Section: ENT

Original Research Article

COMPARISON OF ENDOSCOPIC VERSUS CONVENTIONAL SEPTOPLASTY IN ANDHRA POPULATION

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Abstract

Background: Nasal obstruction is the most common complaint in ENT practice. Surgical correction of a deviated nasal septum has been performed by a variety of resection and septoplasty procedures. Surgical correction of the nasal septum plays a vital role in the management of patients with nasal obstruction. **Materials and Methods:** Out of 50 patients, 25 were treated with conventional septoplasty and 25 had endoscopic septoplasty. **Result:** Right DNS, left DNS, Spur, hypertrophied Inferior turbinate(IT), Polypoidal Middle turbinate(MT), and concha bullosa were operated by both methods, and post-surgical complications were Bleeding 0% in Endoscopic septoplasty (ES) and 1 (4%) in conventional septoplasty (CS), synechiea 1 (4%) in ES, 2 (8%) in CS, DNS, 2 (8%) in ES, and 4 (16%) in CS. Epistaxis was observed in both ES and CS 1 (4%) but crusting was observed only in CS 2 (8%). **Conclusion:** Endoscopic septoplasty had a better outcome with respect to correcting posterior deviations and isolated spurs. Moreover, complications are lesser with endoscopic septoplasty as it is better illuminated, which enables one to identify the pathology accurately.

INTRODUCTION

Nasal obstruction is the most common complaint in rhinologic practise, and DNS has been implicated in epistaxis, sinusitis, obstructive sleep apnea, and headaches that are associated with contact points with structures of the lateral wall of the nose.[1] Surgical correction is required for DNS. It is performed by a variety of techniques, of which submucous resection and septoplasty procedures for surgical corrections of the nasal septum play a vital role in the management of patients with nasal obstruction. After the invention of nasal endoscopes, tremendous changes have evolved in the field of septal surgery. Now a day, endoscopes are being used in performing septal surgery so as to allow access to performing endoscopic sinus surgery, which was called endoscopic septoplasty.[2] Septoplasty is a surgical procedure that corrects the deformity of the nose. The usual purpose is to improve or normalise nasal breathing. When compared with standard headlight technique, endoscopic septoplasty provides important advantages, which include adequate illumination, access to paranasal sinuses during functional endoscopic sinus surgery, and other surgeries like trans-septal approach to the sphenoid sinus, visualisation and post-nasal bleeding stoppage. Endoscopy also facilitates limited resection and, thus, more conservation by guiding the precise shaving of septal cartilage.[3] Discrete septal pathologies such as isolated deflections, spurs, perforations, and contact points can be addressed in a directed fashion.[4] Hence, an attempt is made to compare the outcomes of endoscopic and conventional septoplasty and the advantages and disadvantages of both techniques.

MATERIALS AND METHODS

50 patients visited the ENT department of the Nimra Institute of Medical Sciences, Jupudi Ibrahimpatnam, Vijayawada, Andhra Pradesh-521456, were studied.

Inclusion Criteria

Adult patients aged between 18 to 50 years with symptoms of Deviated Nasal obstruction, chronic rhino sinusitis, and complications like Epistaxis, headache, and snoring, were selected for the study.

Exclusion Criteria

Children below 8 years and above 80 years, externally deviated nasal septum; patients with acute rhinitis or allergic rhinitis, vasomotor rhinitis. The patients who had previously undergone surgery for DNS, patients suffering from immune-compromised disease were excluded from the study.

Method

All the patients were informed about the techniques, and written consent was collected from every patient before surgery. Prescription medications were given to the patients, 25 patients for conventional

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septoplasty and 25 patients for endoscopic septoplasty, with the consent of the patient's techniques for conventional septoplasty.

After infiltration with 2% xylocaine and adrenaline in the columella and septum, a headlight incision (hemitransfixation incision) was made at the caudal border. The mucoperichondrial and periosteal flaps were elevated up to the perpendicular plate of the ethmoid and removed with LCS forceps. An inferior cartilaginous strip of 0.5 cm was removed if necessary. The incision was closed using chronic 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 a rigid 4 mm endoscope. A hemitransfixation incision was made. An incision was needed to expose the most deviated part. A sub- mucoperichondrial flap was raised using a suction elevator under direct visualization with an endoscope, and the underlying bone was removed. The flap was repositioned back after suction clearance, and the edges of the incision were just made to lie closely without the need for the suture. The nasal cavity was packed with Vaseline nasal packs.

Intra-operatively, the following parameters were noted: (a) Duration of Surgery (b) Blood loss during surgery (c) Associated turbinate procedure Nasal packages were done for all cases in both groups (techniques) with Vaseline Nasal packs, and IV antibiotics were started.

The patients in both groups were discharged after one week of antibiotics and analysis. Decongestant nasal drops till the next visit (follow-up), post-operatively, the 2nd, 4th, and 8th weeks of follow-up were done, and the following points were noted on the diagnostic nasal Endoscopy (a) persistence of anterior or posterior deviation or spur (b) Formation of synechiae or spur (b) Formation of synechiae (c) persistence of turbinate pathology (d) presence of discharge in the middle meatus.

Duration of study was from June 2022 to June 2023

Statistical Analysis

The clinical manifestations, post-operative complications in both groups were classified with percentage. The statistical analysis was carried out in SPSS software. The ratio of Male and female were 2:1.

RESULTS

[Table 1] The clinical Manifestations of both groups – Right DNS – 6 (24%) operated with conventional septoplasty (CS) while 5(20%) with Endoscopic Septoplasty (ES).

