Endonasal Septorhinoplasty for correction of deviated nose. The patient's evaluation of the results.


Abstract

The correction of deviated nose remains one of the most challenging problems in rhinoplasty, and failures in correction are not uncommon. This study to evaluate the cosmetic, functional, social and psychological outcomes of septorhinoplasty for deviated nose according to the patient's own evaluation.

A case control longitudinal study of 77 patients with deviated nose, underwent endonasal septorhinoplasty in Tikrit Teaching Hospital during the period from Jan.2007-Dec.2011. The nasal deviations were classified as: C-shape deviation, S-shape deviation, and tilt deformity. The cosmetic, functional, social activities and psychological state outcomes of the septorhinoplasty were assessed by questionnaire applied. Good cosmetic results were 61 patients (79%), high in tilt deformity were (83%). Better nasal breathing were 65 patients (89%), high in tilt deformity were (94%). Social activities and psychological state improvement were 69 patients (90%), High in C-shape deviation were (91%). Male satisfaction were more than female in cosmetic results and social activities and psychological state improvement (82%) and (94%) respectively. The conclusion that endonasal septorhinoplasty for correction of deviated nose gives good results according to the patient's evaluation. The results related to the type of deviation, it is better in tilt deformity and less in S-shape and C-shape deviations. The female patients are less self-satisfaction than male patients.

Key words: Deviated nose, Endonasal septorhinoplasty, C-shape deviation, S-shape deviation. Tilt nasal deformity.

Introduction

The deviated nose is a common reason for patients seeking aesthetic correction, which demonstrates the importance of the nose in facial aesthetics. It is usually associated with functional defect "an ugly nose is frequently a nose which cannot breathe". The social stigma may be of concern to patients because they can be perceived as "victims" affecting the patient's social activities and the quality of life. The deviated nose is the result of complex deformities which may involve the bony nasal pyramid, the upper and lower lateral cartilage and especially the nasal septum leading to cosmetic and functional complaints. The management often require more aggressive surgical plan than that for standard aesthetic rhinoplasty, and requires thorough knowledge of nasal anatomy and experience with both septoplasty and rhinoplasty. The traditional correction of the deviated nose involves septal correction, separation of both upper lateral cartilages from the septum and bony manipulation after osteotomies.

Patient's evaluation for rhinoplasty is one method for assessment of the surgery, besides the surgeon evaluation and peer surgeon evaluation. The patient's satisfaction from rhinoplasty is the aim of the surgeon, and can be taken in...
consideration in the evaluation of his work. 
The aim of this study is to review the cosmetic, functional, social and psychological results of septorhinoplasty for deviated nose according to patient own evaluation.

Patients and Methods
A case control longitudinal study included 77 patients with deviated nose, underwent primary endonasal approach septorhinoplasty carried out by the author in Tikrit Teaching Hospital during the period from Jan. 2007-Dec. 2011. All of the operations were done under general anesthesia using complete transfixation with intercartilagenous incisions which sometime extended to infracartilagenous incision. History was taken includes age, sex, marital state, nasal trauma, nasal obstruction, previous nasal surgery. ENT examinations especially nasal inspection for type of external deviation, nasal dorsum (hump, Saddling), width of nasal bridge, tip or nostril asymmetry, caudal dislocation. Anterior rhinoscope for nasal septum deformities, septal perforation, nasal valve area, turbinates. Pre operativestandard photographs *frontal, *left lateral* right lateral, and *base viewwere taken. The nasal deviations were classified as; 1. C-shape deviation. There is displacement of the upper bony septum and pyramid to one side and the whole cartilaginous septum and vault to other side. 2. Tilt deformity. (Generalized deviation to one side). Both cartilaginous and bony parts deviated to one side. 3. S-shape deviation. The deviation of the middle third (upper cartilaginous vault and associated septum) is opposite to that of upper and lower third.

