

Original Research Article

A comparative study of endoscopic versus conventional septoplasty

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ABSTRACT

Background: Deviated nasal septum is one of the common causes of nasal obstruction. Correction of deviated nasal septum has been performed by a variety of techniques of which Septoplasty is the most popular one. With the advent of endoscopes and their successful use in endoscopic sinus surgery endoscopes have been tried in septoplasty for better visualization of posterior part of septum and do the surgery more precisely and with less complication as compare to conventional method. The objectives of the study were to compare the outcomes of conventional and endoscopic septoplasty, to evaluate the advantages, disadvantages and complications of both endoscopic and conventional septoplasty.

Methods: It was a prospective observational study conducted on 50 patients with deviated nasal septum, who presented to ENT department of SPMC, Bikaner, patients were randomly divided equally in two groups for conventional and endoscopic septoplasty respectively. Data collected on a prestructured proforma and results analysed.

Results: The study included 50 cases. Postoperatively significant relief from the symptoms of nasal obstruction (82%) in group A and (96%) group B, was seen. In objective assessment at the end of 3 months of surgery, patient had persistent posterior deviation 24% in group A and 3% in group B, spur 12% in group A and 0% in group B.

Conclusions: Endoscopic septoplasty has an obvious edge over the conventional approach due to better illumination which enables to identify the pathology accurately, excise the deviated part of septum precisely and realignment of the cartilage for best results.

Keywords: Septoplasty, Endoscopic septoplasty, Deviated nasal septum

INTRODUCTION

Straight septum is an exception rather than the rule.¹ Nasal obstruction caused by a deviated nasal septum (DNS) is one of the most common presenting complaint at any ENT outpatient department. DNS not only causes difficulty in breathing but also causes improper aeration of para nasal sinuses leading to sinusitis. It is also implicated in epistaxis, obstructive sleep apnea and headaches attributable to contact points with structures of the lateral nasal wall.²⁻⁴

Any functional or cosmetic problem caused by a deviated septum needs to be addressed.

Different surgeries have been proposed for the correction of DNS. Initially, submucosal resection of septum was proposed but was later replaced by septoplasty as it was less radical.² With the advent of endoscopy and its successful use in sinus surgeries, its use in septoplasty was proposed. Endoscopic septoplasty has the advantage of better illumination and magnification leading to better visualization. It helps in the accurate diagnosis of site of

septal deviation, severity of nasal obstruction as well as its correlation with the lateral nasal wall.³

An ideal surgical correction of the nasal septum should satisfy the following criteria it should relieve the nasal blockage, should be conservative in nature, should not produce iatrogenic deformity, should not compromise the integrity and function of osteomeatal complex and must have the scope for a revision surgery, if required later. The traditional surgeries of the nasal septum improve the nasal airway but do not often fulfil other criteria's mentioned above in most instances. The endoscopic septoplasty provides important advantages which include adequate visualization, room for instrumentation, access to paranasal sinuses and for other surgeries like transseptal approach to the sphenoid sinus, visualisation and stoppage of post nasal bleed.

METHODS

Study type and place

It was a prospective randomized study, conducted in the department of Oto-rhino-laryngology, Sardar Patel Medical College and Associated Group of Hospitals, Bikaner.

Study period

This study was conducted during February 2018 to January 2019.

Selection criteria for patients

50 patients with clinical features suggestive of DNS who presented to ENT OPD and who fulfil inclusion and exclusion criteria were included in the study.

Inclusion criteria

Patients with DNS who are willing to give written informed consent for the surgery and to be a part of the study were included in the study.

Exclusion criteria

Patients who were unfit for general anaesthesia and those who refused to give consent to be part of the study were excluded.

All patients underwent detailed ENT clinical examination after obtaining clearance and consent from institutional ethical committee. Appropriate investigations was done and pre-anesthetic clearance obtained. patients were randomly allocated into two groups, group A underwent conventional septoplasty and group B underwent endoscopic septoplasty.

Statistical analysis was done using SPSS Statistical Software Version 10.0.

Technique of conventional septoplasty in group A

After infiltration with 2% xylocaine with adrenaline into columella and septum under headlight vision, incision was made at caudal border of septal cartilage on concave side. The mucoperichondrial and periosteal flap were elevated. The cartilage was freed from ethmoids posterior and maxillary crest below. The 0.5 cm wide anterior margin of perpendicular plate of ethmoid was removed with Luc's forceps. The inferior cartilaginous strip of 0.5 cm were removed to achieve correction if necessary. The incision was closed using 3'0 chromic catgut suture. Bilateral nasal cavities were packed with conventional nasal pack.

Technique for endoscopic septoplasty in group B

Infiltration was given on the convex side on the most deviated part of septum using 0⁰ 4 mm endoscope. Hemitrans fixation incision was made. It was not extending from dorsum to the floor as in classical incision but was extending both superiorly and inferiorly just as needed to expose the most deviated part.

