

Endoscopic Septoplasty Verses Conventional Septoplasty in Management of Deviated Nasal Septum: A Comparative EvaluationKirty Chandra¹, Amrit Raj Sharma², RP Thakur³¹PG Resident, Department of ENT, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India²Senior Resident, Department of ENT, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India³Department of ENT, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India

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Abstract:

Introduction: One of the common reasons of nasal blockage is a deviated nasal septum. Numerous methods have been used to correct a deviated nasal septum, with septoplasty being the most frequent. After endoscopes were developed and successfully used in endoscopic sinus surgery, they were tested in septoplasty for better understanding of the posterior section of the septum and performing the procedure more precisely and safely comparing to the traditional approach. The study's goals were to examine the results of conventional and endoscopic septoplasty, to assess the benefits, risks, and side effects of both endoscopic and conventional septoplasty.

Method: In this prospective observational study, 60 patients with deviated nasal septum who visited the ENT Department of Anugrah Narayan Magadh Medical College, Gaya, Bihar were randomly assigned to two groups for conventional and endoscopic septoplasty, respectively. Analysing the findings after gathering data on a prestructured proforma.

Result: There were 60 patients in the research. At the conclusion of the three-month postoperative period, the patient showed chronic posterior deviation that was 10% in group A and 3.3% in group B, as well as a spur that was 3.3% in group A and also in group B.

Conclusion: Endoscopic septoplasty provides a clear advantage over conventional septoplasty due to superior illumination that makes it possible to accurately diagnose the pathology, remove the crooked area of the septum exactly, and straighten the cartilage for the best outcomes.

Keywords: Septoplasty, Endoscopic septoplasty, Deviated nasal septum.

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Introduction

In rhinology practise, nasal obstruction is the most frequent complaint, and a deviated nasal septum is the most typical cause of nasal obstruction. Physical examination and imaging play a significant role in determining whether a septal deviation is obstructing the nasal passages.[1] In addition to causing nasal blockage, a substantially deviated nasal septum has been linked to headaches caused by contact points with the lateral nasal wall structures, sinusitis, obstructive sleep apnea, and epistaxis.

The bone and cartilage in the nasal septum divide the nasal cavity into two nostrils. Since the septum typically sits in the middle, the nasal passages are symmetrical. The affected nasal channel is blocked by a deviated septum, a condition where the top of the cartilaginous ridge leans to the left or the right.

Since a deviated septum might go unnoticed for years, no repair is necessary. Poor sinus drainage can lead to sinusitis, breathing problems, headaches,

epistaxis, and sleeping disorders including snoring or sleep apnea, among other symptoms [1].

Straight septum are the uncommon, not the rule [1]. One of the most frequent presenting complaints in any ENT outpatient department is nasal obstruction brought on by a deviated nasal septum (DNS). DNS not only cause breathing difficulty, but it also aerates the para nasal sinuses incorrectly, which causes sinusitis. Additionally, it has been linked to headaches brought on by contact points with lateral nasal wall structures, epistaxis, and obstructive sleep apnea. [2-4]

Numerous surgical treatments have been used to repair deviated nasal septa; however submucosal resection and septoplasty operations play a key role in the treatment of patients with nasal blockage. The discipline of septal surgery has seen enormous transformation with the development of nasal endoscopes. Endoscopes are being employed in nasal septal surgeries also known as endoscopic

septoplasty.[2] The correction of DNS has been suggested via a variety of operations. Initially, submucosal excision of the septum was suggested; however, septoplasty, which was less invasive, eventually took its place.[2] The use of endoscopy in septoplasty was suggested after it was introduced and used successfully in sinus procedures. Greater illumination and magnification allowing for greater visualisation make endoscopic septoplasty advantageous. It aids in the precise diagnosis of the location of the septal deviation, the degree of the nasal obstruction, and its relationship to the lateral nasal wall. [3]

Materials and Methods

Study type and place:

The ENT Department at Anugrah Narayan Magadh Medical College at Gaya, Bihar undertook the prospective, randomised trial.

Study period:

The research was carried out from October 2022 to September 2023.

Selection criteria for patients:

60 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 agreed to participate in the study and provide written informed consent for the procedure were included.

Exclusion criteria:

Ineligible patients for general anaesthesia as well as those who refused to consent to participate in the trial were eliminated.

After receiving approval and consent from the institutional ethics committee, all patients had comprehensive ENT clinical examinations. Pre-anesthetic clearance was granted after the proper investigations were conducted.