Radiological and laboratory assessment tailored according to the need. The operative notes include the finding and steps of septal and external nasal pyramid and tip surgery was reported. Postoperativestandardphotographs were taken after at least 3 weeks post operatively. The patients those doing the operation from 3 months - 5 years. Wereinterviewed when attend to the clinic for follow up or by telephone contact, and asked the followings questionnaire to assess the cosmetic, functional, social activities and psychological state improvement results of the septorhinoplasty.
1. The degree of the satisfaction with the changes in the appearance of your nose:
   *Better (Percentage of patient satisfaction) >75%, 50-75%, <50%
   *Worse.
2. Any improvement in your nasal breathing if have nasal obstruction preoperatively.
   *Better (Improve nasal breathing), *Same (No improvement), *Worse.
3. Do you feel improvement in your social activities and psychological state.

Results
Seventy-seven patients were interviewed in the clinic or by telephone contact. Male were 51 patients (66%), female were 26 patients (34%). The age range from 17-43 years, (mean age was 26 years). Marital state; Single were 62 patients (80.5%), married were 12 patients (15.5%), and 3 patients (4%) were divorced. The causes were nasal trauma were 63 patients (82%), Hereditary/Familial were 5 patients (6%), unknown causes were 9 patients (12%).
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Patients seeking for both cosmetic and functional correction were 73 patients (95%), only 4 patients (5%) were for cosmetic correction (not having nasal obstruction). The nasal deformities C-shape deviation were 53 patients (69%), tilt deformity were 18 patients (23%), and S-shape deviation were 6 patients (8%).

**Cosmetic results:**
- Good results (Patient's satisfaction >75%) were 61 patients (79%) (Figure 1).
- Higher in tilt deformity were 42 patients (79%) and S-shape deviations 4 patients (66%). Male were 42 patients (82%), and female were 19 patients (73%).
- Fair results (Patient's satisfaction 50-75%) were 12 patients (16%). Tilt deformity were 3 patients (17%), C-shape deviation were 1 patient (17%), and in C-shape deviation were 8 patients (15%). Male were 7 patients (14%), and female were 5 patients (19%).
- Poor (Failure) results (Patient satisfaction <50%) were 4 patients (5%). S-shape deviation was 1 patient (17%), and C-shape deviation were 3 patients (6%), no patient in tilt deformity. Male were 2 patients (4%), and female were 2 patients (8%). (Figure 1).

**Functional results:**
- Patients with nasal obstruction were 73 patients (95%). The obstruction due to septal deviations, we excluding mucosal causes like allergic rhinitis.
- Better nasal breathing were 65 patients (89%) (Figure 1). High in tilt deformity were 15 patients (94%), C-shape deviation 46 patients (90%), and S-shape deviation were 4 patients (66%). Male were 44 patients (88%), and female were 12 patients (91%).
- Same nasal breathing (no improvement) were 8 patients (11%). High in S-shape deviation were 2 patients (34%), C-shape deviation 5 patients (10%), and tilt deformity was one patient (6%). Male were 6 patients (12%), and female were 2 patients (9%). None of patients get worse breathing. (Table 2). (Figure 2).

**Social activities and psychological state:**
- Better social activities and psychological state were 69 patients (90%) (Figure 1). Higher in C-shape deviation were 48 patients (91%), then tilt deformity were 16 patients (89%), and in S-shape deviation 5 patients (83%). Male were 48 patients (94%) and in female 21 patients (81%).
- Same social activities and psychological state were 8 patients (10%). In S-shape deviation were 2 patients (11%), tilt deformity were 2 patients (11%), and C-shape deviation were 5 patients (9%). Female were 5 patients (19%), and male 3 patients (6%). None of patients get worse social activities and psychological state. (Table 3). (Figure 2).

