



CORRECTION OF DEVIATED NASAL SEPTUM (DNS) WITH ENDOSCOPIC SEPTOPLASTY APPROACH

Dr. Tejas Athalye *

Junior Resident, dept of ENT MIMSR medical college and YCR hospital latur
*Corresponding Author

Dr. Shaila Bangad

Professor, dept of ENT MIMSR medical college and YCR hospital latur

ABSTRACT

Background: Nasal obstruction is one of the most common complaints that an otorhinolaryngologist faces in his day to day practice. Use of an endoscope has definite advantages of better illumination, little manipulation and minimal operative complication so conventional septal surgery has been replaced by endoscopic surgery in last few decades. The present study is taken up to know the role of endoscopic septoplasty in patients with DNS and Pre and post op subjective evaluation of patients with DNS undergoing endoscopic septoplasty in tertiary care centre. **Material and Methods:** Present study was observational descriptive study conducted in patients above 16yrs age, both sexes with symptomatic and clinically and radiologically diagnosed Deviated Nasal Septum And patients are assessed pre and post operatively using Modified NOSE Scale. **Results:** In our study, the majority of study subjects 11(36.7%) were in the 16-20 years age group followed by 7(23.3%) from the ≥ 36 years of age group. The mean age in years was 27.33 (8.71) years. In the present study, 21(70%) subjects were males compared to 9(30%) females. The male-female ratio was 7:3. In this study, out of 30 study subjects, 2 (6.66%) was found with a unilateral mucosal tear. Average nasal stuffiness, nasal blockage, Trouble sleeping, Unable to get enough air during exercise, Snoring, Sense of smell, & headache score significantly reduced at post-op day 7, day 15 & day 30 follow-ups compared to the pre-op score ($p < 0.001$). **Conclusion** Endoscopic septoplasty is associated with significant reduction in patient's morbidity in both preoperative and postoperative. Although endoscopic septoplasty can be considered a reliable alternative to traditional techniques, it is essential to correctly identify the type of preoperative deformity in order to select the appropriate surgical strategy. The study showed better results and fewer complications in endoscopic septoplasty

KEYWORDS :

INTRODUCTION:

Breathing is one of the very basic needs for the survival of an individual. The difficulty in breathing not only affects the survival but also the productivity of the individual. Deviated nasal septum is one of the most common causes for the nasal obstruction. An ideal correction of nasal septum should satisfy the following criteria¹

- should relieve the nasal obstruction
- should be conservative
- should not produce iatrogenic deformity
- should not compromise the osteomeatal complex
- must have a scope for revision surgery, if required later.

The traditional surgeries of the nasal septum improve the nasal airway but do not fulfill the above mentioned criteria in most instances.

The present study is taken up to know the role of endoscopic septoplasty in patients with DNS and Pre and post op subjective evaluation of patients with DNS undergoing endoscopic septoplasty in tertiary care centre.

MATERIAL AND METHODS

This study is going to be an observational descriptive type of study done at tertiary health care center in the department of ENT. The study protocol is approved by ethical committee for research studies in a clinical setting at a medical intuition under supervision & guidance.

- Type of sampling – Simple random sampling
- Place of sampling – Tertiary care center
- Duration of study – January 2021 to January 2022.
- Study groups – Patients with symptomatic DNS > 16 years of age

Study design –

This study is going to be an observational descriptive type of study done at tertiary health care center in the department of ENT. The study protocol is approved by ethical committee for research studies in a clinical setting at a medical intuition under supervision & guidance.

Study Setting –

The study will be conducted in a tertiary health care center in the department of ENT. The study will be conducted following ethical principles and good clinical practice guidelines as per declaration by World Medical Association's (WMA) declaration of Helsinki as revised in 2013 and National Ethical Guidelines for 10 Biomedical and Health Research involving Human Participants by Indian Council of Medical Research (ICMR) 2017.

- Type of sampling – Simple random sampling
- Place of sampling – Tertiary care center
- Duration of study – January 2021 to January 2022.
- Study groups – Patients with symptomatic DNS > 16 years of age

Inclusion Criteria–

- Age > 16 yrs
- Both sexes
- Clinically and radiologically diagnosed DNS

Exclusion Criteria–

- Caudal dislocation
- Children < 16 yrs
- H/O trauma
- Allergic/Atrophic rhinitis
- Bleeding disorders
- Malignancy
- Pregnancy
- Asymptomatic DNS

Study Method

- Informed and written consent obtained.
- Patient selection on basis of clinical and radiological diagnosis.
- X-RAY PNS (water's view) of the patients done.
- Preoperative subjective evaluation of patient's complaints is done by using modified NOSE scale The NOSE scale assesses the presence of nasal congestion or stuffiness, nasal obstruction, trouble breathing through the nose,

trouble sleeping, and inability to get enough air through the nose during the exercise of exertion. In our modification of the NOSE scale, additional questions were added, which included presence of snoring and headache.

