

THE COMPARATIVE STUDY OF CONVENTIONAL SEPTOPLASTY AND ENDOSCOPIC SEPTOPLASTYKapil Kumar Singh¹, Isha Sinha², Prerna Verma³, Ganesh Singh⁴**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: The study was carried out to compare the post op morbidity amongst the patients of conventional and endoscopic septoplasty and to assess the efficacy of endoscopic septoplasty. The prospective and comparative study is conducted among 60 patients of deviated nasal septum, admitted in the department of ENT, in LLRM Medical College, Meerut. The patients were selected by random sampling procedure, and were divided into two groups - group A and group B, with 30 patients in each group. Group A underwent conventional septoplasty and Group B underwent endoscopic septoplasty. The duration of study was from July 2014 to January 2015. We have seen from above results that clinically the endoscopic septoplasty has come up with better results in relation to postoperative symptoms relieved. But there was no significant association found in respect to duration of stay and post op symptoms relieved.

KEYWORDS: Septel deviation, Endoscope, Septoplasty.

INTRODUCTION: Conventional surgeries improve the airway, in many respect but endoscopic approach have brought focus over several aspect of possible advantages over traditional techniques. These are due to better visualisation and illumination, better accessibility and evaluation of exact pathology, lesser need of unnecessary manipulation, resection and overexposure of the septal framework and improving the scope of revision surgery if required. The nasal septum at birth is usually is straight and remains straight in childhood. With the progress of age, the septum has tendency to bend on one or other side. Birth trauma including forceps placement or passage through a narrow pelvic canal can cause injury that may lead to early septal deviation or to a deviation that is evident during active growth phase of puberty.¹

Septoplasty is a surgical procedure that corrects the deformity of nasal septum the usual purpose is to improve the nasal breathing.² Lanza et al and Stammberger initially described the application application of endoscopic techniques to the correction of endoscopic techniques in 1991. Lanza et and Stammberger initially described detailed endoscopic approach to the treatment of isolated septal spurs.³ 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.⁴

This technique of endoscopic septoplasty is a fast developing concept and is gaining popularity with an increasing trend towards endoscopic surgeries. Furthermore in complex deformities better correction is possible with the help of an endoscope since we can clearly see the posterior deviation.⁵

Patients undergoing conventional septoplasty require longer stay due to nasal bleed than those undergoing endoscopic septoplasty. Endoscope also aided limited resection and thus more conservation by guiding precise shaving by septal cartilage.⁶

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Endoscopic septoplasty is a viable alternative to conventional septoplasty with acceptable outcome and complications.⁷

MATERIALS AND METHODS: Our type of study is Prospective and Comparative.

Sixty cases of deviated nasal septum refractory to conservative medical treatment were divided into 2 groups of 30 patients and underwent correction surgery for nasal septal deformity using both endoscopic and conventional techniques. Group A of 30 patients underwent conventional septoplasty and Group B of 30 patients underwent endoscopic septoplasty. The study was carried out from July, 2014 to January, 2015, at ENT dept., LLRM Medical College, Meerut.

The statistical analysis is done using the SPSS Software. Chi-square test of independence is used to know the association between 2 criteria of classification. P value <0.05 is considered as significant.

Inclusion Criteria: Patients with nasal obstruction, nasal discharge, hyposmia, epistaxis and headache were included in the present study.

Exclusion Criteria: Patients with allergic rhinitis and upper respiratory tract infection were excluded.

Techniques for Conventional Septoplasty: The most of procedures were conducted under local anaesthesia. General anaesthesia was used for paediatric patients, uncooperative patients, apprehensive patients.

