

Original Article

Comparative Study of Endoscopic Septoplasty without and With Endonasal-Septal Suturing Techniques

Dodia M N*, Shah N**, Shah A***

*Assistant professor, Dept. of ENT, P.D.U. medical college, Rajkot

**ENT Surgeon, Niyati ENT Hospital, Ahmedabad

***Associate professor (Honorary), Dept. Of ENT, Smt. N.H.L. Medical College, Ahmedabad

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ABSTRACT

Background: After the introduction of nasal endoscope, endoscopic septoplasty became the first choice of most surgeons.

Aim: The purpose of the study is to compare the results of the endoscopic septoplasty without and with endonasal septal suturing techniques.

Materials and Methods: It was prospective study of 60 patients that came in our hospital with nasal blockage.

Results: In our study, only 6% of patients experienced nasal pain, discomfort and headache in endonasal septal suture technique while it's much higher (76%, 86%, 70% of patients respectively) in without suture technique. Highest number of cases was from 3rd and 4th decade of life in both sexes while male: female was 6:4.

Conclusion: Endonasal septal suture technique of endoscopic septoplasty has shorter hospital stay, early recovery and smooth post op period as compared to without suture technique.

Key words: Endonasal septal suture, septoplasty

INTRODUCTION

Nasal septum divides the nasal cavity in two parts. Nasal septum is frequently deviated but requires surgical correction only if it became symptomatic. Nasal blockage is the most common symptoms in rhinology practice and deviated nasal septum is the most common cause of nasal blockage [1]. Deviated nasal septum may also present with epistaxis, sinusitis, headache and obstructive sleep apnea. Various surgeries have been developed for the correction of deviated nasal septum. Surgery on deviated nasal septum has progressed from sub mucosal resection (radical removal of cartilage) to Septoplasty. Septoplasty is among the three most commonly performed surgery in otorhinolaryngology. Further refinements in the diagnosis and management of nasal pathology are possible with the use of nasal endoscope [2]. Over the last two decades, the endoscope has started to play a major role in every aspect of rhinology and the septum is no exception. Surgeons have started to do septoplasty with endoscope [3]. In comparison to conventional septoplasty, endoscopic septoplasty has many advantages like brighter illumination, proper evaluation of septal pathology, precise surgery, less intra-op and post op bleeding, less

cosmetic complication etc. but routinely after endoscopic septal correction, surgeon usually needs to pack nasal cavity for Various reason [4]. So further advancement in surgery made and endoscopic endo-nasal septal correction with suturing practiced by otorhinolaryngology [5]. The aims and objectives were to compare the endoscopic septoplasty without and with endo-nasal suture technique in the following aspects. Pre-OP time taken for surgery, early Post-op nasal pain, discomfort experienced by patients, headache, hospital stay, bleeding, hypoxia. Follow-up synechia (adhesion) and septal perforation.

MATERIAL AND METHODS

The clinical prospective study was carried out in the department of otorhinolaryngology and head and neck surgery at Sheth Vadilal Sarabhai General Hospital Ahmedabad between January 2010 to June 2012. Total of 60 cases were taken for the study irrespective of socioeconomic status, sex, occupation and address. Patients were divided in two groups using simple randomization technique, each group containing 30 patients. One group of patients underwent endoscopic Septoplasty without suturing technique and other group underwent for

endoscopic septoplasty with suturing technique. Preoperative evaluation of all patients were done with 0 degree 4 mm rigid nasal endoscope for identification of most deviated part of septum, posterior deviated nasal septum, spur, septal perforation or any other associated pathology.

Inclusion criteria – patients in the age group between 18 to 60 years having nasal blockage and only deviated nasal septum which was confirmed by nasal endoscopy.

Exclusion criteria – patients age below 18 years and above 60 years, having allergic rhinitis, having upper respiratory tract infection, having any kind of endo-nasal mass or tumor like sinonasal polyposis. Revision septal surgery was also excluded.

Techniques of endo-nasal septoplasty

The procedure was performed under general anaesthesia. The septum was injected with 1%xylocaine in 1:20,0000 adrenaline on the convex side of the most deviated part of the septum using 0 degree 4 mm rigid nasal endoscope. Hemitransfixation incision was made. A submucoperichondrial and submucoperiosteal flap was raised under direct visualization with endoscope and most deviated part of the septum was removed. Haemostasis achieved and flap repositioned back [6].