A mucoperichondrial flap was raised using a suction elevator under direct visualization with a 0⁰ rigid 4 mm endoscope. The flap elevated was limited as it was raised from over the most deviated portion of the nasal septum and deviated part was removed. The flap was repositioned back after suction clearance and edges of the incision were just made to lie closely without the need to suture. The nasal cavity was packed with merocele.

RESULTS

In our study male to female ratio for DNS was 4:1 and the most patients fell in the age group 16 to 25 years of age (n=30). Most common type of septal deformity found in the study was type 3 (36%), i.e. unilateral crest at the level of the head of the middle nasal concha, followed by type 5, type 6 and type 4, type 2 and type 7.

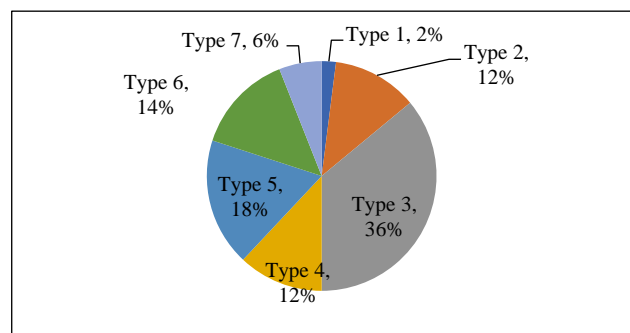


Figure 1: Prevalence of type of nasal septal deformity.

Commonest symptoms among two study groups was nasal obstruction (n=41) out of which 17 were in group A and 24 were in group B. other complaints were headache in 05 each, Anterior nasal discharge was found in 08 cases of group A and 07 cases of group B.

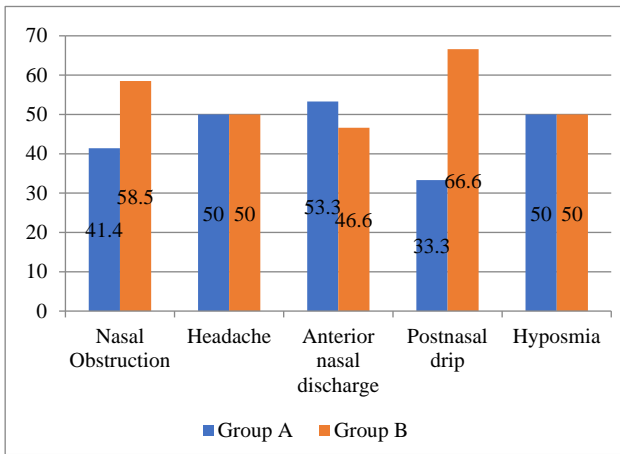


Figure 2: Prevalence of nasal symptoms in the two group.

The study showed that 64% cases of group A and 24% of group B had complaints of headache with nasal packing, watering of eyes was the complaints in 52% of group A and 16% of group B patients, facial swelling was seen 24% of group A cases and 8% of group B cases.

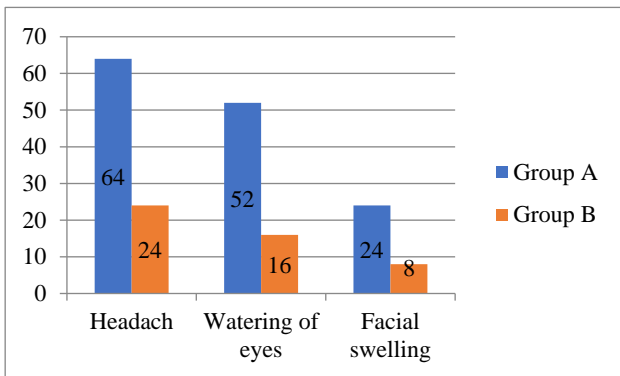


Figure 3: Comparison of complaints with pack in post-operative period.

Postoperative follow up of the patients showed that 82% cases of group A and 96% of group B cases were relieved of nasal obstruction and headache was relieved in 100% of group B and 80% of group A, 63% of group A and 86% of group B patients were relieved of nasal discharge, there was no relief from hyposmia in group A while it was relieved in 100% in of group B Patients.

Last follow up of the study cases showed that 12% of group A and 8% of group B cases had persistent Anterior deviation, 24% of group A and 3% of group B had persistent posterior deviation and 12% of group A cases had persistent spur. As a complication synechiae were

found in 20% cases of group A with persistent pathology of turbinates in 32% while only in 20% of group B patients.

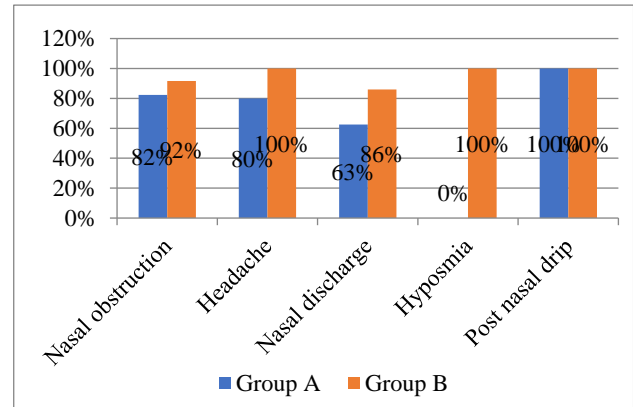


Figure 4: Postoperative symptoms relieved.

