

A comparative study of conventional septoplasty with endoscopic septoplasty

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Abstract

Background: common problem found by otolaryngologists is the Nasal obstruction due to deviated nasal septum. Septoplasty is the surgical treatment for symptomatic deviated septum. The current study was done to compare the outcomes and complications of endoscopic and conventional septoplasty in a group of patients attending a tertiary care hospital. **Materials and Methods:** this comparative study was conducted among 60 patients with symptomatic deviated nasal septum in department of otolaryngology of a tertiary care teaching hospital. Patients were divided in to group A and group B with 30 patients in each group. Group A underwent conventional septoplasty and Group B underwent endoscopic septoplasty. **Result:** In this study, Postoperatively, a significant relief from the symptoms of nasal obstruction (90%), postnasal drip (60%), headache (33%), nasal discharge (30%) and Hyposmia (23%) was observed in patients in endoscopic septoplasty group and complication rate was found higher in patients in conventional septoplasty group **Conclusion:** It was found that with Endoscopic septoplasty has advantage over conventional method due to better illumination and improved accessibility to remote area.

Keywords: Deviated Nasal Septum, Endoscopy, Septoplasty

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Received Date: 02/05/2021 Revised Date: 12/06/2021 Accepted Date: 23/07/2021

DOI: <https://doi.org/10.26611/10161921>

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Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 04 August 2021

INTRODUCTION

the nasal cavity is separated into two nostrils by the Nasal septum. Nasal passages are symmetrical, as septum lies centrally normally. A deviated septum is an abnormal condition in which the top of the cartilaginous ridge leans to the left or the right, causing obstruction of the affected nasal passage. This situation can lead to poor drainage of the sinuses and resulting to sinusitis, difficulty in breathing, headache, epistaxis, sleeping disorders such as snoring or sleep apnea.¹ Septal deviation causing nasal obstruction can be diagnosed by the detailed physical

examination and imaging.² Various surgical techniques have been suggested regarding the treatment of deviated septum but none have completely improved the nasal airway. An ideal correction of the septum should satisfy the following criteria:³ 1. Relief from nasal obstruction; 2. Conservative procedure;³ Should not compromise osteomeatal complex; 4. Must have scope for revision surgery, if required later. The conventional surgeries for septal correction improve nasal airway but do not fulfill the above criteria. Various drawbacks regarding conventional surgeries include poor visualization, poor illumination, difficulty in assessing exact pathology, need for nasal packing and over exposure and over manipulation of septal framework making revision surgeries difficult.⁴ The endoscopic septoplasty is a direct targeted approach to septal anatomic deformity⁵ It allows limited septal flap dissection and removal of a small cartilaginous and/or bony deformity. Better illumination and visualization helps to increase the accuracy of the surgical procedure with limited exhibition of the septal flap.⁶ It is an addition to functional endoscopic sinus surgery⁷ and is helpful in rectifying septal deformities⁸ and revision cases.⁹ Endoscopic surgery is an efficient teaching tool as the

entire procedure can be seen on the monitor.¹⁰ The current study was done to compare the outcomes and complications of endoscopic and conventional septoplasty in a group of patients attending a tertiary care hospital.

METHODS

This study was carried out in the department of otolaryngology, viswabharathi medical college and hospital between jan 2019 to December 2019. Institutional Ethical Committee (IEC) approval was taken to conduct the study. Patients in the age group of 15 to 60 years with symptomatic deviated nasal septum were included after obtaining consent for conventional or Endoscope assisted septal correction procedure. They were divided randomly into group A and B of 30 each. Group A undergone conventional septoplasty and group B undergone endoscopic septoplasty.

Inclusion criteria:

- Age group between 15- 60 years.
- Patients with- symptomatic deviated nasal septum

Exclusion criteria:

- patients with head and neck malignancy,
- had a history of previous nasal surgery or had an existing external nasal deformity
- patients not giving consent

Steps for Endoscopic Septoplasty: The procedure was performed under local or general anaesthesia. The septum was injected with 1% xylocaine in 1:20,000 adrenaline on the convex side of the most deviated part of the septum using 0 degree rigid endoscope. A hemitransfixation incision was given. Submucoperichondrial flap was raised using a suction elevator under direct visualization with an endoscope underlying bone was exposed and the most 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 merocel. The conventional technique involves headlight illumination and visualization with nasal speculum.