- 5) Pre anesthetic checkup of all patients before taking them for surgery.
- 6) Surgery will be done in local anesthesia with sedation.
- 7) Postoperative nasal packing will be given to all the patients.
- 8) Nasal packing will be removed on second day post-op.
- 9) Patient will be prescribed with antibiotics and saline nasal wash post-op.
- 10) Patient will be followed up on seventh, fifteenth and thirtieth day post op.
- 11) Subjective evaluation of patients will be done on days of follow up using same parameters used in pre op (on 7th, 15th and 30th day post op). (Clinical and Radiological evaluation is the criteria for diagnosis.)

Modified Nose Obstruction Symptom Evaluation (NOSE) Scale²

Variables	Not a problem	Very mild	Moderate	Fairly bad	Severe
Nasal stuffiness	0	1	2	3	4
Trouble sleeping	0	1	2	3	4
Unable to get enough air during exercise	0	1	2	3	4
Trouble breathing through nose	0	1	2	3	4
snoring	0	1	2	3	4
Headache	0	1	2	3	4
Nasal obstruction	0	1	2	3	4

OBSERVATION & RESULTS

Table 1. Distribution of study subjects according to age

Age in years	Number of study subjects	Percentage
16- 20	11	36.7
21-25	5	16.7
26-30	3	10
31-35	4	13.3
≥ 36	7	23.3
Total	30	100

Mean ± SD = 27.33 ± 8.71 years

Table 1 shows the age distribution of study subjects, majority of study subjects 11(36.7%) were comes under the 16-20 years age group followed by 7 (23.3%) from the ≥36 years of age group. The mean age in years was 27.33 (± 8.71) years.

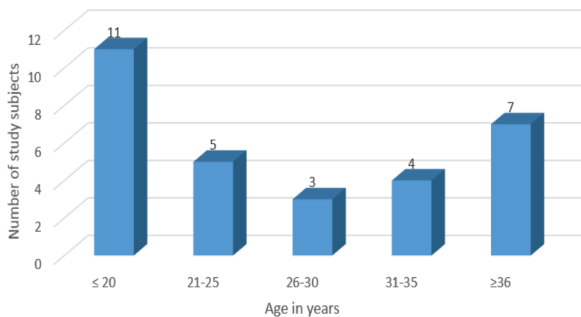


Figure 1. Distribution of study subjects according to age

Khan MN et al³ reported that most of the patients in this study were in the age group of 11-20 years (37.18%), followed by age group 21-30 years (26.44%).

Rajguru R et al⁴ reported that the most commonly affected age group was in the 2nd and 3rd decade of their life.

Which was consistent with our study.

Table 2. Distribution of study subjects according to gender

Gender	Number of study subjects	Percentage
Male	21	70
Female	9	30
Total	30	100

Male: Female = 2.33.

Table 4 shows the distribution of study subjects according to gender, most of the study subjects 21(70%) were males as compared to 9(30%) females. The male-female ratio was 7:3.

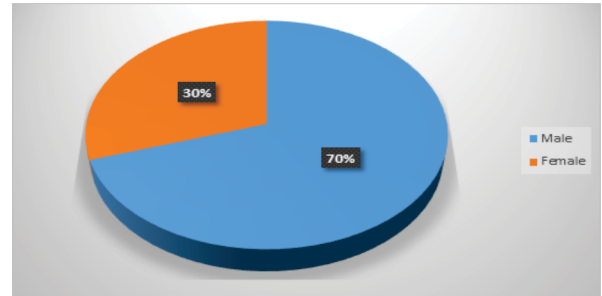


Figure 2. Distribution of study subjects according to gender

Khan MN et al³ reported 68.70% were males, 31.30% were females.

Leena Jain et al⁵ found the male to female ratio of septal deviation was 7:3.

Which was consistent with our study.

Table 3. Distribution of study subjects according to post op complications

Post op complications	Number of study subjects	Percentage
Residual deviation	0	0
Mucosal tear	2	6.66
Septal perforation	0	0
External nose deformity	0	0
Synechiae	0	0
Hematoma	0	0

Table 3 shows post-op complications among study subjects, out of 30 study subjects 2 (6.66%) was found with a unilateral mucosal tear.

Khan MN et al³ reported 6.67% each in case of residual deviation and synechiae with no incidence of any significant bleeding and septal perforation in the endoscopic septoplasty group.

Rajguru R et al⁴ found a mucosal tear in two cases, 1 each of hemorrhage & synechiae.

Which was consistent with our study.

Table 4: Comparison of pre-op and post-op NOSE scale

Parameters	Preop	Postop day 7	Post-op day 15	Post-op day 30	P value
Nasal stuffiness	4.5 ± 0.57	2.2 ± 0.76	1.5 ± 0.50	1 ± 0	<0.001
Nasal blockage	4.2 ± 0.48	2 ± 0.76	1.4 ± 0.50	1 ± 0	<0.001
Trouble sleeping	3.9 ± 0.90	2.1 ± 0.71	1.4 ± 0.50	1 ± 0	<0.001
Unable to get enough air during exercise	4 ± 0.69	2 ± 0.80	1.5 ± 0.57	1 ± 0.18	<0.001

Snoring	3.8 ± 0.69	2.2 ± 0.73	1.3 ± 0.49	1 ± 0	<0.001
Sense of smell	3.6 ± 0.66	2.4 ± 0.57	1.5 ± 0.50	1 ± 0.18	<0.001
Headache	3.3 ± 0.59	2.3 ± 0.49	1.3 ± 0.49	1 ± 0	<0.001

Table 4 shows a comparison of preop and postop NOSE scales, Average nasal stuffiness, nasal blockage, Trouble sleeping, Unable to get enough air during exercise, Snoring, Sense of smell, & headache score significantly reduced at post-op day 7, day 15 & day 30 follow-ups compared to the preop score (p<0.001).

