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Case Report

Crooked nose - extracorporeal septoplasty to the rescue: case report

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ABSTRACT

The nasal dorsum necessitates intervention at the level of its underlying septal support, in marked deformities, to achieve an acceptable outcome. Conventional intranasal septal access gives limited correction in severe deviations and often an extracorporeal approach is required. This technique, improves the individual's nasal airway as well as the nasal aesthetics, even in the most advanced deformities. The extracorporeal procedure was undertaken in a robust gentleman with a gross internal and external deformity with a satisfactory result.

Keywords: Crooked nose. Septoplasty, Rhinoplasty. Extracorporeal

INTRODUCTION

As goes the septum thus goes the nasal dorsum. Septal manipulation and positioning determines the outcome of a deviated and a crooked nose. Septal surgery the bread and butter procedure for the rhinologist spans over a wide spectrum from a minimal correction to gross deviation, with the septum juxtosed to the lateral nasal wall. Conventional septal surgery and septo-rhinoplasty procedures may often not correct a severe septal deformity and thus result in a residual nasal deformity. With these surgical procedure with its limitations and inability to tackle all grades of deformities of the nasal septum.[1] Extracorpeal septoplasty a novel procedure thus has been introduced and widely followed. Gubisch was the first to publish the largest series on extracorporeal septoplasty in 1995 and a later series in 2005.[2-4] His series comprised more than 1000 patients during a 15-year clinical experience. The extracorporeal procedure was undertaken in a robust gentleman with a gross internal and external deformity with a satisfactory result.

CASE REPORT

A 32 yr old gentleman had a septum which was acutely buckled to the right side with the caudal border touching the lateral nasal wall. Externally too there was an s shaped deformity (Figure 1). The septum was exposed with an inverted v conventional external rhinoplasty incision. The domes were divided in the midline, and the upper lateral cartilages released laterally, thereby exposing the septum. On either side sub mucoperichondrial flaps were elevated, to delineate the entire cartilaginous and anterior bony septum. The cartilaginous and bony septum was resected with a paramedian osteotomy, separating cartilaginous septum from maxillary crest and fracturing bony septum as posterior as possible retaining the cribriform plate and the sphenoid rostrum. The septum was reconstituted outside on a metal instrument plate (Figure 2). A small amount of non-structural supportive cartilage was harvested from the cymba. Bilateral spreader grafts were placed on dorsal part of septum. Lateral osteotomies were undertaken by

the external approach. Neo-septum with spreader graft was reposited in the nose. Areas of fixation were the caudal end of the nasal bones, upper lateral cartilage and maxillary crest. Fixation was carried out by suturing the dorsal border of the newly reconstructed septum with the upper lateral cartilages, while 26 number one and half inch needles were used for assisting in fixation of septum. The caudal septal border was sutured to the periosteaum of the nasal spine. While the inferior border was positioned over the maxillary crest (Figure 3). Columellar strut and tip graft were fabricated from the ear cartilage. Soft PVC splints were placed along either side of the septum. The inferior and anterior edge of each splint was trimmed to fit securely along the floor of the nose and just alongside or slightly posterior to the medial crura cartilages (Figure 4). The splints were sutured in place with through-and through 3–0 black nylon transfixation suture followed by merocele. Plaster of Paris cast were applied Columellar sutures, POP cast and nasal splints removed on the 10th postoperative day. The 4th week post operative as visualized on anterior, right lateral, left lateral and inferior nasal view was highly acceptable to the patient and the surgeon alike (Figure 5).

Figure 1 (a-d): Preoperative anterior, right lateral, left lateral and inferior profile.

