

Comparative study on efficacy of endoscopic versus conventional septoplasty

Introduction

The most common rhinologic complaint is nasal obstruction due to DNS (Deviated Nasal Septum). Nasal deviation can be congenital, developmental or traumatic (forceps delivery). Septoplasty is a surgical procedure to correct septum deformity to improve nasal breathing. Ideal surgical procedure for DNS should be conservative, effective, avoids iatrogenic deformity and have scope for revision surgery. Endoscopic septoplasty provides adequate visualization (allowing easy flap raising.), easy instrumentation, easy access to sinuses, aids limited resection, has acceptable outcomes, lesser hospital stay, useful teaching tool & limited complications (like flap tear & hematoma formation) [1]

Aim: Comparing efficacy of endoscopic septoplasty with conventional septoplasty in treating symptomatology’s (using Visual Analogue Scale) and deformities.



fig 1. Conventional septoplasty image showing a) anterior septal defect b) freer's incision and c) raising of muciperichondrial flap

Materials & methods

This prospective study consists of 70 randomly selected patients with DNS. It is a double blinded randomized control trial. Inclusion criteria: a) age group 18-35 yrs. b) No evidence of active infection in the nose and PNS. c) DNS with Cottle’s type II & type III deviation. Patients were randomized into two groups Group A compromised of 35 patients undergoing Conventional septoplasty and Group B compromised of 35 patients undergoing Endoscopic septoplasty. The subjective and objective evaluation of postoperative results was done by VAS ((score <3 no improvement, score 4-7 as improved and >7 score as complete resolution of symptoms) and nasal endoscopy respectively.

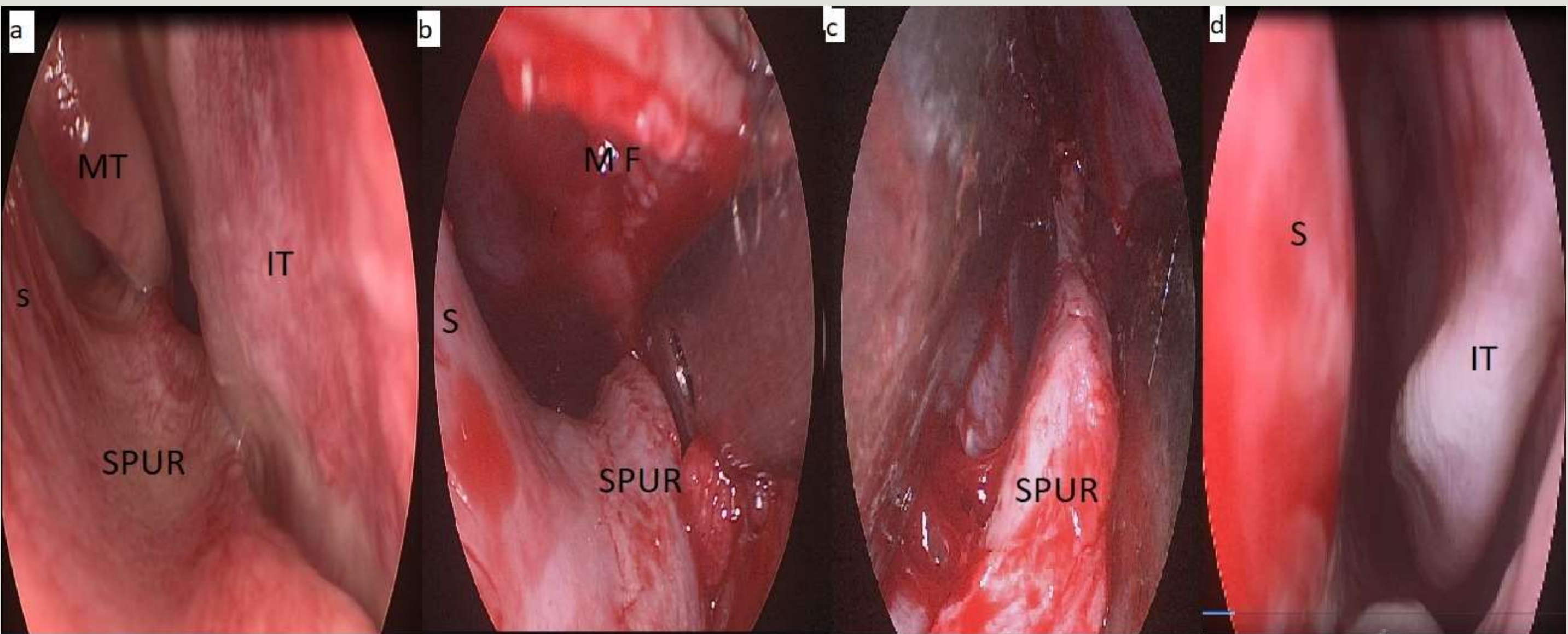


FIG 2. Endoscopic septoplasty showing a)preop septal spur impinging on IT b) raised mucoperichondrial flap with delineated spur c) septal cartilage incised to remove spur d) post spur removal septum and IT with space between them. S septum, MT middle turbinate, IT inferior turbinate, MF mucoperichondrial flap.