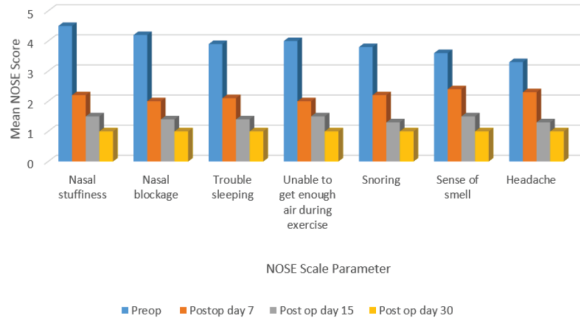


Figure 3: Comparison of pre-op and post-op NOSE scale

M. Khan et al⁹ reported The preoperative NOSE scale was 68.46 ± 11.27 and the postoperative NOSE scale was 11.82 ± 4.39. The difference between the pre and postoperative nasal scores was statistically significant (p<0.001).

Mogarnad M et al⁶ found that , statistically significant improvement was observed in the entire patient population with respect to the six clinical outcome measures, Nasal obstruction (p<0.001), headache (p<0.001), , nasal discharge (p<0.001), facial pain (p<0.001) & and hyposmia (p<0.001). Which was consistent with our study.

DISCUSSION

30 endoscopic septoplasty were performed in our institute and these cases were assessed at 7,15 & 30 days. The sociodemographic factors assessed, all parameters of NOSE scale were compared preoperatively with postop 7th, 15th & 30th day and postoperative complications were also studied. The outcome of surgery was the mean NOSE Score significantly reduced at post-op day 7, day 15 & day 30 follow-ups compared to the pre-op score (p<0.001).

- Age ranges from 16-45 years with the mean age of patients 27.33±8.71 years. The maximum number of patients belonged to the age group of 16-20 years
- 21(70%) males and 9(30%) females were included in the study. The male to female gender ratio was 7:3.
- out of 30 study subjects of endoscopic septoplasty, 2 (6.66%) was found with a unilateral mucosal tear.
- Average nasal stuffiness, nasal blockage, Trouble sleeping, Unable to get enough air during exercise, Snoring, Sense of smell, & headache score significantly reduced at post-op day 7, day 15 & day 30 follow-ups compared to the pre-op score (p<0.001).

However before results are put into clinical practice, studies with larger sample size followed by systematic analysis and meta-analysis are required to provide evidence of higher level.

CONCLUSION

There are technical advantages of using endoscope during septoplasty as it is definitely excellent in the terms of illumination, preciseness and surgery, visualization of deeper accurate parts of nasal cavity and resection of posterior deviation and spur especially in isolated septal spur.

Endoscopic septoplasty can be performed with minimal limited incision and manipulation, which results in minimal tissue trauma and septum resection, especially in isolated septal spur. Moreover, bleeding which especially occurs during maxillary crest removal that can be easily treated with endoscopy.

Finally, while transitioning to endoscopic septoplasty from traditional headlight technique may seem more time consuming, the operative time becomes similar after gaining familiarity with this procedure. In fact, for isolated spur, endoscopic septoplasty can be done faster compared to conventional approach. Ultimately, improved illumination hence the visualization makes this technique so appealing for treating deviated nasal septum.

REFERENCES

1. Nayak D R, Balakrishnan R, Murthy KD, Hazarika P. Endoscopic - Septoturboplasty: Our Update Series. Indian Journal of Otolaryngology and Head & Neck Surgery 2002;54(1):20-4
2. Philip P Pratap RA, Bhat V. Subjective assessment of outcomes of septoplasty. Int J Otorhinolaryngol Clin. 2017;9(2):42-6
3. Khan MN, Nath K, Uddin S. A clinical study of deviated nasal septum with special reference to conventional and endoscopic septoplasty. Int J Res Med Sci 2016;4:5165-71
4. Rajguru R, Singh I, Galagali JR, Singh A. Septoplasty techniques-conventional versus endoscopic: our experience. Int J Otorhinolaryngol Head Neck Surg 2017;3:990-6
5. Leena Jain, Manish Jain, A.N. Chouhan, Rekha Harshwardhan. Conventional Septoplasty verses Endoscopic Septoplasty: A Comparative Study. People's Journal of Scientific Research. 2011;4(2):24-28
6. Mogamad M, Mohta V. A Study on Clinical Profile of Deviated Nasal Septum and to determine the Efficacy of the Surgery. Clin Rhinol An Int J 2017; 10(2):7073.