

Prevention of Intra Nasal Adhesions by Using Intranasal Splints after Septoplasty

SHAHBAZ MUJTABA GHOURI¹, AMIR CHAUDRY², AYESHA SHAFI³, MUHAMMAD NADEEM⁴

ABSTRACT

Aim: To determine the outcome of intra nasal splints following septoplasty in patients of deviated nasal septum.

Main outcome measures: Main outcome measure was the prevention of intra nasal adhesions.

Study design: Descriptive case series.

Method: The Study was conducted at department of ENT, King Edward Medical University/Mayo Hospital, Lahore, from April 20th, 2009 to October 19th, 2009. 90 patients with deviated nasal septum were selected & septoplasty was done under general anesthesia. Intra nasal splints following septoplasty were placed, followed by anterior nasal packing. Nasal packing was removed on 1st post-operative day while nasal splints were removed at 10th post-operative day. Patients were reexamined after 3 weeks of surgery for intra nasal adhesions.

Results: Septoplasty with intra nasal splints reduced the intra nasal adhesions in 87(96.6 %) patients.

Conclusion: In patients with deviated nasal septum undergoing septoplasty, use of intra nasal splints was highly effective in reducing the incidence of intra nasal adhesions.

Keywords: Deviated nasal septum, Intra nasal splints, Septoplasty, Intra nasal adhesions.

INTRODUCTION

A deviated nasal septum (DNS) is labeled when the septum is not in the midline^{1,2} and causing symptoms like nasal obstruction, chronic nasal congestion, sinusitis, repeated ear infections, headache or nose bleed^{3,4}.

Septoplasty is the corrective surgery for these symptomatic septal deviations⁵. Surgical complications of septoplasty are relatively rare; however, there is the possibility of hemorrhage (bleeding), infection, septal perforation and intranasal adhesions⁶. Formation of adhesions between septum and lateral wall of nose is a common problem after nasal surgery^{7,8}. The prevalence of adhesions was reported to be 6-11%. It is even higher (31%) if there is turbinate resection in combination with septoplasty⁹.

Rhinologists all over the world have frequently been using intranasal splints to prevent intranasal adhesions¹⁰. Splints most widely used at present are made from silicon. According to most of the studies they do reduce the incidence of adhesions formation; however they are also associated with increased morbidity such as nasal discomfort, vestibulitis and septal perforation.^[11] The available literature does not give a clear definition of its role in intranasal surgery. There has been controversy regarding the use of

intra nasal splints and their function in preventing intranasal adhesions^{12, 13, 14}.

Our study will account for the outcome (in terms of intra nasal adhesions) of septoplasty with intra nasal splints, to formulate a set plan for using splints for these patients so that they may benefit both in terms of morbidity as well as cost effectiveness.

PATIENTS AND METHODS

The study was conducted at department of ENT, King Edward Medical University/Mayo Hospital, Lahore, from April 20th, 2009 to October 19th, 2009. 90 patients with deviated nasal septum were included in the study. Risk benefit ratio & ethical issues were discussed. Patients were operated under general anesthesia & splints were placed followed by anterior nasal packing in both nasal cavities. All the patients were given antibiotics & analgesics for 1 week. All patients were given liquid paraffin nasal drops for 3 weeks. On 1st post-Operative day nasal packing was removed & patients were discharged while nasal splints were removed at 1st follow up, at 10th post op day. 2nd & last follow up was done after 3 weeks of surgery & patients were examined for intra-nasal adhesions & findings were noted on a standardized proforma.

RESULTS

Out of 90 patients 56(62.22%) patients were male & 34(37.77%) patients were female. Patients who presented with deviated nasal septum were selected

¹Assistant Pro. ENT, Allama Iqbal Medical College Lahore.

²Assit Prof. ENT, M Islam Medical & Dental College, Gujranwala.

^{3,4}Assistant Pro. ENT, AzraNaheed Medical College Lahore.

Correspondence to Dr. Shahbaz Mujtaba Ghouri, Email: dr_shahbaz1970@yahoo.com Cell:0300-9490672

from 18-50 years of age group. Mean age of the patients was 26.51 years with a standard deviation of + 5.812. Most common presenting symptom, nasal obstruction was present in 36(40%) out of 90 patients. The second most common presenting complaint was persistent rhinorrhea in 21(24%) of patients. Headache/facial pain was present in 5 (5.5%) patients. Only 3(3.3%) patients presented for cosmetic reasons. A total of 11(12.22%) patients presented with mixed symptoms.

With the use of intranasal splints, intranasal adhesions were found in only 3(3.33%) patients which means 87(96.66%) patients did not developed intra nasal adhesions.

Table 1: Age distribution of patients (n=90)

Age(years)	n	%age
20-25	33	36.66
26-30	37	41.11
31-35	8	8.88
36-40	12	13.33

Mean±SD 27.88 + 5.06 Years

Table 2: Presenting symptoms

Symptoms	n	%age
Nasal obstruction	36	40
Rhinorrhea	21	24
Head ache and facial pain	5	5.5
Cosmetic reason	3	3.3
Mixed symptom	11	12.22

Table 3: Prevention of Intra Nasal Adhesions.

Intranasal adhesions	n	%age
Yes	3	3.3
No	87	96.66

DISCUSSION

Intranasal adhesions are relatively common after septoplasty¹⁵. Though up to 36% of cases intranasal adhesions could be found, however not all of them were functionally relevant^{16,17}. According to a study use of nasal splinting for 4 to 7 days could avoid intranasal adhesions in almost all cases^{18,19}.