Patients were divided into two groups at random; group A received endoscopic septoplasty, while group B underwent conventional septoplasty. SPSS Statistical Software Version 10.0 was used for the statistical analysis.

Technique of conventional septoplasty in group A:

A cut was made at the caudal boundary of the septal cartilage on the concave side after the columella and septum had been injected with 2% xylocaine with adrenaline while being seen under headlights. The mucoperichondrial and mucoperiosteal flaps were elevated. The maxillary crest below and the posterior ethmoids were separated from the cartilage. With Luc's forceps, the anterior 0.5 cm edge of the ethmoid's perpendicular plate was excised. If correction is required, the inferior cartilaginous strip of 0.5 cm was excised. Three-inch chromic catgut suture was used to seal the wound. Traditional nasal packs were used to fill the bilateral nasal cavities.

Technique for endoscopic septoplasty in group B:

Using a 0 degree 4 mm endoscope, infiltration was administered to the most deviated portion of the septum on the convex side. An incision for hemitransfixation was done. As opposed to the classical incision, which extended from the dorsum to the floor, this one extended both superiorly and inferiorly in order to reveal the most deviated region. A suction elevator was used to raise a mucoperichondrial flap while being directly viewed using a 0 degree rigid 4 mm endoscope.

The flap's elevation was constrained since it was raised from the most crooked area of the nasal septum, which was also the part that was removed. Following suction clearance, the flap was adjusted, and the edges of the incision were simply made to lie snugly together without the need for sutures. The merocele was used for packing the nasal cavity.

Results

In our study, the male to female ratio for DNS was 5:2, and the age range with the greatest number of patients (n=25) was from 16 to 25 years. The study's most prevalent septal malformation was type 3 (34%), which is characterised by a unilateral crest at the level of the head of the middle nasal concha. Types 5, 6, 4, 2, 7, 5, and 6 were also often observed.

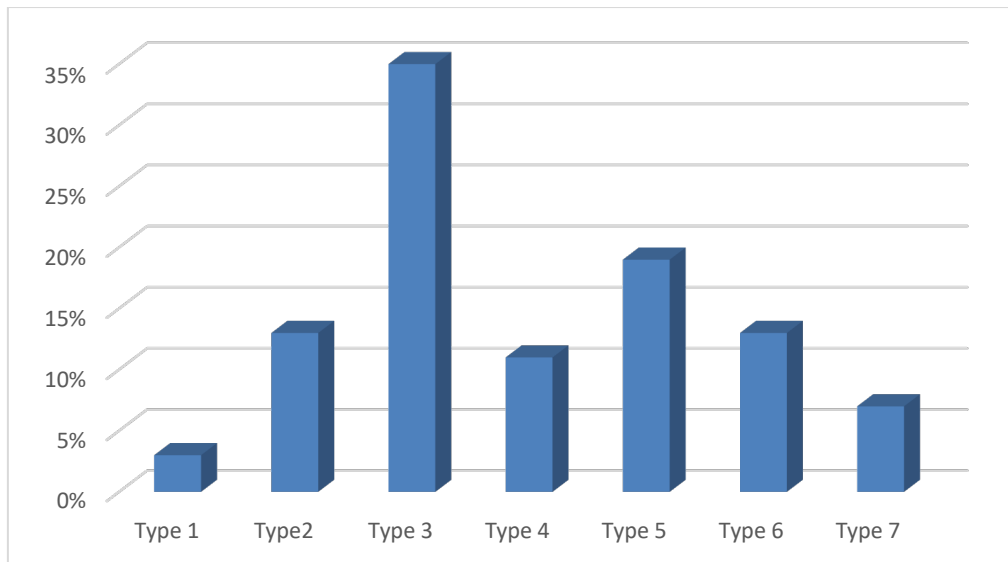


Figure 1: Prevalence of type of nasal septal deformity

According to the study, 74% of group A cases and 34% of group B cases complained of headaches with nasal congestion, 62% of group A patients and 26% of group B patients complained of eye watering, and 34% of group A cases and 18% of group B cases complained of face swelling.

