

# A comparative study of conventional versus endoscopic septoplasty at a tertiary teaching care hospital

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## Abstract

**Background:** nasal blockage is one of the commonest presentation to otolaryngology outpatients department. Deviated nasal septum is one of the commonest cause for the nasal blockage. The deviated septum can be corrected by various procedures amongst which septoplasty is commonly performed. Which can be either conventional type or endoscopic type. Aims and Objectives: The study aims to compare the advantages and disadvantages of endoscopic septoplasty and conventional septoplasty. **Material and Methods:** The study is performed in department of otorhinolaryngology, on 50 patients, 25 patients in each group after taking informed written consent. Results: post operative complications and duration of procedure found significantly lower in endoscopic method. **Conclusion:** better patient compliance, better relief from symptoms and lesser rate of complications give an edge for endoscopic over conventional septoplasty, both the procedures need to be done together in some situations to achieve optimal results.

**Key Word:** Conventional Septoplasty, Deviated Nasal Septum (DNS), Endoscopic Septoplasty.

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## INTRODUCTION

A straight septum is the exception rather than the rule.<sup>1</sup> Nasal obstruction is the most common complaint in rhinologic practice and a deviated nasal septum is the most common cause of nasal obstruction. The evaluation of septal deviation causing nasal obstruction depends heavily on physical examination and imaging.<sup>2</sup> Apart from nasal obstruction, a significantly deviated nasal septum has been implicated in epistaxis, sinusitis, obstructive sleep apnea and headaches attributable to contact points with structures of the lateral nasal wall.<sup>3</sup> Majority of these

operations are for Deviated Nasal Septum (DNS) which are symptomatic (nasal obstruction, recurrent headache), epistaxis due to septal spur, as a part of septorhinoplasty for cosmetic reasons.<sup>4</sup> Septal deviations are more common in the Caucasians (80%) than the non Caucasians.<sup>5</sup> Surgery is the only option for the obstructive and symptomatic deviated nasal septum. Surgical correction of deviated nasal septum has been performed by a variety of techniques of which sub mucous resection and Septoplasty procedures of surgical correction of nasal septum play a prime role in management of patients of nasal obstruction. After the invention of nasal endoscopes tremendous changes have evolved in the field of septal surgery. Now a day's endoscopes are being used in performing septal surgery so as to allow access in performing endoscopic sinus surgery where it is was termed as Endoscopic Septoplasty.<sup>6</sup> So we conducted a study with the objectives to compare the outcomes of endoscopic and conventional septoplasty and to evaluate the advantages, disadvantages and complications of both endoscopic and conventional septoplasty.

## MATERIAL AND METHODS

It was a hospital based prospective comparative study conducted at dept. of ENT at Mamata Medical college Kahmam for one and half years from December 2015 to July 2017. 50 patients were taken for the study who were presented with complaints at ENT opd during study period of one and half year. These 50 patients and randomly allotted into 2 groups consisting to 25 patients each. Inclusion criteria were age more than 14 years; patient with symptomatic deviated nasal septum, nasal obstruction, chronic rhinosinusitis, patient suffering with complications like epistaxis, headache, snoring. Exclusion criteria were age less than 14 yrs; external deviation with deviated nasal septum, patients with acute rhinitis or allergic rhinitis or vasomotor rhinitis, patients above 65 yrs. The ethical clearance for the study was obtained from Institutional Ethics committee. A well informed written consent was taken. Preoperative assessment was done, a detailed history was taken, patients were examined clinically and endoscopically and preoperative findings were noted. Preoperative medication was given to the patients and they were taken for surgery. Prior to operation, in the operation theater, envelop was opened and type of septoplasty was decided.

### Techniques for conventional septoplasty

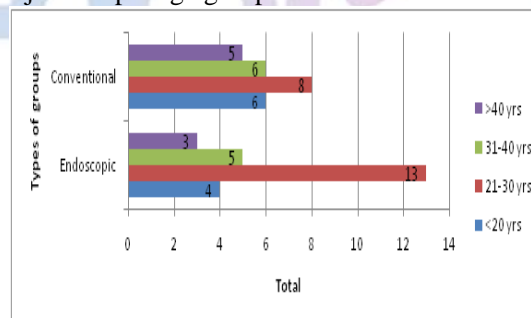
After infiltration with 2% xylocaine with adrenaline into columella and septum under headlight, incision (hemitransfixion incision) was made at caudal border. The mucoperichondrial and periosteal flaps were elevated upto perpendicular plate of ethmoid. The osseo-cartilaginous junction was dislocated. A 0.5 cm of the anterior margin of perpendicular plate of 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.

### Technique for endoscopic septoplasty

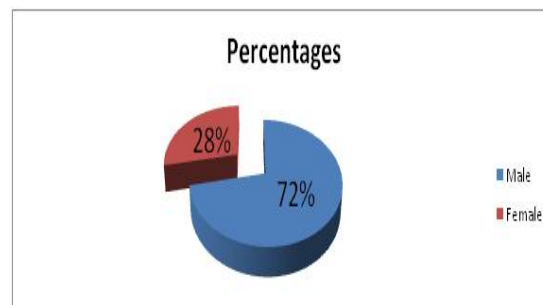
The procedure was performed under local or general anaesthesia. The septum was injected with 2% xylocaine in 1: 20,000 epinephrine on the convex side of the most deviated part of the septum using 0° rigid 4 mm endoscope. Hemitransfixion incision was made. Incision was extended superiorly and inferiorly just as needed to expose the most deviated part. A sub-mucoperichondrial 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 Vaseline nasal packs.