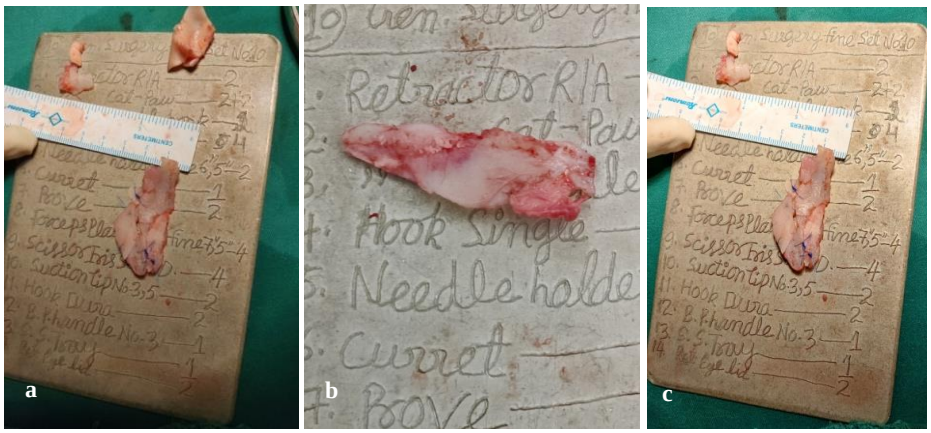

Figure 2 (a-c): Cartilage restructured on table, segments shaved, straightened and sutured together.

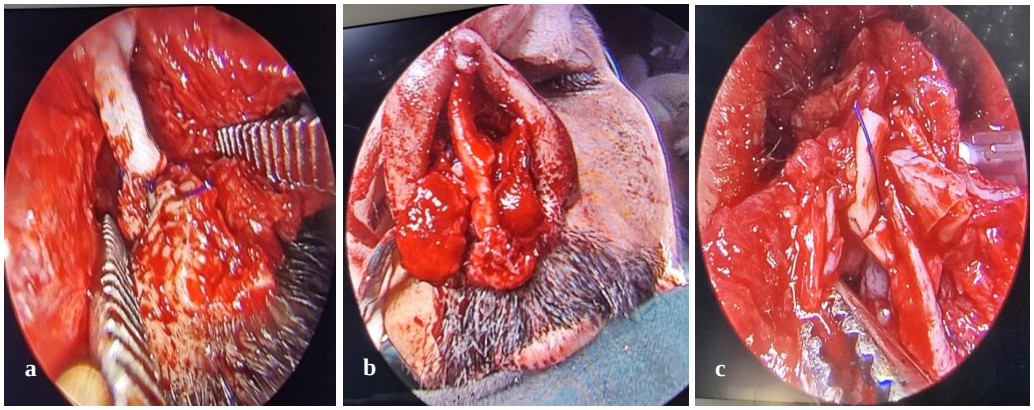

Figure 3 (a-c): Reconstructed straight septum in situ, caudal end sutured to periostium of nasal spine region.

Figure 4 (a-b): Reconstructed straight septum in situ (intraop).

Figure 5: 4th week postoperative (a) anterior, (b) right lateral, (c) left lateral and (d) inferior profile.

DISCUSSION

Extracorporeal septoplasty is infact a component of septo-rhinoplasty as a gross internal septal deformity usually presents with a grotesque nasal appearance. The correction of the former thus even improves the nasal aesthetics. Correction of the septal deformity in vitro, i.e. by taking it out of the body and by cutting, shaving, drilling. grinding, trimming, stitching and finally remoulding to an appropriate shape and size and then repositioning back in its bed, is extra-corporeal septoplasty".

"Crooked nose" terminology appropriately covers all C or S shaped or entirely displaced, to one side, deviation of the nasal pyramid from the median line. In such a nose the effect on the patient is severe wrt functional and aesthetic aspects, as great difficulty in nasal respiration is always combined with unsightliness that cannot be hidden.[5]

In 1950s, King et al advocated "complete septum should be removed and corrected in gross deviations.[6] Gubisch in 1995 noted that prominent deviations of the septum more so on dorsal and caudal end of cartilaginous septum were quite difficult to treat with the in vivo, conventional pre-maxilla-maxilla Cottle's approach of septoplasty. Thus, he proposed an extracorporeal septoplasty approach for gross nasal deviations.[4] On the other hand there is a school of thought critical of this technique wrt the stability in keystone area and difficulty in performing this procedure. Caudal septal deviation in which the posterior septal angle is slipped off from the nasal spine was earlier tackled by the endonasal septoplasty utilizing the "Swinging Door" technique.[1]

