

Conventional versus endoscopic septoplasty in treatment of deviated nasal septum

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Abstract

Objective: To evaluate the efficacy and complications of endoscopic septoplasty as compared to conventional septoplasty.

Design: Hospital based Prospective comparative study.

Methods: We included in the study 80 patients who presented with symptomatic deviated nasal septum. All patients were divided into two groups, with one undergoing conventional and the other undergoing endoscopic septoplasty. Post-operative assessment was carried out one month, two months after the procedure.

Result: Post-operative complications such as epistaxis, residual deviation and synechiae was slightly more in the conventional septoplasty group.

Conclusion: No statistically significant difference was found between the conventional and endoscopic

septoplasty groups. Both the techniques were equally effective in relieving the symptoms of the patient.

Keywords: Conventional septoplasty, endoscopic septoplasty, nasal obstruction, septum

Introduction

The nasal septum is an integral support structure of the nose. Deviation or deformity of the septum can cause nasal obstruction, the most common complaint in the average rhinologic practice.¹ Septoplasty is one of the most well-established and commonly performed procedures in otorhinolaryngology. Although most often performed to fix structural deformities resulting in nasal obstruction, surgical correction of a deviated nasal septum may also be indicated in cases of recurrent epistaxis, sinusitis, obstructive sleep apnoea, and facial pain/headaches secondary to septal spurs contacting the lateral nasal wall. Additionally, it may be necessary for

improved access during endoscopic sinus surgery (ESS), endoscopic orbital procedures and endoscopic endonasal skull base procedures.

The 2 main approaches used to perform septoplasty include: -

- a) Conventional or Traditional Septoplasty
- b) Endoscopic Septoplasty

First described by Freer² and Killian³ in the early twentieth century, the traditional approach to address a deviated nasal septum involves direct visualization using headlight illumination and a nasal speculum. Alternatively, endoscopic septoplasty, which was initially described by Lanza and colleagues⁴ and Stammberger⁵ in 1991, involves the use of rigid endoscopes for visualization and targeted correction of any deformities. Both techniques can be used to address nasal septal deviations and have been shown to have similar functional outcomes.⁶⁻⁹

The aim of our study was to evaluate the efficacy and complications of endoscopic septoplasty as compared to conventional septoplasty.

Material and Methods

For the present study, 80 cases of deviated nasal septum were selected who underwent conventional and endoscopic septoplasty at our institution from October 2021 to November 2022. Patients were divided in two groups (one conventional septoplasty group and the other endoscopic septoplasty group, each having 40 patients) based upon received surgical procedure by simple randomization.

Patients with symptomatic deviated nasal septum and those above the age of 18 years were included in the study. Patient included in the study were divided into two groups, one group which underwent conventional septoplasty and the other group which underwent

endoscopic septoplasty. Patients having acute rhinosinusitis, allergic rhinitis and patients less than 18 years were excluded from our study.

Once enrolled, all patients underwent a detailed nasal examination. The septal deformities were characterized and graded from information gathered on physical examination, endoscopic examination, imaging (CT scan of nose and PNS), and from direct intraoperative visualization of the anatomy.

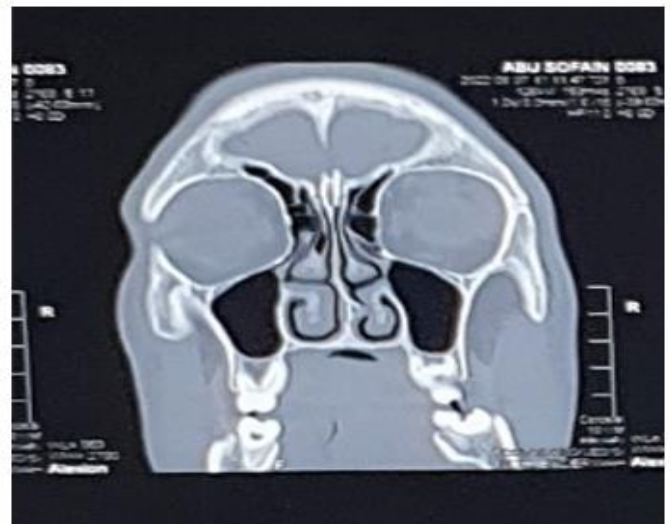


Figure 1: Computed tomography of nose and paranasal sinuses showing left deviated nasal septum



