



A COMPARATIVE STUDY OF ENDOSCOPIC AIDED SEPTOPLASTY WITH CONVENTIONAL SEPTOPLASTY

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ABSTRACT

The advent of endoscopy has revolutionized rhinology and the traditional head light surgeries have been taken over by endoscopes. The aim of this study was to identify the nasal septal pathology, surgically correct the pathology and compare the efficacy, advantages, disadvantages and complications of endoscopic septoplasty over conventional septoplasty. 20 patients underwent conventional septoplasty and 20 underwent endoscopic septoplasty. Results were graded for subjective and objective improvement using NOSE score and Gertner Podochin plate respectively. Endoscopic septoplasty was found to be a safe and effective alternative to traditional head light technique.

INTRODUCTION

Nasal obstruction is the most common complaint in rhinological practice and a deviated nasal septum is the most common cause for nasal obstruction. Nasal septum has a decisive influence on the form and function of the nose. Deviations of the septum not only leads to nasal obstruction but may also alter the normal physiology of the nose. 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. Septoplasty is a surgical procedure that corrects a deformity of the nasal septum.

Endoscopic Septoplasty provides important advantages. It is a minimally invasive technique, helps us to correct septal deformity under excellent visualization and adequate room for instrumentation. Endoscopic Septoplasty also has certain limitations like inability to correct caudal dislocation, longer time to perform the operation and needs availability of instruments and special training with endoscopes and thus a longer learning curve

This study attempts to compare the advantages, disadvantages and complications of endoscopic septoplasty over conventional septoplasty.

MATERIALS AND METHODS

A total of 40 patients with symptomatic septal deviation were studied from October 2015 to August 2017. They were randomly allocated into group A and group B. Group A underwent conventional septoplasty and group B underwent endoscopic septoplasty.

Inclusion Criteria

All patients with a symptomatic deviated nasal septum refractory to medical treatment and deviated septum due to trauma, between the age group of 15 to 45 years were included in the study.

Exclusion Criteria

Patients below 15 years and above 45 Years, patients with bleeding and clotting disorders, patients with Sinonasal polyposis/allergic rhinitis /upper respiratory tract infection, patients with past history of septal surgery, immune-compromised patients, Diabetes mellitus, Renal disease, rhinitis medicamentosa and other medications causing nasal congestion were excluded.

Subjective assessment was done for all patients in the form of Nasal Obstruction and Symptom Evaluation scale (NOSE score). NOSE scale is a disease-specific health status instrument used to assess patients with nasal obstruction. It is a recognised, valid, reliable and responsive instrument. It is also

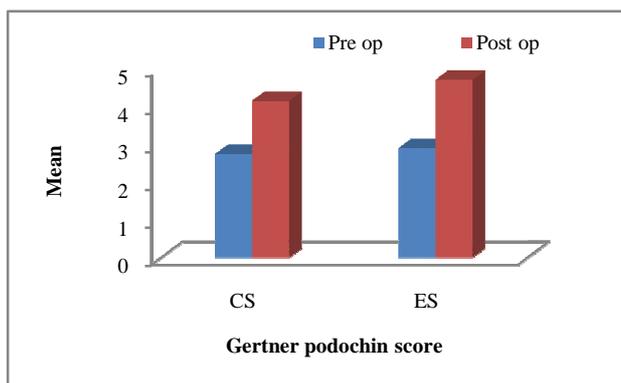
brief and easy to complete.¹ Following that all patients were assessed by anterior rhinoscopic examination.

Objective assessment was done for all patients on a customized GERTNER- PODOSHIN² plate. Diagnostic nasal endoscopy was done to assess the degree of nasal deviation and was classified into mild, moderate and severe.³ Post operatively patients were reviewed at 1 week, 2 weeks and 1 month interval and patients were asked for benefits from their symptoms .⁴ post operative complications and hospital stay were recorded.

RESULTS

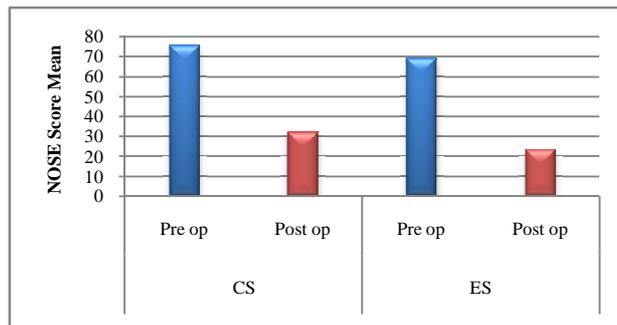
Our study was found to have most patients ranging between 15-30 years (75%) with a mean age of 25.35 in Group A and 25.55 in Group B .Conventional group had 14 males (70%) and 6 females (30%) and endoscopic group had 11 males (55%) and 9 females (45%), there by showing male preponderance to symptomatic nasal deviation when compared to females. All 40 patients (100%) had nasal obstruction, making it the most common symptom followed by 17 patients(42.5%) with headache and 8 patients(20%) with post nasal drip.

