ORIGINAL ARTICLE

Effectiveness of Septoplasty for Nasal Obstruction in Young Patients in RIMS, Adilabad

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Abstract

Nasal septal deviations are common in young population. Deviations of septum cause varying degrees of nasal obstruction. Nasal septoplasty is the treatment of choice for nasal obstruction due to septal deviation. We in the present study tried to evaluate the outcomes of septoplasty performed in young patients. ***Methods****: This study was performed in Rajiv Gandhi Institute of Medical Sciences [RIMS] Adilabad, in the Department of ENT. Patients were evaluated by validated Nasal Obstruction Symptom (NOSE) scale. The total number of patients included were (n=38) of which male were 18 and female were 20 in number. The patients underwent septoplasty and NOSE questionnaire was evaluated before and after 3 months of the treatment to determine the outcomes of the surgery.* ***Results****: The mean age of the patients was 28 ± 5.8 years. History of trauma was reported by 70% of the patients. Anatomical locations of deviations were established by clinical examination and Radiographic examinations of the patients. The presentations were 76.31% with caudal dislocation of the septum, C shaped deformity was seen in 78.94% of the patients, S-shaped deformity was seen in 42.1% of the patients and impacted nasal septum was seen in 39.47% of the patients. Vomer removal was done in 89.47% and quadrangular cartilage trimming in 84.21% followed by the perpendicular plate of Ethmoid removal in 86.84% of cases and maxillary crest gouge 81.57%. The Mean scores of NOSE questionnaire pre-operatively were 13.37 ± 0.98 and 3 months post operatively it was 2.32 ± 0.91 the p values was<0.001 which was significant.* ***Conclusion****: Septoplasty is a conservative and relatively safe procedure to relieve obstructions especially in young people. Younger patients tend to have more anatomical dependent nasal obstruction, therefore, these people may gain more success from surgery. There was a significant improvement in symptoms of nasal blockage 3 months after surgery in our study group.*

Keywords*: Septoplasty, Nasal Obstruction, Young patients*

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Introduction

Nose is a facial structure for the purpose of breathing and smell as well as facial esthetics. Nasal obstruction is a very common complaint. The causes of nasal obstruction can be varied ranging from mucosal congestion, turbinate hypertrophy, nasal masses, deviation of the nasal septum and adenoid hypertrophy. [1] Surgical correction of the deviated nasal septum is the most common ENT operation performed in adults. [2] Septoplasty is one of the definitive treatments for the deviated nasal septum. [3] Deviated nasal septum causes anatomical obstructions in the nasal cavity and impedes airflow. [4] Nasal septal deviation is commonly accompanied by compensatory mucosal hypertrophy of the contra lateral turbinate [6 of 13063 pdf] The counterbalanced mechanism is assumed to protect the more patient nasal side from drying and crusting effects of excess air flow. [5] Compensatory hypertrophy can, therefore, occur in both the inferior as well as middle turbinate of the side contra lateral to nasal septal deviation. [6] Turbinate enlargements comprise of mucosal elements as well as may also involve the conchal bone. [7] These needs to be corrected in conjunction with septal surgery to prevent obstruction on the non deviating side postoperatively [7, 8] Septoplasty is classically performed under direct visualization

using a headlight and nasal speculum. If there is a visible nasal septal deviation with no other identifiable causes like polyps, turbinate hypertrophy, allergy then it is indicated for nasal septoplasty. The other indication for septoplasty includes gaining access to posterior nasal passage for procedures like control of posterior bleeding by cautery of posterior nasal pack for epistaxis. [9] The effectiveness of septoplasty in adults with nasal obstruction and nasal septal deviation remains uncertain. This study, therefore, tries to evaluate the outcomes of septoplasty in young adults using Nasal Obstruction Symptom Evaluation (NOSE) scores pre and post operatively.

Materials and Methods

The study was conducted in the Department of ENT, Rajiv Gandhi Institute of Medical Sciences [RIMS], Adilabad. Institutional Ethical committee permission was obtained for the study. The patients were explained about the study and operation to be performed in the local language and a written consent was obtained from each participant of the study. The inclusion criteria were patients aged equal to or greater than 16 years and less than 35 years. Septal deviations identified clinically and Radiographically. Patients with symptoms of chronic nasal obstruction lasting for more than 3 months and Not responding to medical management including Topical decongestants, topical steroids or anti-histaminics and those who were willing voluntarily to participate in the study and follow-ups. Excluded from the study were patients with previous history of nose surgeries, history of malignancy of head neck region, Patients with chronic sinusitis, allergic rhinitis, history of major systemic disorders including cardiovascular diseases.