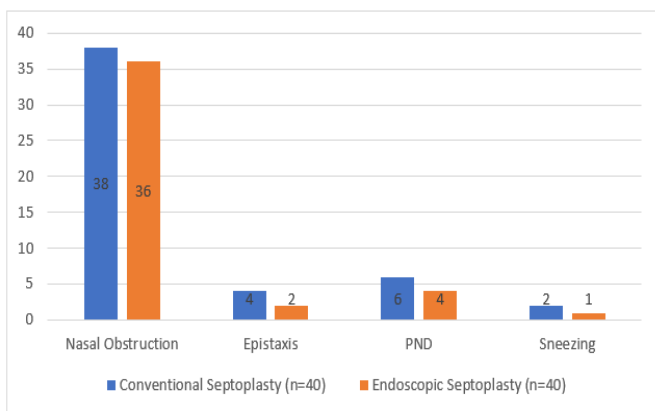
Figure 2: Computed tomography of nose and paranasal sinuses showing right deviated nasal septum.

Intra-operative parameters like duration of surgery were noted. Post-operative treatment was given and patients were discharged after 48 hours following pack removal. All patients were followed post operatively after 7, 14, 28 and 60 days. They were assessed for subjective improvement of pre-operative symptoms and complications like synechiae formation, persistence of deviation, epistaxis etc.

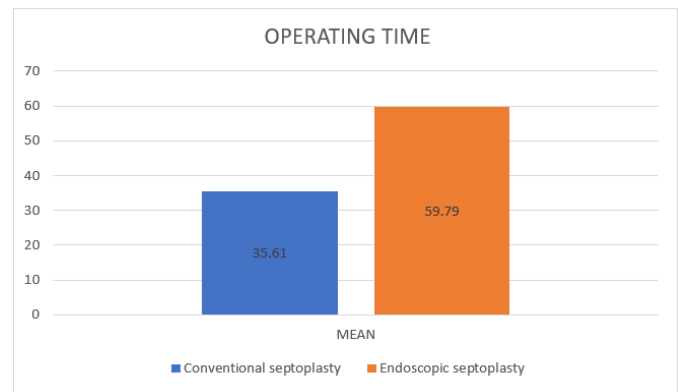
Statistical analysis was done by using IBM SPSS Version 21. Chi-square test was used and p value less than 0.05 was considered statistically significant.

Results

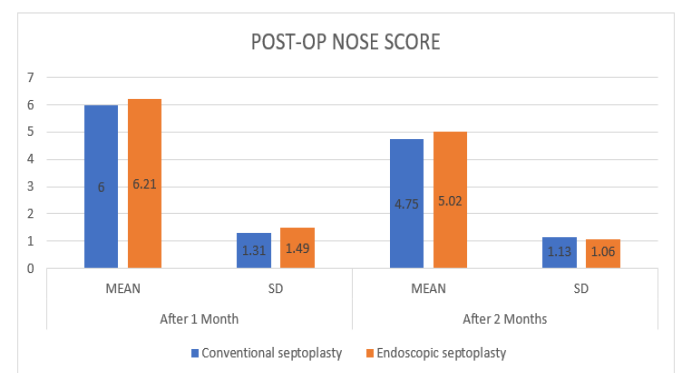
In this study, 80 patients were included aged between 17 to 71 years. Mean age of presentation was 28.74 years. Male to female ratio was 1.9:1. The most common complaint in both the groups was nasal obstruction (92.5%) and few patients had associated epistaxis (7.5%), post nasal drip (12.5%) and sneezing (3.75%) as shown in Graph 1.



Graph 1: Chief complaints in patients in both the groups Mean time taken for surgery (in minutes) in conventional septoplasty was 35.61 ± 4.68 and in case of endoscopic septoplasty was 59.79 ± 6.92 . It shows that the time taken was more in case of endoscopic septoplasty (Graph 2).