Left DNS – 4 (10%) with CS, 5 (20%) with ES.

Spur – 6 (24%) with CS, 4 (16%) with ES.

Hypertrophied IT – 7 (28%) with ES and 8 (32%) with ES

Polypoid MT – 1 (4%)

Concha Bullosa – 1 (4%)

Discharge – 2 (8%) in CS and 1 (4%) in ES.

[Table 2] Post – Operative complications in both techniques (groups) Bleeding 0% in ES and 1 (4%) in CS

Synechiae 1(4%) in ES, 2 (8%) in CS,

DNS 2 (8%) in ES, 4 (16%) in CS

Epistaxis 1 (4%) in both ES and CS Crusting 0% in ES and 2 (8%) in CS.

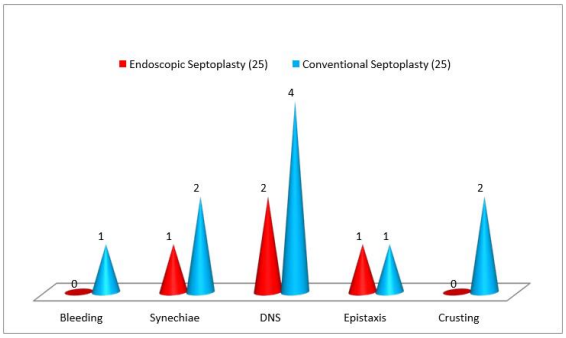

Figure 1: Comparison of Post – operative complication in both techniques

Table 1: Clinical Manifestations of both groups

Sl No	Manifestations in both group	Conventional Septoplasty 25		Endoscopic Septoplasty 25		Total with %	
	(I & II)	No	%	No	%	No	%
1	Right DNS	6	24	5	20	11	22
2	Left DNS	4	16	5	20	9	18
3	Spur	6	24	4	16	10	20
4	Hypertrophied IT	7	28	8	32	15	30
5	Polypoid MT	0	--	1	4	1	2
6	Concha Bullosa	0	--	1	4	1	2
7	Discharge	2	8	1	4	3	6

Table 2: Comparison of Post – operative complication in both techniques

Sl No	Complications	Endascopic Septoplasty 25 patients	Conventional Septoplasty 25 patients
1	Bleeding	0 (0%)	1 (4%)
2	Synechiae	1 (4%)	2 (8%)
3	DNS	2 (8%)	4 (16%)
4	Epistaxis	1 (4%)	1 (4%)
5	Crusting	0	2 (8%)

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DISCUSSION

In the present comparative study of Endoscopic versus conventional septoplasty in the Jharkhand population, The clinical manifestations were: Right DNS is operated in 6 (24%) by CS and 5 (20%) by ES; left DNS is operated by ES; 4 (16%) by CS and 5 (20%) by ES, spur is operated in 6 (24%) by CS and 4 (16%) by ES Hypertrophied IT is operated by 7 (28%) by CS and 8 (32%) by ES, polypoid MT is operated in 1 (4%) by ES; concha is operated by 1 (4%) by ES Discharge of nasal cavity: 2 (8%) by CS, 1 (4%) by ES [Table 1]. Post-surgical complications were Bleeding (0% in ES and 1 (4%) in CS), Synechiae – 2 (8%) in ES, 4 (16%) in CS
DNS – 2 (8%) in ES; 4 (16%) in CS
Epistaxis – 1 (4%) in ES, 1 (4%) in CS
Crusting – (0%) in ES 2 (8%) in CS
[Table 2] These findings are more or less in agreement with previous studies.[6-8]

In the present, minimal post-surgical complications were observed in Endoscopic septoplasty (ES). It helps to deal with posterior deviations, high deviations, and isolated spurs. It gives better illumination and precise vision of the anatomy of the nasal cavity and thus helps in the proper planning of surgery. ES was performed with minimal incision and minimal manipulation. This resulted in minimal tissue damage, minimal removal of the septum, and precise reconstruction. So that the stability of the septum is not compromised, mucosal tears are avoided.[9]

Under the endoscopy technique, one could identify the bleeding points and reduce the incidence of haemorrhage. In the case of isolated spurs, it was easier to avoid mucosal tears.[10]

Endoscopic septoplasty (ES) is mostly preferred to gain better access to surgical site as in the cases of ESS (Endoscopic sinus surgery), but in complex deformities and caudal deviation, conventional septoplasty (CS) was more ideal and beneficial, and synaechiae had significant results in the conventional method rather than ES.[11] Due to its high illumination, the Endoscopic technique can be used as a teaching tool for students, nurses, etc.

CONCLUSION

In a comparative study of Endoscopic Septoplasty v/s Conventional septoplasty, it can be concluded that ES facilitates accurate identification of pathology due to better illumination, which helps access remote areas, and magnification. It has precise resection of pathological areas through precise repair. Moreover, it has the fewest post-surgical complications. However, ES has its own limitations, which include loss of binocular vision, the need for frequent cleaning of the tip of the endoscope, especially when there is more bleeding and the fact that by using an endoscopic approach to septoplasty, complex determinates with caudal deflections cannot be corrected. Hence, Every ENT surgeon has to know the pros and cons of both techniques to avoid undue complications Moreover, such clinical trials must be carried out on a large number of patients in hi-tech hospitals where all the latest techniques are available to confirm these results.

Limitation of Study: Due to the tertiary location of the present institution, the small number of patients, and the lack of the latest technologies, we have limited results.

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