On anterior rhinoscopy isolated DNS to left was seen in 10(25%) patients where as deviation to left with spur was seen in 11(2.5%) patients. Deviation to right was seen in 5(12.5%) followed by deviation to right associated with spur in 11(27.5%) patients. ‘S’ shaped deviation was seen in 3 (7.5%) cases. Diagnostic nasal endoscopy revealed that 30 (75%) patients had moderate deviation, while severe deviation was seen in 7(17.5%) patients and mild deviation was seen in 3 (7.5%) patients Objective assessment of nasal airway by Gertner Podochin plate showed post operative improvement in nasal airflow at the end of 1 month. Improvement in endoscopic group was more than in conventional group with a significant p value of 0.014 in conventional group and 0.003 in endoscopic group



Graph 1 Bar graph showing pre op and post op (at the end of 1 month) Gertner Podochin score

Subjective assessment was done by nasal obstruction symptom evaluation (NOSE) scale⁵. There was a significant decrease in NOSE value in endoscopic group when compared to conventional group. Mean pre operative nose score was 75.50 in conventional group and 69.00 in endoscopic group. Post operative mean was 31.75 in conventional group and 23.25 in endoscopic group. p value was <0.001 in both the groups. Patients who underwent conventional septoplasty had more post operative complications in comparison with endoscopic group. 4 patients had residual deviation, 2 synechia and 1 flap tear in conventional group where as only 1 case of residual



Graph 2 Bar graph shows decrease in NOSE Score post operatively in both the groups

deviation, 1 synechia and 1 flap tear was seen in endoscopic group was seen. Out of 40 patients 33(82.5%) patients stayed for 5-7 days. 4 patients (10%) stayed for 4-5 days and 3 patients (7.5%) stayed for more than 7 days. p value for hospital stay was insignificant for both the groups.

DISCUSSION

In 1963 Cottle gave the concept of conventional septoplasty but endoscopic technique had to wait until Stammberger in 1991 applied endoscopic techniques for the first time to correct septal deformities⁵. Ever since then, large number of researches regarding the use of endoscope in septal correction have been done.

In our study we noted that nasal septal deviation was more common in males than in females and the most common age group affected were of 2nd and 3rd decade. This was in concordance with study done by Magdy *et al.*⁶

Most common complaint of our patients with deviated nasal septum was nasal obstruction (100%) followed by 17 patients (42.5%) with headache and 8 patients (20%) with post nasal drip. Frequency of complaints were similar to studies done by Sufian Nawaiseh.⁷

In our study deviation to left (52.5%) was more common than deviation to right (40%) Diagnostic nasal endoscopy revealed that majority (75%) patients had moderate deviation. In a study conducted by Mohammed Nizamuddin⁸

All our patients were subjectively evaluated with a NOSE scale questionnaire and objectively evaluated for nasal patency by GERTNER PODOCHIN scale both pre operatively and post operatively. There was a significant decrease in NOSE value in endoscopic group when compared to conventional group. Mean pre operative nose score was 75.50 in conventional group and 69.00 in endoscopic group. Post operative mean was 31.75 in conventional group and 23.25 in endoscopic group. p value was <0.001 in both the group. This conclusion was also reported by Kahveci *et al.*⁹

Assessment of nasal patency using Gertner Podochhin plate showed that post operative improvement in nasal airflow at the end of 1 month in endoscopic group was more than in conventional group with a significant p value of 0.014 in conventional group and 0.003 in endoscopic group. Similar results were seen in study conducted by D C Sathyaki *et al.*⁴ Post operative complications were more common in conventional group than endoscopic group. Residual deviation was the most common complication with 4 cases in conventional group in contrast to 1 case in endoscopic group. Synechia was present in 2 cases in conventional group while

only 1 case in endoscopic group had synechiae. Similar results were seen and park *et al*¹⁰ and by Nayak *et al*.¹¹ One case of flap tear was seen in both the groups.

Post op hospital stay did not show any statistical significance. Gupta and Motwani¹² had similar results.

CONCLUSION

Endoscopic septoplasty is a fast developing concept and has been increasingly embraced by most Otolaryngologists. It has become an effective teaching tool, allows a minimally invasive procedure and also aids in precise septal correction. Thus endoscopic septoplasty is an excellent alternative to the traditional head light technique.

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