Table 1: Objective assessment at last follow up.

Objective assessment at 3 months of surgery	Group A	Group B
	N (%)	N (%)
Anterior deviation	3 (12)	2 (8)
Posterior deviation	6 (24)	1 (3)
Spur	3 (12)	0 (0)
Persistent contact with turbinates	5 (20)	0 (0)
Persistent pathology of turbinates	8 (32)	5 (20)
Discharge in middle meatus	11 (44)	6 (24)

DISCUSSION

In our study we found male to female ratio of septal deviation was 4:1 and the most common affected group were of younger age from 2nd to 4th decades which was in concordance with study conducted by Rao et al.⁵ In a similar study conducted by Semil et al the most commonly affected subjects belonged to the 26-35 yrs of age with the average age of 28.8 yrs and males were commonly affected than females.⁶

In present study commonest type of septal deformity was type 3 i.e. one unilateral crest at the level of the head of the middle nasal concha (36%) and least common was type 1 deformity (2%), these results are in concordance with study conducted by Mladina et al and Rao et al.^{5,7}

In present study 82% patient had complaints of nasal obstruction followed by anterior nasal discharge in 30% patients and headache in 20%. Similar study by Sindhvani et al, 54% patients had complaints of nasal obstruction and facial pain were cured and 38% showed improvement and 8% were not benefited.⁸ In a study by Harley et al patients with nasal obstruction and headache had significant improvement was observed in endoscopic group as compared to conventional group.⁹ In the present

study more no. of patients was relieved from these symptoms in endoscopic septoplasty group as compared to conventional group (93% improvement in nasal obstruction, 100% relief from headache, 100% improvement in post nasal drip) and the results were statistically significant.

In the study conducted by Jain et al, that postoperative follow up of the patients showed that 38% cases of group A and 96% of group B were relieved of nasal obstruction while headache was relieved in 54% of group B and 50% of group A.¹⁰

Similar study conducted by Chandra et al, they observed that 92% (n=23) of group A and 88% (n=22) of group B were relieved from nasal discharge, while nasal obstruction was improved in 96% (n=24) patients of group A and 80% (n=20) of group B.¹¹

CONCLUSION

In this study we found higher postoperative symptomatic relief and lesser rate of complications in endoscopic septoplasty group when compared to conventional group. Endoscopic septoplasty has the advantage of better illumination and magnification which aid in precise correction of the deformity.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Suraneni VR, Kudamala S. Conventional Vs. Endoscopic Septoplasty: Our Experience. Int J Otorhinolaryngol Head Neck Surg. 2018;4(2):403-8.
2. Maran AGD. Septoplasty. J Laryngol Otol. 1974;88:393-402.
3. Cantrell H, Limited Septoplasty For Endoscopic Sinus Surgery. Otolaryngol Head Neck Surg. 1997;116:274-7.
4. Pannu KK, Chadha, Kaur IP. Evaluation Of Benefits Of Nasal Septal Surgery On Nasal Symptoms And General Health. Indian J Otolaryngol Head Neck Surg. 2009;61(1):59-65.
5. Rao JJ, Kumar ECV, Babu KR, Chowdary VS, Singh J, Rangamani SV. Classification Of Nasal Septal DeviationRelation To Sinonasal Pathology. Indian J Otolaryngol Head Neck Surg. 2005;57(3):199-201.
6. Semil S. Early Experience With Endoscopic Septoplasty And Comparative Evaluation Of Endoscopic Septoplasty With Conventional Septoplasty In Deviated Nasal Septum: A Clinical Study At Tertiary Centre. Indian J Res. 2018;7(8):14-7.
7. Mladina R, Cujic E., Subaric M. Nasal Septal Deformities In Ear, Nose and Throat Patients: An International Study. Am J Otol. 2008;29(2):75-82.
8. Sindwani R, Wright ED. Role Of Endoscopic Septoplasty In The Treatment Of Atypical Facial Pain. J Otolaryngol 2003, 32:77-80.
9. Hearly DH, Powitzky ES, Duncavage J. Clinical Outcomes For The Surgical Treatment Of Sinonasal Headache. Otolaryngol Head Neck Surg: 2003;129:217-21.
10. Jain L, Jain M, Chouhan AN, Harshwardhan R. Conventional Septoplasty Verses Endoscopic Septoplasty: A Comparative Study. People's J Sci Res. 2011;4(2).
11. Chandra S, Baisakhiya N. A Comparative Study Of Endoscopic Versus Conventional Septoplasty: An Analysis Of 50 Cases. Int J Otorhinolaryngol Head Neck Surg. 2017;3:1046-51.

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