## RESULTS

Bar diagram: Distribution of study subjects as per age groups



Most common age group was 21-30 with total 21(70%) patients belonging to this group Pie diagram: Distribution of study subjects as per sex



Males formed 72% of study population.

**Table 1:** Distribution of study subjects as per symptoms

Symptom	Conventional Septoplasty	Endoscopic Septoplasty	Total
Nasal block	25	25	50
Nasal discharge	15	10	25
Head ache	9	4	13
Hyposmia	0	2	2
Epistaxis	2	0	2

Nasal blockage was most common symptom in both groups with all patients having blockage.

**Table 2:** Distribution of study subjects as per time required for procedure

Duration	Surgical Group		Total	x2, df, p
< 1 Hour	10 (20)	17 (34)	27 (54)	x2= 4.9, df=2, p<0.05
1 Hour	06 (12)	05 (10)	11 (22)	
> 1 Hour	09 (18)	03 (06)	12 (24)	
Total	25 (50)	25 (50)	50 (100)	

Time required for endoscopic septoplasty was found significantly lower than conventional method with p<0.05.

**Table 3:** Comparison of intra operative complication in both the groups

Intra operative Complication	Groups		Total	x2, df, p
	Conventional 25 (%)	Endoscopic 25 (%)		
No complication	05 (10)	14 (28)	19 (38)	x2= 6.9, df=2, p<0.05*
Unilateral Mucosal Tear	12 (24)	06 (12)	18 (36)	
B/L Mucosal tear	08 (16)	05 (10)	13 (26)	
Total	25 (50)	25 (50)	50 (100)	

Intra operative complication were significantly lower in endoscopic method.

**Table 4:** Comparison of post operative complication in both the groups at 1 week

Symptom	Conventional Septoplasty (post/pre op)	Endoscopic Septoplasty (post/pre op)	Total	Percentage of benefit	p value
Nasal block	3/25	1/25	4/50	92	p>0.05
Nasal discharge	0/15	0/10	0/25	100	p>0.05
Head ache	2/9	0/4	2/13	15.38	p>0.05
Hyposmia	0/0	0/2	0/2	100	p>0.05
Epistaxis	0/2	0/0	0/2	100	p>0.05

Evaluation of post operative complication at week one did not find any significance in both groups.

## DISCUSSION

A comparative study was conducted at Mamata Medical College Khammam to see advantage of endoscopic septoplasty over conventional method. We recruited 50 patients of deviated nasal septum attending ENT opd. We divided them in to 2 groups. In this study 21-30 age group formed majority of study population in both conventional and endoscopic groups. With total of 21 (42%) patients in those groups. Similar was seen in study done by Chandra S *et al*<sup>7</sup> in which most common age group involved was 21-30 years with (n=18) involving 36% of cases. This is in concordance with Salama *et al*<sup>8</sup> and Sathyaki DC *et al*<sup>9</sup>. In our study the male formed 36(72%) of population while females formed 14(28%), with male: female ratio of

2.5:1. Similar results were seen in Chandra S *et al*<sup>7</sup> study with majority of patients in this study were males 84% (n=42) and 16% (n=18) were female Patients with male to female ratio was 4:1, while in Sathyaki DC *et al*<sup>9</sup> the male to female ratio was 3.17:1 with 38 males (76 %) and 12 females (24 %). In our study all the patients had complains of nasal blockage in both the groups. This was similar to Sathyaki DC *et al*<sup>9</sup> study. While in almost similar was concluded by Kesari SP *et al*<sup>10</sup> In Chandra S *et al*<sup>7</sup> study, nasal obstruction was the commonest symptom in both the groups involving (n=21) 84% in group A and (n=18) 72% in group B, this is also in accordance with and Salama *et al*<sup>8</sup>. Duration of endoscopic surgery was found significant lower than

conventional method. With 17 patients operated within one hour out of total 25. Similar was seen with Kesari SP *et al*<sup>10</sup> study. Out of total patients with no complication, 28% were operated endoscopically. Unilateral and bilateral tears were common in conventional method and this difference was statistically significant. Similarly Prakash *et al*<sup>11</sup> reported a statistically significant higher incidence of complications in the conventional method. Kesari SP *et al*<sup>10</sup> and Gulati *et al*<sup>12</sup> in their comparative study on 50 patients found that there was statistically significant difference between two groups regarding all the complaints, while we did not find any significance in post operative complications at week one. But we found that percentage benefit was higher for endoscopic method than conventional.

## CONCLUSION

We can conclude from this study that the endoscopic Septoplasty is safe, effective approach with better results and less complications as compared to conventional group. We recommend this technique as procedure of choice in patients going for septoplasty.

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