Table 1. Comparison between preoperative and postoperative symptoms								
Symptoms	Preoperative		Post-operative					
	Conven-tional n=35	Endosc-opic n=35	Conventional septoplasty			Endoscopic septoplasty		
			Complete resolution n	Improv-ement	No benefit	Complete resolution n	Improv-ement	No benefit
Nasal obstruction	35 (100%)	35 (100%)	14 (40%)	13 (37.1%)	8 (22.9%)	18 (51.5%)	16 (45.7%)	1 (2.9%)
Headache	23 (65.7%)	24 (68.6%)	12 (52.2%)	9 (39.1%)	2 (8.7%)	12 (50%)	9 (37.5%)	3 (12.5%)
Hyposmia	19 (54.3%)	20 (57.1%)	9 (47.4%)	8 (42.1%)	2 (10.5%)	9 (45%)	9 (45%)	2 (10%)
Rhinorrhea	13 (37.1%)	10 (28.6%)	6 (46.2%)	4 (30.8%)	3 (23.1%)	6 (60%)	4 (40%)	0
Post nasal drip	7 (20%)	10 (28.6%)	2 (28.6%)	1 (14.3%)	4 (57.1%)	6 (60%)	3 (30%)	1 (10%)

n= number of patients

Results

Maximum number of patients belongs to 18-20 years. Male: female ratio 1.19: 1. All patients had history of nasal obstruction. The preoperative and postoperative results among two groups have been tabulated in Table 1 & 2. It was observed that endoscopic septoplasty is superior in treating nasal obstruction, rhinorrhea, PND, posterior deviation, septal spur and inferior turbinate contact compared to conventional septoplasty. However, anterior deviation correction was more efficient in conventional septoplasty. Endoscopic septoplasty was more efficient in treating posterior deviation (90.9% Vs 53.9%), septal spur (87.5% Vs 59.1%) and contact with inferior turbinate (80% Vs 71.4%).

Table 2. Endoscopic comparison of septal deviations among two groups

Endoscopic findings	Preoperative n (%)		Postoperative improvement n (%)	
	Conventional	Endoscopic	Conventional	Endoscopic
Anterior deviation	11 (31.4)	12 (34.3)	6 (54.5)	5 (41.7)
Posterior deviation	13 (37.1)	11 (31.4)	7 (53.8)	10 (90.9)
Septal spur	22 (62.9)	24 (68.6)	13 (59.1)	21 (87.5)
Inferior turbinate contact	14 (40)	15 (42.9)	10 (71.4)	12 (80)

n= number of patients.

Our study shows consistent results with Leena Jain study,[3] that endoscopic septoplasty is far superior in treating nasal obstruction (97% Vs 77%), rhinorrhea (100% Vs 76.9%) and PND (90% Vs 42.9%) when compared to conventional septoplasty. However, conventional septoplasty had only little extra edge in relieving headache (91.3% Vs 87.5%) and Hyposmia (90% Vs 89.5%). observed in the present study.

The superior success rate in endoscopic septoplasty group may be attributed to excellent visualization with endoscopes. However, anterior deviation correction was more efficient in conventional septoplasty (54.5% Vs 41.7% in endoscopic septoplasty), may be because the anterior most deviations make it difficult to manage the endoscope and instruments simultaneously. No major complications were observed in the present study.

Conclusion

Endoscopic septoplasty aids in better identification and treatment of nasal pathology and is superior compared to conventional septoplasty in treating symptomatology as well as deformities. In addition, it helps in documentation and is an efficient teaching tool.

RECOMMENDATIONS

1.Endoscopic septoplasty should be used in:

- Posterior deviation, as it helps in better visualization.
- Isolated spur, as it helps in its correction with minimal intervention.
- Wherever there is need of correction of septal pathology in various surgeries like FESS, endonasal DCR, Skull base surgeries etc.
- Teaching the undergraduate and post graduate students.

2. In cases there is presence of anterior as well as posterior septal pathology, combined conventional and endoscopic approach should be used.

Discussion

As per Hayton septal surgery performed during childhood carries risk of external deformities and interferes with subsequent nasal growth [2]. Amongst adults, age has no influence on septal surgery.

1. Chung BJ, Batra PS, Citardi MJ, Lanza DC. Endoscopic septoplasty: revisitation of the technique, indications and outcomes. *Am J Rhinol* 2007;21(3):307-311
2. Hayton CH. An investigation into the results of the submucous resection of the septum in children. *J Laryngol* 1916:132-138
3. Jain L, Jain M, Chouhan AN, Harshwardhan R. Conventional Septoplasty versus Endoscopic Septoplasty: A Comparative Study. *Journal of Scientific Research* 2011;4(2):24-28