Figure 1: Technique of incision over septum



WITHOUT SUTURING:

After repositioning of flap both nasal cavities was packed with Vaseline gauge and dressing kept. Packing was kept for 2 days and during that period patient was also kept indoor.

WITH SUTURING;

After repositioning of flap, we take suture with vicryl 3-0 continuous through and through quilting suture [7].

Patients was kept in-door for 1 day for observation and discharged after that.

Figure 2: endoscopic view of technique of septal suturing



RESULTS

In the present study male to female ratio for deviated nasal septum was 6:4. The most commonly affected subject was belonged to 3rd and 4th decade of life in both the sexes (approximately 78%). (Table1)

Table 1: distribution according to age and gender

Gender	18-30 year	31-40 year	41-50 year	51-60 year	Total
Male	15 (40.54)	13 (37.13)	4 (10.81)	5 (13.51)	37 (61.66)
Female	11 (47.82)	8 (34.78)	3 (13.04)	1 (4.34)	23 (38.33)
Total	26 (43.33)	21 (35)	7 (11.66)	6 (10)	60 (100)

(Figures in the parenthesis shows percentages)

The average time taken for endonasal suturing in endoscopic septoplasty is almost 13 -15 minutes more than in without suturing. It means endonasal suturing technique prolongs surgical time and so increases the anaesthetic drug exposure to the patients as compared to without endonasal suturing technique [8] (Table 2).

Average hospital stay in endonasal suture technique is 1 to 2 days less than without suture technique, which reduces surgical cost to patients and early resumption of work (Table 2).

Almost 76% of patients experienced nasal pain due to need of packing in without suturing technique while its only 6% in with suturing technique as there is no need of packing, similarly due to packing in without suturing technique 86% patients complaining of discomfort while its only 6% in with suturing technique. Because of nasal pain and discomfort, 70% patients also experienced headache in without suture techniques while its 6% in with suture technique. So the three major concerns from patient's as well as surgeon's point of view are pain, discomfort and headache is very less in endonasal suture technique (Table 2).

23% patients experienced nasal bleeding after pack removal in without suturing while its 3% in endonasal suture technique (Table 2).

Hypoxia was noted in 10% of patients in without suture technique and most of them were elderly in 5th or 6th decade of life. So in elderly patients it is better to do endonasal suturing to avoid nasal packing and related consequences [8] (Table 2).

In follow up at 3 month, synechiae or adhesion was found in 20% of patients without suturing, might be due to nasal packing while in with suture technique incidence of synechiae or adhesion was none or negligible. We found single case of septal perforation in without suturing technique might be due to flap necrosis. (Table 2)

Table 2: comparison of two techniques in various aspects

	Without endonasal suturing (N=30 patients)	With endonasal suturing (N=30 patients)
Per op		
Time taken (average time per surgery)	30-45 minutes Mean time 37 minutes	30-70minutes Mean time 50 minutes
Mucosal tear	11(36.66)	7(23.33)
Post op		
Hospital stay(average stay per surgery)	2-3 days	1-2days
Pain	23(76.66)	2(6.66)
Pt.'s discomfort	26(86.66)	2(6.66)
Headache	21(70)	2(6.66)
Bleeding	7(23.33)	1(3.33)
Hypoxia	3(10.00)	0(00)
Follow up (final outcome)		
Synechiae/adhesion	6(20.00)	0(00)
Septal perforation	1(3.33)	0(00)

(Figures in the parenthesis shows percentages)

DISCUSSION

Septoplasty is the treatment of choice for symptomatic deviated nasal septum but it has evolved from conventional headlight septoplasty to endoscopic septoplasty and further progressed from without suturing to with suturing [9]. Choice of technique depends upon surgeon's skill and availability of equipment. In our study, we find the endoscopic septoplasty with suturing technique better in terms of post op less pain, less headache, less hospital stay that also reduce expenditure to

patient and less chances of hypoxia as compared to endoscopic septoplasty without suturing.

CONCLUSION

It was our observation that the patients with the suture did better in terms of shorter duration of hospital stay, early resumption of work and a smooth post op recovery period. Though per se endoscopic technique are cost and time intensive and technically demanding it was found to be worthwhile to employ endonasal septal suturing in endoscopic septoplasty to achieve better surgical outcomes and patients satisfaction.

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Corresponding Author:

Dr. Mukesh Nathabhai Dodia
Block E -9, Govt medical staff quarter,
Opp.jam tower chowk, Jamnagar road,
Rajkot-360001
Email: drmukeshdodia0937@gmail.com

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