1. First of all both nasal cavities were packed with 4% xylocaine with adrenaline.
2. After removal of pack infiltration of 2% xylocaine with adrenaline into whole of septum, cartilaginous and bony part for ant tunnel and for inferior tunnel infiltration was done over maxillary crest and vomer.
3. After this trimming of vibrissae was done over both side for better exposure and prevention of furuncle and or boil on vestibule.
4. A vertical incision in septal mucoperichondrium 1.5cm cranially from caudal septal border for anterior tunnel was done. (Killian's incision).
5. A horizontal incision was made over maxillary crest for inferior tunnel, 1.5 cm cranially from caudal septal border.
6. Then both tunnels were united.
7. Then a mucoperichondrial flap was elevated from this part of septum up to the perpendicular plate of ethmoid. Similarly mucoperiosteal flap was elevated from this part of septum to vomer.
8. Perpendicular plate was separated from quadrangular septal cartilage.
9. The perpendicular plate of ethmoid was then fractured and removed into small pieces by Luc's forceps.
10. Then 0.5 cm inferior strip of septal cartilage was removed from the incision side to the perpendicular plate of ethmoid to achieve the correction of septum and any bony spur over maxillary crest or vomer was also removed with the help of chisel and mallet or hammer.
11. Because the septal cartilage has memory, it has tendency to assume its initial shape -The septal cartilage can sometimes bind after surgery, so to prevent this multiple incision or crosshatching was done over the rest of cartilage.

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12. The mucoperichondrial and mucoperiosteal flaps were repositioned and the incision was closed using 3'0 cutting is used.
13. Then bilateral nasal cavities were packed with 6 inches ribbon pack soaked in BIPP, bismuth iodide paraffin paste or soframycin ointment with liquid paraffin. Bolster was applied over both nostrils.

Techniques for Endoscopic Septoplasty: Most of the procedures were conducted under local anaesthesia. General anaesthesia is needed for only paediatric patients, uncooperative, apprehensive patients.

Position- headside is 30 degree up;

1. First pack both nasal cavities were with 4% xylocaine plus adr.
2. After removal of pack, infiltration was done on convex side of septum using 0 degree 4 mm endoscope for adults and 0 degree 2.7mm for paediatric patients.
3. A vertical incision was made caudal to the deviation or deviation part of septum but it is not extended from dorsal of nose to the floor of nose as in conventional sepyoplasty, but extended both superiorly and inferiorly to explore the most deviated part.
4. Mucoperochondrial flap was raised using periosteal elevation under direct visualization with 0 degree rigid 4mm nasal endoscope.
5. The incision was given on deviated part of septal cartilage parallel but posterior to flap incision and caudal to deviation.
6. Then freyer'elevator was inserted and mucoperichondrial flap was raised on opposite side.
7. Then small luc's forceps was used to excise the deviated part of septum and for bony spur, hammer and cheissel are used.
8. The mucoperichondrial flap was repositioned back after suction clearance and edges of incision were made to lie closely without the need to suture.
9. The nasal cavity was packed with merocele on the side of incision.

Post-operative Care: Patients are given iv antibiotics, antihistaminic, analgesics following surgery for 2-3 days, till patient was admitted after that they are discharged after removal of nasal pack after 48hrs of surgery on oral medications.

Pain is generally mild to moderate intensity with this type and well controlled by oral NSAID.

The stuffiness typically results from swelling after the procedure and typically generally starts to improve after first week.

The mucus secretion was cleared is cleared by suction clearance after pack removal and patient is advised saline spray or irrigation after the pack removal and then patients are followed up on 7, 15, 30, 90 post op days of surgery and were assessed for subjective improvements like headache, nasal obstruction, rhinorrhea, hyposmia, epistaxis.

RESULTS:

Deviated portion	Group A	Group B
Cartilage	9[30%]	12[40%]
Bone	15[50%]	12[40%]
Cartilage and bone	6[20%]	6[20%]

Table 1: Distribution of deviated portion in groups

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Table1 shows distribution of deviated portion of nasal septum in two groups. Amongst the patients who underwent conventional septoplasty, in 30% of cases, cartilage was found to be deviated and in 50% of cases bone was found to be deviated and in 20% of cases cartilage and bone both are found to be deviated. Amongst the patients who underwent endoscopic septoplasty, in 40% of cases, cartilage was found to be deviated, and in next 40% cases bone was found to be deviated and in 20% of cases both cartilage and bone both was found to be deviated. It is seen that both the group do not differ significantly in the respect of deviated portion [p=0.68].