In the beginning of the study the patients were presented with QOL as measured by NOSE questionnaire and were advised to mark it up appropriately. The total value of each patient was then recorded and stored as the preoperative scores. The patients then underwent Septoplasty procedure as required by their condition. The operation technique was Freer's Incision followed by Mucoperiosteal flap elevation on one or both sides, removal of quadrangular cartilage was done with scissors and reshaping or removal of the deviated portion was done. The mucoperichondrial flaps were closed using 4-0 plain catgut suture on both sides of an incision. Plastic splints were used in 50% of the cases. Hemostasis was achieved by using Vaseline packs with tetracort. In majority 78% of the cases, packs were kept for 24 hours and rest packs were kept beyond 24 hours. Antibiotics were prescribed in 34.12% of cases. The post-operative recall was done after one week. Then next was recalled after 3 months for evaluation of QOL by the NOSE Score. The data was then recorded in MS Excel format and analyzed and p values of <0.05 were considered significant.

Results

The study was conducted on young patients aged between 16-35 yrs. There were 47.365 male patients and 52.63% female patients. The patients underwent septoplasty for nasal obstruction due to septal deviations. Majority of patients belonged to 26- 30 years of age group (34.21%) followed by 23.68% each in 21-25 yrs group as well as 31-35 yrs age group. 18.42% belonged to 16-20 yrs of age group given in table 1.

Table 1: Age and sex distribution of patients

Age (Y)	Male	Female	Total	%
16-20	3	4	7	18.42
21-25	5	4	9	23.68
26-30	6	7	13	34.21
31-35	4	5	9	23.68
Total	18	20	38	100

Anatomical locations of deviations were established by clinical examination and radiographic examinations of the patients. The presentations were 76.31% with caudal dislocation of the septum, C shaped deformity was seen in 78.94% of the patients, S-shaped deformity was seen in 42.1% of the patients and impacted nasal septum was seen in 39.47% of the patients.

The Mean scores of NOSE questionnaire pre-operatively were 13.37 ± 0.98 and 3 months post operatively it was 2.32 ± 0.91 the p values was<0.001 which was significant.

Table 2: **Nasal Obstruction Symptom Evaluation (NOSE) Scale** [3]

Over the past ONEmonth, how much of a problem were the following conditions for you? Please circle the correct response

	Symptom	*Not a Problem*	*Very Mild Problem*	*Moderate problem*	*Fairly Bad Problem*	*Severe problem*
1	Nasal congestion or stuffiness	0	1	2	3	4
2	Nasal blockage or obstruction	0	1	2	3	4
3	Trouble breathing through my nose	0	1	2	3	4
4	Trouble sleeping	0	1	2	3	4
5	Unable to get enough air through my nose during exercise or exertion	0	1	2	3	4

Figure 1: Showing the anatomical locations of deviations

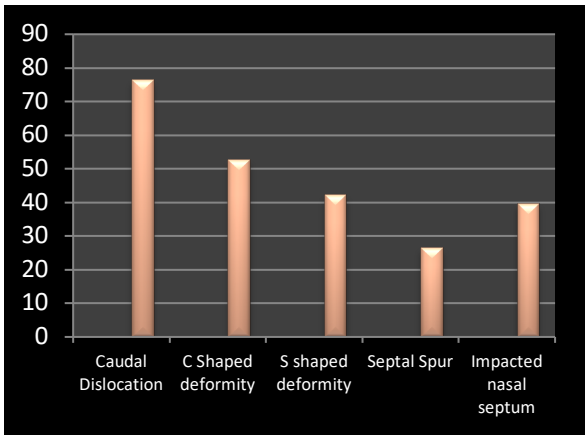
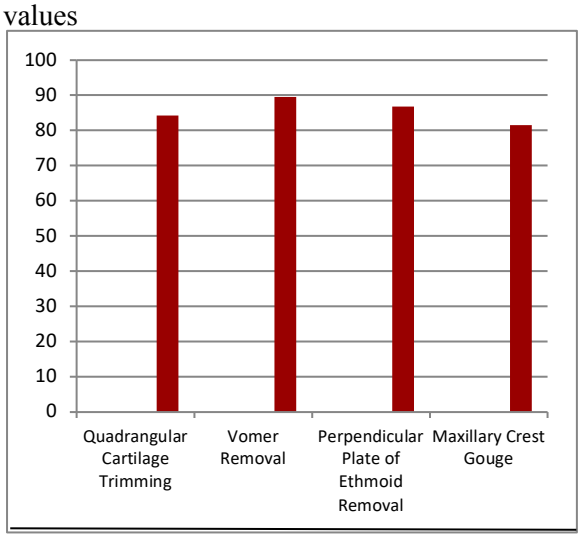


Figure 2: Showing the surgical procedures performed to correct deformity in percentage values



