ORIGINAL ARTICLE

Crooked Nose and its Management- Our Experience

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ABSTRACT

Aim: To find out the causes of crooked nose and results of external approach septorhinoplasty.
Methods: This is prospective longitudinal study carried out at Department of ENT Shaikh Zayed Hospital Lahore between 31st Nov 2009 and 31st July 2011. There were 40 patients who were selected from OPD came with nasal blockage and external nasal deformity. Age less than 16 years and other nasal deformities were excluded.
Results: Causes of external nasal deformities include: Developmental 21, Traumatic. 9. Residual or recurrent nasal deformity with nasal blockage after surgery 6 and 4 patients with idiopathic causes. All patients were operated external approach septorhinoplasty. Out of 40 patients 34 patients got straight septum with good airway and on patient's subjective response, 85% patients were satisfied with the shape of the nose, while 6 patients which are about 15% were not satisfied with shape of nose.
Conclusion: Developmental cause followed by trauma was the most common cause of external nasal deformity. External approach septorhinoplasty is an excellent procedure correcting both external shape and as well as nasal septum.
Keywords: Crooked nose, septorhinoplasty.

INTRODUCTION

The nose has been described as the key stone among facial features for determining individuality[1,2]. Nasal anatomy in compasses both static and dynamic structures which are physiologically and morpholologically linked[3,4]. Alteration of the nasal anatomy without understanding these dynamic relationships will always achieved a less than an ideal result. There is no routine standard surgical technique suitable for every patient with crooked nose. This is tailor mate surgery requiring the demands of individual deformity.

Septorhinoplasty is the surgery to correct the nasal septum as well as nasal deformity of the nose. With the modernization of the society demand of cosmetic values has been increased. In the majority of the centres in the world it is done mostly by the plastic surgeons and it lies in the domain of facial aesthetics. General patients has the concept that this is the work of plastic surgeon but realistically crooked nose is the only deformity that can be best handled in the hands of expert ENT surgeons. Correction of the external shape is not possible without understanding and correction of the nasal septum, because there are the minute points if they were ignored the good shaped nose can never be a functional nose. It is best that this deformity is dealt by ENT and plastic surgeons. But in this study all the crooked nose were operated in our department by ENT surgeons. Crooked nose is the most difficult deformity of the nose having deviation of the nasal septum as well as bony and cartilaginous deformity. It is always associated with tip deformity. Both of these deformities are interlinked with each other. The correction of the septal nasal deformity alone in a crooked nose is really a troublesome job. It is also very difficult to reshape the external nose without correcting the septum. The indication for rhinoplasty is a particular difficult problem when surgeon carries a huge responsibility for refusing or accepting the request. It is an easy operation to do, but is hard to get good results[5]. There are two approaches for septorhinoplasty external and internal[6]. The external approach in our experience septorhinoplasty is an excellent procedure due to good exposure.

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MATRIAL AND METHODS

Forty patients who underwent septorhinoplasty in our unit were included in study. At the first visit anatomical defects resulting in the deformity as well as status of the nasal septum causing the nasal blockage were assessed and the patients were given realistic scenario what could be achieved after surgery. Clinical photographs from three angles and full face profile and nasal base view were taken. Postoperative photographs were taken when oedema resolved completely after six weeks. All patients were operated by external approach septorhinoplasty. Results of surgery were assessed by the clinical examination of the septum and aesthetic beauty of the nose in term of satisfaction. This was combined with surgeon's clinical assessment and final result was arrived at the observation and the results were documented, tabulated and analyzed.

RESULTS

The age ranged from 16 to 50 years in our study. Mean age of patients include. Out of 40 patients 31 were males (77.5%) and 9(22.5%) were females. The male to female ratio was 3.44:1 (Table 2). The causes of crooked nose were developmental in 21 patients 52.5%, traumatic in 9 patients 22.5%, residual or recurrent deformity in 6 patients 15% and idiopathic cause were in 4 patients 10% (Table 3). Regarding the results of surgery we assessed both anatomical status as well as patient's response. As for concerning the nasal septum we obtained straight septum with good airway in 26 patients 66%, while mild deviation with fair airway in 8 patients 20% and marked deviation with poor airway in 6 patients 15% (Table 4). We obtained excellent shape of nose in 19 patients (47%) good in 8 patients 20% while 7 patients recorded 17.50% acceptable response. In this study 6 patients were not satisfied with shape of nose that was about 15%.

Table 1: Age distribution of patients

Age in years	n	%age
16 – 20	17	42.50
21 – 30	13	35.5
31 – 40	7	17.50
41 – 50	3	7.50

Table 2: Sex distribution of patients

Sex	n	%age
Male	31	77.50
Female	9	22.50

M: F ratio: 3.44:1

Table 3: Causes of crooked nose

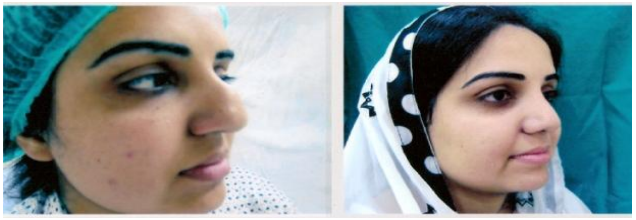
Causes	n	%age
Developmental	21	52.50
Traumatic	9	22.50
Residual/recurrent deformity	6	15.0
Idiopathic	4	10.0