**Discussion**
Deviated nose is nasal deviation to either side from the line draw from Mid-glabellar area to midmenton 6. It is common in male patients (66%) in this study, because young men are twice likely to sustain fracture nose than women, when personal assaults and contact sports are more common. 82% of patients in this study have history of nasal trauma. Majority are single 80.5% may be to improve self-confidence and facial aesthetic after surgery before marriage. Most of the surgeons prefer open approach for correction of deviated nose, and attribute the half of failures of surgery to the conservative endonasal approach, and recommend a more aggressive approach through an open rhinoplasty. Lisandra (2011) found it not worsening the results, they get excellent results. The use of
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Infracartilaginous incision give good exposure even to the nasal tip in endonasal approach.

Cosmetic results:
Cosmetic outcome of rhinoplasty is a complex issue involving many factors and different standards of aesthetic values. The results of rhinoplasty are usually judged by the surgeon who evaluates the results according to his aesthetic standards. In this study the results of septorhinoplasty was evaluated from the patient’s outlook. The surgeon in many cases consider the operation is successful and satisfied by the results, but the patient not satisfied with it, and the opposite is also true. The patient's satisfaction in septorhinoplasty for deviated nose varies according to different studies from(64.5%),(84%), (88.3%)11,(90%)10,12 ,and (91.5%)4.

In this study Good cosmetic results were (79%),better results were found in tilt deformity were (83%),because the main problem in the nasal septum so correction of the nasal septum by freeing it from all connection by inferior and posterior chondrotyom with separation of upper lateral cartilage from septal cartilage is the main steps in the nasal correction and usually needs percutaneous lateral osteotomy bilaterally (using 2mm osteotome) with infracture of nasal bone.

The results was lower in S-shape and C-Shapenosal deviations, (66%),(79%) respectively, because there are complex septal deviation with obvious dorsal osteoartilagenous deformities,So requires aggressive septal surgery, dehumping if there is a hump is present, and various types of osteotomies, includes besides lateral percutaneous osteotomy, medial oblique osteotomy, intermediate osteotomy, and double level lateral osteotomy. In fracture of the nasal bones, for sever deviation sometimes out fracture, lateral onlay graft and/or spreader graft on the concave side.

Fair results were 16 patients (12%). Those patients usually with minor contour defects, dorsal irregularities, or minor tip asymmetry. Which can corrected by using precise pocket grafting or onlay dorsal graft.

Poor (Failure) results were four patients (5%). Two patients revision endonasal approach septorhinoplasty carried out for them, otherwise refuses the revision surgery as they get good nasal breathing. Revision rhinoplasty varies from(2-5%) higher in crooked nose13, and (7%) 12 in other studies to achieve the final aesthetic results.

**Functional improvement:**
Septoplasty was done to all patients even those have no nasal obstruction (4 patients), as in rhinoplasty dehumping and lateral osteotomy reduce the cross section area of the nasal valve by 25% and the pyriform aperture by 13% so increase nasal resistance14. Improvement of nasal breathing follows septorhinoplasty varies according to different studies from (84%)1,(86.2%)12,(90%)10, and (91.5%)4. In this study is (89%), and no patient get worse symptom. Some study 2.2% get worse nasal breathing(Antonio, 1995)12.

The uncorrected septal pathology and over resection of lower or upper lateral cartilage affecting valve area are significant causes of nasal obstruction15. The recurrence common because of cartilage memory and scar contracture 16. The concept that the correction of the deviated nose requires the surgeon to be radical with the septum but be conservative with the external framework 17,12. But conservative management of the septum because of it is structural significance and possible utility for further reconstruction procedures, however extensive nasal surgery needed with S-shape and C-shape deviations were sever vertical and horizontal angulations of the nasal septum which require extensive septal surgery including separation of the septal cartilage from all it is attachments, resection of the septal angulations, suturing, stenting.

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graft(splinting), scoring and even extracorporeal septoplasty may indicated in this study extracorporeal septoplasty done in 14 patients (18%).