Steps of conventional septoplasty: After infiltration with 2% xylocaine with adrenaline into columella and septum

under headlight, incision was made (hemitransfixion) at caudal border. The mucoperichondrial and mucoperosteal flaps were elevated upto perpendicular plate of ethmoid. The osseocartilaginous junction was dislocated. A 0.5 cm of the anterior margin of perpendicular plate of the ethmoid was removed with luc’s forceps. An inferior cartilaginous strip of 0.5 cm was removed if necessary. The incision was closed using chromic catgut (3-0) and nasal packing was done.

All patients were followed up as outpatients 7, 14, 28 and 90 days after the surgery and were assessed for subjective improvement of their pre-operative symptoms and presence of complications. The data was collected, tabulated and entered in the SPSS software. Analysis was done with descriptive statistics.

RESULT

The study included 60 cases. Out of 60 patients, 24 were females (40%) and 36 were males (60%). The observations showed that the male patients predominated over their female counterpart. The age of the patients ranged from 15 to 60 years. The majority of our patients were in the age group of 21-40 years. (Table 1). Postoperative follow up of the patients showed that 60% cases of group A and 90% cases of group B were relieved of nasal obstruction while headache was relieved in 13% cases of group A and 33% cases of group B. However, only 7% of cases in group A were relieved of hyposmia as compared to 23% of cases in group B. Symptoms of nasal discharge and post nasal drip were relieved in 20% and 27% of the cases of group A as compared to 30% and 67% in group B (Table 2). Among the complications following surgery the most common was U/L flap tear, seen in 57% of the patients who underwent conventional septoplasty and 20% of patients done endoscopically. Bleeding and residual deviation was seen in 20% of the patients who underwent conventional septoplasty and 7% of patients done endoscopically. Septal haemotoma (13%) was seen only in patients who underwent conventional septoplasty. The complication of septal perforation was not encountered in any of the groups (Table 3).

Table 1: Distribution of subjects according to age and gender

gender	10-20yrs	21-30yrs	31-40yrs	41-50yrs	51-60yrs	Total
Male	6	7	16	5	2	36
Female	4	5	11	2	2	24

Table 2: Symptoms relieved postoperatively in Group A (N=30) and Group B subjects (N=30)

Symptom relieved	Conventional	Percentage	Endoscopic	Percentage
	Septoplasty (Group A)N=30	%	Septoplasty(Group B) N=30	%
Nasal obstruction	18	60	27	90
Headache	4	13	10	33
Nasal Discharge	6	20	9	30
Hyposmia	2	7	7	23
Postnasal Drip	8	27	20	67

Table 3: Complications following surgery

Symptom relieved	Conventional	Percentage	Endoscopic	Percentage
	Septoplasty (Group A) N=30	%	Septoplasty (Group B) N=30	%
Bleeding	6	20	2	7
Septal Perforation	nil	-	nil	-
U/L flap tear	14	47	6	20
Septal Heamatoma	4	13	nil	-
Residual Deviation	6	20	2	7

DISCUSSION

This study was conducted among 60 patients and they were observed for a period of 3 months postoperatively. The results were estimated in terms of post-operative symptomatic improvement and presence of complications. In our study improvement was found in patients with nasal obstruction and headache in endoscopic septoplasty group as compared to conventional septoplasty group. Similar findings were reported by Sautter NB *et al.*¹¹ and Doomra S *et al.*¹² Gulati *et al.*, reported 90.5% patients in endoscopic group had improvement in nasal obstruction.¹³ In our study higher rate of persistence of symptoms were found in patients in conventional septoplasty group as compared to patients in endoscopic septoplasty group. The common complication which was found in our study was unilateral flap tear observed in patients undergoing conventional septoplasty. Suraneni VR reported that complications were seen more in conventional septoplasty as compared to endoscopic septoplasty.¹⁴ Singh A in his study found less complications in patients undergoing endoscopic septoplasty as compared to conventional septoplasty.¹⁵ Also, Rambabu P *et al.* in their study reported that endoscopic septoplasty was superior than conventional septoplasty with fewer complications in the earlier technique.¹⁶

CONCLUSION

In the present study it was found that compared to conventional septoplasty, endoscopic septoplasty has lesser complications and also found to be effective in relieving the symptoms which is due to better illumination, precise recognition of pathology, improve accessibility to remote area and magnification.

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Source of Support: None Declared
Conflict of Interest: None Declared