Discussion

Septoplasty is a commonly performed surgical procedure in ENT clinics aimed to correct nasal obstruction. In our study, we performed septoplasty in young patients the idea was to find the effectiveness of surgery on the young population. In a similar study by B Gandomi *et al;*[10] evaluating the outcomes of septoplasty in young adults with nasal obstruction with NOSE scores found that there was a significant improvement in mean NOSE scores 3 months and 6 months post-operatively. These findings are in agreement with our present study. In this study, we also found that there are remarkable improvements in NOSE scores post operatively after 3 months. There appears to be a general agreement that the septoplasty is an effective procedure to improve quality of life, especially in young patients. Rubasinghe MS *et al;*[9] evaluating the outcome of septoplasty in Hospital in Sri Lanka found significant improvements at the end of 3 months post operatively after septoplasty. Interestingly their population was generally of young age group. In the present study, the average age of our patients was 26 yrs. They also found that there were minimal complications after surgery and the need for post-operative antibiotics was also reduced. In this study also antibiotics werepresprescribed in 34.12% of cases. Nowadays Endoscopic septoplasty is rapidly gaining popularity and is generally considered superior to the conventional septoplasty. We in the present study performed conventional septoplasty as Endoscopic facilities were not available and importantly we performed with reasonable success. In a study by SV Kulkarni *et al;*[11] doing a retrospective analysis of 415 cases of endoscopic septoplasty found that the advantages of endoscopic operations facilitate good access to accomplish surgery and also complications are minimal. In an interesting study by Young Hyokin *et al*; [12] evaluating the effect of septoplasty on the clinical course of allergic rhinitis by using VAS scale and QOL

measurements found that after septoplasty there was a significant improvement in both VAS and QOL scales and there is a potential beneficial effect of septoplasty on allergic rhinitis. In the end, the present has shown that there are significant improvements in obstructive symptoms after 3 months and the observations are consistent with other studies done in this area. [1, 13, 14]

Conclusion

Septoplasty is a conservative and relatively safe procedure to relieve obstructions, especially in young people. Younger patients tend to have more anatomical dependent nasal obstruction; therefore, these people may gain more success from surgery. There was a significant improvement in symptoms of nasal blockage 3 months after surgery in our study group.

Conflict of Interest: *None declared*
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References

1. Stewart MG, Smith TL, Weaver EM, et al. Outcomes after nasal septoplasty: results from the Nasal Obstruction Septoplasty Effectiveness (NOSE). Otolaryngol Head Neck Surg2004;130:283-90.
2. Manoukian PD, Wyatt JR, Leopold DA, Bass EB. Recent trends in utilization of procedures in otolaryngology-head and neck surgery. Laryngoscope 1997;107(4):472–77.
3. Stewart MG, Witsell DL, Smith TL, et al. Development and validation of the Nasal Obstruction Symptom Evaluation (NOSE) scale. Otolaryngol Head Neck Surg2004;130:157-63.
4. Jessen M, Malm L. Definition, prevalence and development of nasal obstruction. Allergy. 1997;52(40 Suppl):3–6.
5. Berger G, Hammel I, Berger R, Avraham S, Ophir D. Histopathology of the inferior turbinate with compensatory hypertrophy in patients with deviated nasal septum. Laryngoscope 2000;110(12):2100–05.
6. Elahi MM, Frenkiel S, Fageeh N. Paraseptal structural changes and chronic sinus disease in relation to the deviated septum. J Otolaryngol 1997;26(4):236–40.
7. Akoglu E, Karazincir S, Balci A, Okuyucu S, Sumbas H, Dagli AS. Evaluation of the turbinate hypertrophy by computed tomography in patients with a deviated nasal septum. Otolaryngol Head Neck Surg. 2007;136(3):380–84. Grymer LF, Hilberg O, Elbrond O, Pedersen OF. Acoustic rhinometry: evaluation of the nasal cavity with septal deviations, before and after septoplasty. Laryngoscope. 1989;99(11):1180–87.
8. Korkut AY, Islim F, Gulseven Ciftci S, Dogan R, Gedikli O, Kahya V, et al. Evaluation of inferior turbinate hypertrophy in patients with congenital and traumatic nasal septum deviation. J Laryngol Otol. 2012;126(8):784–88.
9. Rubasinghe MS., De Silva MDK., Wanasinghe WMSCL., De Livera RJK., Wimalaratna TPSK. Patient profile, indications, complications, and Evaluation of Septoplasty outcome in a Base Hospital in Sri Lanka. Ceylon Journal of Otolaryngology 2016; 5(1):14 -18.
10. Gandomi B, Bayat A, Kazemei T. Outcomes of septoplasty in young adults: the nasal obstruction septoplasty effectiveness study. Am J Otolaryngol Head Neck Med Surg2010;31:59–62.
11. SV. Kulkarni, VP. Kulkarni, K Burse, M Bharath, C Bharadwaj, V Sanchet, Endoscopic Septoplasty: A Retrospective Analysis of 415 Cases. Indian J Otolaryngol Head Neck Surg 2015; 67(3):248–54.
12. Young Hyo Kim, BJ Kim, KH Bang, Y Hwang, TY Jang. Septoplasty Improves life quality related to allergy in Patients with septal deviation and allergic rhinitis 2011;145(6): 910-14.
13. Baumann, I., Quality of life before and after septoplasty and rhinoplasty. (Internet). GMS Current Topics Otorhinolaryngol Head Neck Surg 2010; 9:06.
14. Mira, A.B., Ahmaed, M., Evaluation of Septoplasty outcome Using Nose (Nasal Obstruction Symptom Evaluation) Scale, Int Jour of Scientific Research 2014; 3(2):359-60.