal Mustarde sutures or by grafts⁽¹⁰⁾, We found that fixation of the completely mobilized septal cartilage to the anterior nasal spine is proved to be essential for the success of the procedure. Indeed; the nasal spine is the only stable point for septal fixation. If the septal deviation is not repaired, it can prevent the medial displacement of the lateral wall after the osteotomy. During follow up period, most of the patients have improved air way along with convincing aesthetic improvement. It is our belief that if the cartilage can be straightened outside the nose, it can also be straightened in situ without compromising its structural role in the dorsal and tip support. Although using the external rhinoplasty approach provides an excellent exposure to the septum, it requires extensive undermining over the nasal tip and therefore the potential for unpredictability of the "shrink wrap" effect⁽¹²⁾. For this reason we prefer the closed approach. Preservation of the mucosa during separation of the upper lateral cartilage from the septum minimizes the potential for late cicatricial narrowing of the internal nasal valve. In addition, there will be less bleeding as well as spreader grafts, if needed, can then be placed in this closed space that is separated from the nasal cavity^(12,13). It is essential to avoid over resection of the upper lateral cartilages to prevent internal nasal valve collapse, furthermore, when they have been appropriately preserved, the transverse portions of the upper lateral cartilages act as auto-spreader grafts, maintaining the integrity of the internal valves⁽¹³⁾.

CONCLUSION: Fixation of the completely mobilized nasal septum to the anterior nasal spine without scoring is recommended during septorhinoplasty for the crooked nose.

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