Intranasal splints made of soft silicone are most widely used though Intranasal splints made of x ray films and suture packing are also described^{20,21}. We used soft plastic material of Intravenous fluid bottles as intranasal splints. According to the results of our study, only 3 out of 90 patients developed nasal adhesions. These results are comparable to other international studies which also state a significant lower rate of nasal adhesions in splinted patients than non-splinted patients^{22, 23}. Campbell et al. used nasal splint on one side of the nose of 106 patients undergoing a variety of intranasal procedures, all adhesions occurred on the non-splinted side and

more commonly when bilateral wall procedures had been performed (8% in splinted vs. 26% in non-splinted), they concluded that splints were justified for bilateral wall procedures but their increased morbidity did not justify their use in single wall procedures²⁴. Osama Galal Awad also showed that the use intranasal splints in single wall procedure can cause increased postoperative pain in the short term follow-up period with significant evidence of decreasing rates of intranasal adhesions²⁵.

It is clear from above discussion that conflicting data is present for the use of intra nasal splints. Majority of the studies show that adhesions are reduced after splinting but these studies have been done on different nasal procedures. Most of studies advocate splinting in double wall procedures while some studies showed more morbidity associated the use intranasal splints in single wall procedures. So we think more research is needed to establish advantage and morbidity associated with the use of intranasal splints especially in single wall procedures.

CONCLUSION

Intranasal splints prevent nasal adhesion formation after septoplasty.

REFERENCES

1. Gray LP. Deviated nasal septum. Incidence and etiology. *Ann Otol Rhino Laryngol* 1978; 87: 3-20.
2. Cole P, Chaban R, Naito K, Oprysk D. The obstructive nasal septum. *Arch Otolaryngol* 1988; 114: 410-2.
3. Brain D. The Nasal Septum. In: Kerr AG. Scott-Brown's Otolaryngology. 6th ed, London; Butterworths 1997: 11/01-11/27.
4. Min Y, Jung H W, Kim CS. Prevalence study of nasal septal deformities in Korea: Results of a nation-wide survey. *Rhinology* 1995; 33: 61-5.
5. Gray LP. The deviated nasal septum. Etiology. *J Laryngol Otol* 1965; 79: 567-75.
6. Muhammad IA, Rahman NU. Complications of the surgery for deviated nasal septum. *J Coll Physicians Surg Pak*. 2003 Oct; 13: 565-8.
7. Shone GR, Clerg RT. Nasal adhesions. *J Laryngol Otol* 1987; 101: 555-7.
8. White A, Murray JA. Intranasal adhesion formation following surgery for chronic nasal obstruction. *Clin Otolaryngol* 1988; 13: 139-43.
9. Al-Mazrou KA, Zakzouk SM. The impact of using intranasal splints on morbidity and prevalence of adhesions. *Saudi Medical Journal* 2001; 22 (7): 616-8.
10. Ajmal M, Tirmizey MA, Rehman AU, Ahmed N. Role of nasal splints. *The Professional* 1998; 5: 255-8.
11. Ahn MS, Maas CS, Monhian N. A novel, conformable, rapidly setting nasal splint material: results of a prospective study. *Arch Facial Plast Surg*. 2003; 5:189-92.

12. Fischer ND, Biggars WP, MacDonald HJ. The bookend nasal septal splint. *Otolaryngol Head Neck Surg* 1981; 89: 104-6.
13. Watson MG, Marshall HF. Intranasal adhesions which recur despite splinting: an ominous sign? *J LaryngolOtol* 1990; 104: 426-7.
14. Kriukov AI, Turovskii AB, Tsarapkin Glu. Use of intranasal splints in acute septoplasty in the treatment of composite nasoseptal fractures. *Vestn Otorinolaringol.* 2007; 2: 51-3.
15. Amy SK, Joseph KH. Complications and Management of Septoplasty. *Otolaryngologic Clinics of North Am* 2010;43(4):897-904.
16. Caniello M, Passerotti GH, Goto EY, Voegels RL, Butugan O. Antibiotics in septoplasty: Is it necessary? *Brazilian J Otolaryngol* 2005;71(6): 734-8.
17. Altinors K, Ocbiyi A, Aydin E, Yilmaz C, Gulsen S. Meningoencephalocele formation after septoplasty and management of this complication. *Turk Neurosurg* 2008;18(3):281-5
18. Shone GR, Clegg RT. Nasal adhesions. *Cambridge J Laryngol&Otol* 1987;101:555-57.
19. Roberto G, Fabiano H, Maria R. Frequency of nasal synechiae after septoplasty with turbinectomy with or without the use of nasal splint.2008. *Arch otolaryngol.* Sao Paulo 2008;12(1):24-27.
20. Salinger S, Cohen D. Surgery of the difficult septum. *Arch Otolaryngol* 1955; 61: 419-421.
21. Pringle MB. The use of intra-nasal splints: a consultant survey. *UK. ClinOtolaryngol Allied Sci* 1992;17(6):535-9.
22. Cook AC, Murrant NJ, Evans KL, Lavelle RJ. Intra-nasal splints and their effects on intra- nasal adhesions and septal stability. *ClinOtolaryngol* 1992;17:24-27.
23. Tang, Shan &Kacker, Ashutosh. (2012). Should intranasal splints be used after nasal septal surgery? *The Laryngoscope.* 122. 1647-8. 10.1002/lary.23324.
24. Johnson N. Septal surgery and rhinoplasty. *Transactions of the American Academy of Ophthalmology and Otolaryngol* 1964;68: 869-873.
25. Awad, Osama & A. Hamid, Khalf. (2015). The Value of Intranasal Splints After Partial Inferior Turbinectomy. *Indian Journal of Otolaryngology and Head & Neck Surgery (Jan-Mar 2015)* 67(1):75-80; DOI 10.1007/s12070-014-0791-6.