Gubisch advocated two areas for fixation of the reconstructed septum and thereby to secure it i.e. the caudal end of the nasal bones, to reattach the cephalic dorsal septum and the second site of fixation being the maxillary crest, where the posterior septal angle is reattached. The former is carried out by suturing the reconstructed septum to the upper lateral cartilage or by placing a transcutaneous U-suture and the latter by drilling a hole through the nasal spine and suturing the newly reconstructed neocaudal septum down to the maxillary crest.[3] Though not an easy procedure and with a long and slow learning curve, the efficacy of this technique for straightening a deformed septum and replacing it in the nose to restore nasal function, is unmatched. Likelihood of encountering a 'step deformity 'is a common aesthetic complication, more so in the area of transition from the bony dorsum to the reconstructed cartilaginous dorsum.

Song et al, technique of scoring and thinning for straightening or repositioning the deviated dorsal septum too is utilized. Sutures, bone or cartilage battens are supplemented to retain these changes.[7] In spite of being relatively conservative or less radical and noninvasive often they don't correct severe cartilaginous deviation as the cartilage memory or the inherent tensile forces persist and can't be countered. Therefore, the deviation comes back later on. The extracorporeal septoplasty is ultimately the panacea for correction of the severely deviated caudal septum and also overcomes the memory of the cartilage.

Most et al modification of the Gubisch's technique in 2006 simplified the reconstruction and reduced the aesthetic complications along the bony and cartilaginous dorsum. He advocated excision of almost the entire cartilaginous septum (akin to Gubisch), except for a 1.5-cm dorsal septum remnant which was sutured to the reconstructed septum on the concave side of the dorsal remnant.[8] Posterior septal angle was fixed to the nasal spine similarly as per Gubisch technique.[3] Most series achieved a par excellence aesthetic and functional outcome.[8]

Bloom et al reported complications of endonasal septoplasty which included hemorrhage or septal hematoma (6%-14%), cerebrospinal fluid leak (rare), infection (0.048%-2.5%), overcorrection (2%), septal perforation (1%-6.7%), adhesions or synechiae (7%), hyposmia (0.3%), and aesthetic deformities (4%-8%).[9] These are likely to occur even in the extracorporeal technique.

Initially Gubisch compiled complications of the extracorporeal septoplasty. Hemorrhage and septal hematoma was seen in none 0%, there was infection in less than 1%, a septal perforation in less than 1%, and aesthetic unacceptability in 7% to 11%.[4] Later, Most reported his complication rate among 37 patients undergoing the modified technique as an astonishing 0%.[8]

Last 2 decades have seen, the assessment and evaluation of the functional and aesthetic outcome of the technique and modifications introduced for correcting a severely deviated septum.[10.11]

Earlier series reported untoward aesthetic outcome in 11 percent subjects after extracorporeal septoplasty.[12] Extracorporeal septoplasty is considered by some as' unacceptable" as there is likelihood of skeletal destabilization. Crucial issue in extracorporeal septoplasty is reimplantation of the neoseptum that necessitates reattachment of both the cephalic dorsal neoseptum and the caudal part to the anterior nasal spine.[12] For fixing the neoseptum it was advocated to suture septal cartilage with U-shaped sutures between the upper lateral cartilages, anchoring with transseptal multiple mattress sutures, and drilling a hole in the anterior nasal spine through which sutures can be done.

We utilized the Gubish extracorporeal technique in our patient with an internally grossly buckled septum and and external S shaped deformity. The septum was taken out and bony spurs were drilled and smoothened out. Malunited and angulated cartilage segments were disarticulated and sutured together with prolene 3/0 to achieve a straight, flat septum of adequate height. The suturing to the periosteum of the nasal spine retained a midline position.

CONCLUSION

The extra corporeal technique though time consuming delivers nasal aesthetics better than one s expectations.It straightens the deformed septum internally and thus effects the external nasal profile.Moreover there is marked improvement in the nasal patency and physiology.

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