Table 4: Status of septum on examination and subjective response of patient

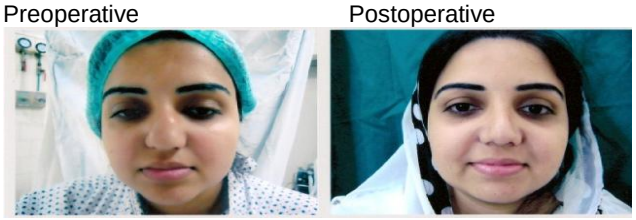
Status of Septum	n	%age
Straight septum with good airway	26	65.0
Mild deviation with fair airway	8	20.0
Marked deviation with poor airway	6	15.0

Table 5: Patients satisfaction with subjective response

Results	n	%age
Excellent	19	47.50
Good	8	20.0
Acceptable	7	17.50
Unsuccessful	6	15.0



Preoperative Postoperative



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DISCUSSION

Crooked nose is a general term used to define all deformities mainly involving deviation of the nasal pyramid with respect to the vertical midline plane of face. The deviation can be linear (I- shaped, C-Shaped or S-shaped). One side of the dorsum in a c-shaped crooked nose is concave, but the other side is convex. The dorsum and tip in an I-shaped crooked nose (linear or shifted to one side of the vertical midline of the face)[7]. It is one of the most difficult deformity seeking correction simultaneously both external shape and septum. Each deformity is different from the other and there is wide range of surgical techniques to straighten the nose and to improve the nasal function. Therefore careful preoperative and intraoperative analysis of the anatomical factors contributing to the deviation of the septum and nose. Crooked nose is almost always associated with crooked septum as was the case in our series. Correction of the nasal septum is the key to attaining satisfactory aesthetic functional results in the management of the crooked nose. Deforming forces on the septal cartilage may be extrinsic or intrinsic. So it is very important to release the nasal septum from both intrinsic and extrinsic deforming forces. The extrinsic deforming forces are released by splitting the septum from deformed nasal bone as well as upper and lower nasal cartilage. The extrinsic influences from perpendicular plate of ethmoid and vomer are released after midseptal resection eliminating important intrinsic deforming forces of the septum. After release of the extrinsic deformed forces and quadriangular cartilage resection, intrinsic deviating forces on the remaining caudal, dorsal septal cartilage, if any are repaired by suture and graft. Although endonasal approach is a valuable method for treating septum and some deviated nose but for the surgical treatment of the crooked nose, we believe that correction is best achieved through the external approach. As compared with the closed approach external approach has several advantages. Because of significantly greater exposure, the surgeon can directly assess underlying anatomic deformities. This allows for wide, three dimensional visualization and accurate intraoperative diagnosis, thereby leading to better assessment for the type of reconstruction needed and clearly enhancing the surgeon's ability to position and secure graft precisely. In septorhinoplasty especially for crooked nose, wide range of grafts are used. We frequently used spreader grafts, columellar struts and shield grafts. Spreader grafts are used for aesthetic and functional reasons in all patients. They were harvested from septal cartilage or perpendicular plate of ethmoid removed during septoplasty or from auricular cartilage. The C-shaped crooked nose creates a dorsal concavity on the other side. So for C-shaped deformity two different spreader grafts of variable thickness were used in the same pattern to convert dorsal aesthetic or asymmetrical with thicker one on concave side. A columellar strut was used for all patients with crooked noses. The graft was placed into a pocket dissected anteriorly to the caudal septum and fixed with non-absorbable sutures between nasal crurae. It was never in direct contact with nasal spine. In septorhinoplasty, various osteotomies are done to correct on asymmetric lateral nasal wall contour. Extrinsic deformity formed on septal cartilage may result from deviation of bony pyramid, requiring medial and lateral osteotomies to bring nose back to its vertical midline.[8,9] If dorsal hump is present, asymmetric hump resection followed by medial oblique and lateral osteotomy is performed. If dorsal height is adequate and there is no need for hump reduction, the median oblique and lateral osteotomies is performed. Medial osteotomy is necessary to break the continuity of the bony dorsum, thereby allowing independent movement of the nasal bone without reduction of the dorsal height. After osteotomies were completed, especially for C-shaped deformity the nasal bones of concave site was rotated with an osteotome to the midline plane away from deviation. Re-alignment of the nasal bone is similar to turning the pages of book with rotation point situated at the site in which lateral osteotomy was performed. If dorsal concavity persisted despite septal correction, suture techniques and longer spreader grafts placed between the upper lateral cartilage and /or the nasal bone and septum. We performed osteotomies in all patients. In a study conducted by Ellis and Gilbert crooked nose were classified as angulation at nasion or angulation at rhinion they reported that straight nose was obtained for 90% of angulation at nasion and for 75% of angulation at the rhinion.[10] They did not use any objective method for evaluation of their results. As compared with our results about 85% were satisfied with subjective response. In another study I-shaped and C-shaped and reported their results objectively using an angle measurement method that they defined. They reported good or excellent results for 58% of the case[11]. They measured the relevant angles with a protractor. We noted that 17% unsatisfied patients had mostly broadened base and could not achieved acquired results by osteotomies meeting the demand of patients. Among 40 patients 31 patients had straight septum on follow up examination after 3 weeks. While 9 patients had inadequate airway due to mild to moderate deviation of septum.

CONCLUSION

Our approach for the management of crooked nose includes wide exposure through external septorhinoplasty, straightening of septum while maintaining an adequate dorsal and caudal strut, realigning and reinforcing the nasal structure with sutures or grafts and performing adequate osteotomy.

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