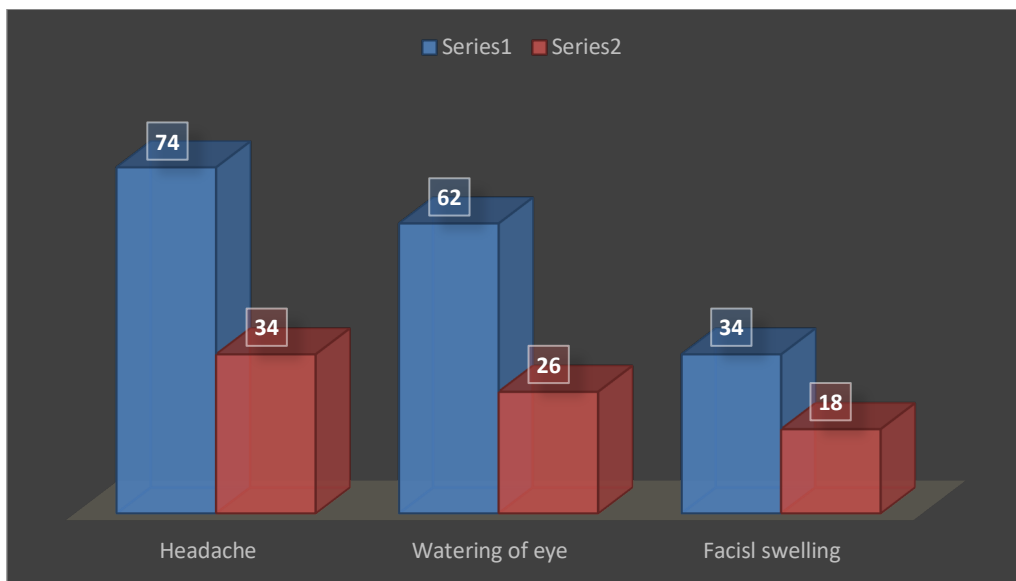


Figure 2: Comparison of complaints with pack in post-operative period

Following up on the study cases revealed that 25% of group A cases and 6.6% of group B cases had persistent anterior deviation, 10% of group A cases and 3.3% of group B cases had persistent posterior deviation, and 3.3% of both group A and group B cases had chronic spur. Synechia were discovered as a side effect in 5% of patients in group A and 1.6% of patients in group B cases had persistent contact with turbinates, 6.6% of group A cases and 5% of group B cases had persistent pathology of turbinates.

Table 1: Objective assessments at last follow up

Objective assessment at 3 months of surgery	Group A	Group B
	N (%)	N (%)
Discharge in middle meatus	10 (16.65)	8 (13.3%)
Posterior deviation	6 (10%)	2 (3.3%)
Anterior deviation	15 (25%)	4 (6.6%)
Persistent pathology of turbinates	4 (6.6%)	3 (5%)
Persistent contact with turbinates	3 (5%)	1 (1.6%)
Spur	2(3.3%)	2 (3.3%)

Discussion

In our study, we discovered that the male to female ratio of septal deviation was 4:1 and that the most frequently afflicted age was from the second to fourth decades, which was consistent with research done by Rao et al. [5] In a related study, Semil et al. found that males were more frequently afflicted than females and that the most affected participants ranged in age from 26 to 35 years old, with an average age of 28.8 years. [6] The most frequent septal deformity in the current study was type 3, or one unilateral crest at the level of the head of the middle nasal concha (36%); the least frequent was type 1 deformity (2%); these findings are consistent with studies by Mladina et al. and Rao et al.[5,7]

In the current study, 82% of patients complained of nasal blockage, followed by headache in 20% of cases and anterior nasal discharge in 30%. In a related trial, conducted by Sindhwani et al., 54% of patients who complained of nasal blockage and facial pain were treated, 38% showed improvement, and 8% did not receive any benefits.[8] Patients in a research by Harley et al. who experienced nasal blockage and headaches showed a substantial improvement in the endoscopic group compared to the conventional group.[9] More patients in the endoscopic septoplasty group in the current study reported relief from these symptoms than in the conventional group (93% improvement in nasal obstruction, 100% relief from headache, and 100% improvement in post nasal drip), and the findings were statistically significant. In the study done by Jain et al., postoperative follow-up of the patients revealed that nasal obstruction was eased in 38% cases of group A and 96% of group B, while headache was relieved in 54% of group B and 50% of group A.[10]

In a related trial, Chandra et al. found that 92% (n=23) of group A patients and 88% (n=22) of group B patients experienced relief from nasal discharge, while 96% (n=24) of group A patients and 80% (n=20) of group B patients experienced improvement in nasal obstruction.[11]

Conclusion

When comparing the endoscopic septoplasty group to the traditional group in this trial, we discovered greater postoperative symptomatic alleviation and a lower risk of complications. Better illumination and magnification provided by endoscopic septoplasty allow for more appropriate deformity correction.

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