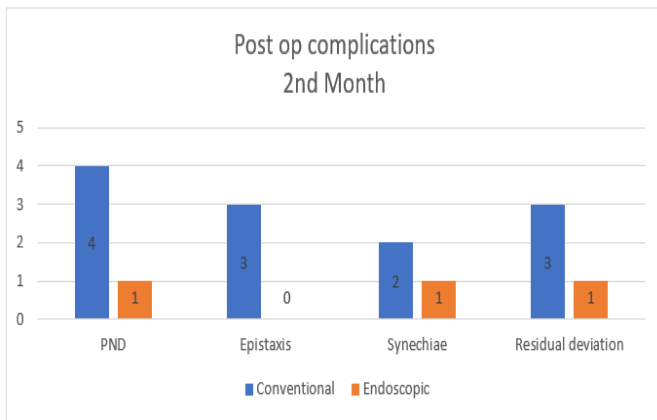
Graph 2: Operating time taken in both the groups Mean pre-operative NOSE score was 11.64 ± 2.28 in case of patients who underwent conventional septoplasty and 11.88 ± 2.47 in endoscopic septoplasty group. The post-operative NOSE score was assessed at 1 month and after 2 months to see the subjective improvement of symptoms in patients. The mean post-operative NOSE score was 6 ± 1.31 (1st month), 4.75 ± 1.13 (2nd month) in case of conventional septoplasty group and 6.21 ± 1.49 (1st month), 5.02 ± 1.06 (2nd month) in case of endoscopic septoplasty (Graph 3). The difference in the post-operative NOSE score of both the groups was not statistically significant which shows that both the techniques were equally effective in relieving the symptoms of the patient.



Graph 3: Post-operative NOSE score in both groups after 1st and 2nd month

The post-operative complications like epistaxis (7.5%), residual deviation (7.5%), synechiae (5%) and post nasal

drip (10%) was more in case of patients who underwent conventional septoplasty as compared to those who underwent endoscopic septoplasty as shown in Graph 4.



Graph 4: Post-operative complications in both the groups after 2 months

Discussion

In our study, most common pre-operative symptom was nasal obstruction (92.5%) and few patients had other symptoms like post nasal drip (12.5%), epistaxis (7.5%) and sneezing (3.75%). Findings of studies done by Gulati SP et al.¹¹ and Nayak DR et al.¹²⁻¹³ were also quite similar to findings of present study. In both studies, nasal obstruction was the most common complaint in study groups. Nayak et al.¹² conducted a study on 60 patients. Among them 30 patients underwent endoscopic assisted septoplasty and rest underwent conventional septoplasty. There was significant improvement of symptoms in patients who underwent endoscopic assisted septoplasty and the objective assessment by nasal endoscopy also showed better results in patients who underwent the same which is contrary to our study, as patients of both the groups showed significant improvement in the symptoms post-operatively.¹²⁻¹³ Singh et al.¹⁵ conducted a study in which mean time (in min) taken by conventional septoplasty was 31.32 ± 5.72 while mean time (in min) in endoscopic septoplasty was

$23.98.32 \pm 4.19$. It shows that time taken by endoscopic septoplasty is much lower than conventional septoplasty which is contrary to our study as time taken in endoscopic septoplasty was more as compared to conventional septoplasty. Study of Gupta, Motwani¹⁵ (2005) showed that complications like epistaxis, synechiae, residual deviation etc. were significantly more in traditional group. In our study also more complications were seen in conventional septoplasty as compared to patients who underwent endoscopic septoplasty.

Conclusion

Evolution of the use of endoscope in septoplasty was a major event in the history of septal surgery. Helps in dealing with posterior deviations, high deviations, sinus pathology, DCR operation, isolated spurs, etc. on the same setting. Allows accurate and conservative repair of obstructive nasal septum deviations. However, endoscopy has its own limitations like frequent cleaning of the tip, loss of binocular vision and with endoscopy we cannot deal with the anterior deviations of the septum. The operative time was less in case of conventional septoplasty and it was more convenient in dealing with anterior or caudal dislocations but both the techniques were equally effective in relieving the symptoms.

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