Social activities and psychological state improvement:
The psycho-social effects of rhinoplasty must not be underestimated; patients with nasal deformity have significantly higher psychological morbidity compared with patients without nasal deformity. The most of the patients gets benefit from rhinoplasty regardless of the motivation for surgery, and felt to be better accepted in social relationships. In deviated nose any change of the appearance of the nose is expected to have significant consequences on the subject's psychological and social functioning. Functional rhinoplasty (improve nasal obstruction) also improve quality of life.

Regarding sex difference the cosmetic satisfaction, social activities and psychological state improvement was better in male than female. In cosmetic results male were (82%) and female were (73%), in social and psychological improvements male were (94%) and female were (81%) (Table 4)(Figure 3), as the females usually seeking for perfect reduction and ideal nasal aesthetic profile even in type C and S-nasal deviations. In female patients the nasal deformity are more distressed in terms of general wellbeing than male patients with nasal deformity and there is a tendency for higher global psychological impairment in women. Many patients looking for perfect nose, and when they discover that they have not achieved that, it can make them despair and feel down. It is for this reason the surgeon must be listening carefully to the patient's desires and let him to know the possibleresults and understand the limits of rhinoplasty before doing the operation, especially in over expectation and indecisive patients.

Sometimes the surgeon doing what the patient wish rather than the surgeon wish to do ideal nasal profile. In functional improvement female were (91%) better than male were (88%) because usually the external nasal deviation and the septal deviation commonly sever in the male.

Conclusions
The present study concluded that
1. According to the patient's evaluation, endonasal septorhinoplasty for correction of deviated nose gives good cosmetic, functional and social and psychological results.
2. The results related to the type of deviation, it is better in tilt deformity and less in S-shape and C-shape deviations.
3. The female patients are less self-satisfaction than male patients.

References
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Table (1): Cosmetic results following septorhinoplasty for deviated nose.

<table>
<thead>
<tr>
<th>Type of deviation</th>
<th>Nasal appearance(% of patients satisfaction)</th>
<th>Worse</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;75% (Good)</td>
<td>50-75% (Fair)</td>
<td>&lt;50% (Poor)</td>
</tr>
<tr>
<td>C-Shape deviation</td>
<td>42(79%)</td>
<td>8(15%)</td>
<td>3(6%)</td>
</tr>
<tr>
<td>Tilt deformity</td>
<td>15(83%)</td>
<td>3(17%)</td>
<td>0</td>
</tr>
<tr>
<td>S-Shape deviation</td>
<td>4(66%)</td>
<td>1(17%)</td>
<td>1(17%)</td>
</tr>
<tr>
<td>Total</td>
<td>61(79%)</td>
<td>12(16%)</td>
<td>4(5%)</td>
</tr>
</tbody>
</table>

Table (2): Nasal breathing following septorhinoplasty for deviated nose.

<table>
<thead>
<tr>
<th>Types of deviation</th>
<th>Nasal breathing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Better</td>
<td>Same</td>
</tr>
<tr>
<td>C-Shape deviation</td>
<td>46(90%)</td>
<td>5(10%)</td>
</tr>
<tr>
<td>Tilt deformity</td>
<td>15(94%)</td>
<td>1(6%)</td>
</tr>
<tr>
<td>S-Shape deviation</td>
<td>4(66%)</td>
<td>2(34%)</td>
</tr>
<tr>
<td>Total</td>
<td>65(89%)</td>
<td>8(11%)</td>
</tr>
</tbody>
</table>

Table (3): Social activities and psychological state following septorhinoplasty for deviated nose.

<table>
<thead>
<tr>
<th>Type of deviation</th>
<th>Social activities and psychological state</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Better</td>
<td>Same</td>
</tr>
<tr>
<td>C-Shape deviation</td>
<td>48(91%)</td>
<td>5(9%)</td>
</tr>
<tr>
<td>Tilt deformity</td>
<td>16(89%)</td>
<td>2(11%)</td>
</tr>
<tr>
<td>S-Shape deviation</td>
<td>5(83%)</td>
<td>1(17%)</td>
</tr>
<tr>
<td>Total</td>
<td>69(90%)</td>
<td>8(10%)</td>
</tr>
</tbody>
</table>

Table (4): Results of Septorhinoplasty for deviated nose according to sex distribution.