Duration of stay	Group A	Group B	P value
</=48hrs	21(70%)	27(90%)	0.10
>/=48hrs	9(30%)	3(10%)	

Table 2: Post-Operative Stay of Patients in Two Groups

Chi Square Test with Yates Correction: Chi square (1), 5% with Yates correction and p<0.005 is considered as significant. We have seen that there is no significant association of duration of stay after treatment (p=0.10).

POST OP SYMPTOMS RELIEVED:

Groups	Yes	No	P value
A	24(80%)	6(20%)	0.46
B	27(90%)	3(10%)	

Table 3: Nasal Obstruction Relieved

80% of patients who underwent conventional septoplasty are relieved of nasal obstruction and 20% are not relieved.90% of cases who underwent endoscopic septoplasty are relieved of nasal obstruction symptoms, only10% of cases are not relieved. It may be noted that clinically endoscopic septoplasty is giving better improvement in comparison to conventional septoplasty, but it has no clinical significance.

Groups	Yes	No	P value
A	21(70%)	9(30%)	0.37
B	24(90%)	6(20%)	

Table 4: Nasal Discharge Relieved

Table 4 shows that 70% of patients who underwent conventional septoplasty are relieved of nasal discharge whereas 80% of patients who underwent endoscopic septoplasty are relieved of this symptom. This shows that clinically endoscopic septoplasty is giving better improvement in nasal discharge relief however this not statistically significant.

Groups	Yes	No	P value
A	27(90%)	3(10%)	0.60
B	29(96%)	1(3.3%)	

Table 5: Headache Relief

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The table 5 shows that 90% of patients who underwent conventional septoplasty are relieved of headache. So clinically endoscopic septoplasty is giving better results in respect of relief in headache.

Groups	Yes	No	P value .0001
A	12(40%)	18(60%)	
B	24(80%)	6(20%)	

Table 6: Epistaxis or Nasal Bleed Relief

Table 6 shows that 40% of patients who underwent conventional septoplasty are relieved of epistaxis whereas 80% of patients who underwent endoscopic septoplasty are relieved of epistaxis. So clinically as well as statistically significant association of epistaxis relief with the groups is seen in the above table.

Groups	Yes	No	P value
GROUP A	0(0%)	30(100%)	0.03
GROUP B	6(2%)	24(80%)	

Table 7: Hyosmia Relief

Table 7 shows that 2% of patients who have undergone endoscopic septoplasty are relieved of hyposmia. The significant association of hyposmia relief with the groups is seen in the above table.

CONCLUSION: Clinically the endoscopic septoplasty has come up with better results in relation to postoperative symptoms relieved for example nasal obstruction, nasal discharge, headache, epistaxis and hyposmia. But there was no significant association found in respect to duration of stay and most of post op symptoms relieved except hyposmia and epistaxis., where significant association was found.

DISCUSSION: Endoscopic septoplasty is increasingly becoming more common as it offers an alternative to traditional headlight technique with superior visualisation. Our study showed better results and lesser complication in endoscopic septoplasty as compared to traditional septoplasty group as an endoscope gives better illumination and improved access to high DNS and allowed limited incision. The study of Gupta and Motwani (2005) shows that complication rates were significantly more in conventional group. In our study, more complications in group which underwent conventional septoplasty is in agreement with the mentioned study but it did not attained any statistical significance.⁶

More improvement in posterior deviation and spur was seen in patients of endoscopic group in comparison to traditional group of patients. The study of Nayak et al (1998) showed that 10% patients of anterior deflection had persistent septal deformity and posterior deviations were effectively corrected in most of cases. This study also showed that endoscopic septoplasty was found to be more effective in treating symptoms such as nasal obstruction.⁸

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