<table>
<thead>
<tr>
<th>Results</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasal appearance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>42(82%)</td>
<td>19(73%)</td>
<td>61(79%)</td>
</tr>
<tr>
<td>Fair</td>
<td>7(14%)</td>
<td>5(19%)</td>
<td>12(16%)</td>
</tr>
<tr>
<td>Poor</td>
<td>2(4%)</td>
<td>2(8%)</td>
<td>4(5%)</td>
</tr>
<tr>
<td>Total</td>
<td>51(66%)</td>
<td>26(34%)</td>
<td>77(100%)</td>
</tr>
<tr>
<td>Nasal breathing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved</td>
<td>44(88%)</td>
<td>21(91%)</td>
<td>65(89%)</td>
</tr>
<tr>
<td>No Improvement</td>
<td>6(12%)</td>
<td>2(9%)</td>
<td>8(11%)</td>
</tr>
<tr>
<td>Total</td>
<td>50(68.5%)</td>
<td>23(31.5)</td>
<td>73(100%)</td>
</tr>
<tr>
<td>Social and psychological improvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>48(94%)</td>
<td>21(81%)</td>
<td>69(90%)</td>
</tr>
<tr>
<td>Same</td>
<td>3(6%)</td>
<td>5(19%)</td>
<td>8(10%)</td>
</tr>
<tr>
<td>Total</td>
<td>51(66%)</td>
<td>26(34%)</td>
<td>77(100%)</td>
</tr>
</tbody>
</table>

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Figure 1: The results of endonasalseptorhinoplasty for deviated nose.

Figure (2): The results of endonasalseptorhinoplasty for deviated nose according to the types of nasal deviation.

Figure (3): Theresults differences between male and female patients.
تقويم الانف والحاجز الانفي من داخل الانف لتصحيح الانف المنحرف

تقييم المريض للنتائج

الملخص:

أن تعديل الانف المنحرف بيقى أحد التحديات في تجميل الانف حيث ان الفشل في التعديل وارد في هذه الدراسة لتقييم النتائج الجمالية,الوظيفية,الاجتماعية والنفسية لعمليات تقويم الانف والحاجز الانفي للانف المنحرف حسب تقييم المريض نفسه. تم اجراء دراسة طولية لحلات مسيطر عليها على 77 مريض مصاب بانحراف الانف اجريت لهم عملية تقويم الانف والحاجز الانفي من داخل الانف في مستشفى تكريت التعليمي خلال الفترة من كانون ثاني 2007 حتى كانون أول 2011. وقد تم تصنيف انحرافات الانف الى انحرافات (c), (s) وتشوه مائل. النتائج الجمالية,الوظيفية,الفعالية الاجتماعية والنفسية لعمليات تقويم الانف والحاجز الانفي تم تخمينها بانستائي تم اعدادها. النتائج الجمالية جيدة في 42 مريض(91%) أكثر في التشوه المنحرف (89%)، أفضل في التشوه المائل (94%). تحسن في الفعاليات الاجتماعية والنفسية 45 مريض (90%)، أفضل في انحراف شكل (c) (91%)، كانت قناعة الرجل أكثر من المراة في النتائج الجمالية وتحسين الحالة الاجتماعية والنفسية (94%) بالتباطؤ. ونستنتج أن تقويم الانف والحاجز الانفي من داخل الانف لتصحيح الانف المنحرف يعطي نتائج جيدة حسب تقييم المريض نفسه وان النتائج لها علاقة بنوع الانحراف حيث أنه أفضل في التشوه المنحرف وأقل في انحرافات الانف شكل (c) و(s)، وأن المراة أقل قناعة من الرجل بالناتج.

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