

ORIGINAL ARTICLE

Efficacy of Nasal Splints in Reducing the Incidence of Intranasal Adhesions Following Septoplasty

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ABSTRACT

Objective: To determine the efficacy of nasal splints in preventing adhesion formation in patients undergoing septoplasty for deviated nasal septum (DNS).

Study Design: Quasi experimental study.

Place and Duration of Study: The study was carried out at ENT department, Holy Family Hospital, Rawalpindi from January 2010 to January 2011.

Materials and Methods: Two hundred and sixty patients with DNS requiring septoplasty were included in this study. They were divided in two groups A and B with each group consisting of 130 patients. In group A splints were used postoperatively after septoplasty while in group B no splints were used. In group A nasal splints were removed on 14th postoperative day. All patients in group A and B were followed up regularly in OPD for six weeks for development of adhesions to determine efficacy of nasal splints in prevention of adhesions.

Results: In group A average age was 29.13 years+10.11SD while it was 27.6 years+ 9.5SD in group B. Male to female ratio was 1.15:1. There was no statistically significant difference in the incidence of adhesion formation between two groups with p-value of 0.734.

Conclusion: There is no significant advantage of routinely using intranasal splints in septoplasty patients for prevention of adhesion formation.

Key Words: *Nasal Splints, Septoplasty, DNS.*

Introduction

Deviated nasal septum is one of the most common ENT complaints and is treated by performing septoplasty.¹ Formation of intranasal adhesions is an important postoperative complication of septoplasty with an incidence of 10-36%.^{1,2,3} Rhinologists all over the world routinely use intranasal splints after nasal septal surgery to prevent the adhesions and also to maintain nasal stability and improve the results of septoplasty. This use of intranasal splints is not evidence based and splints are associated with increased pain and discomfort to patient.^{3,4,5} Many studies have been

done worldwide over the years to determine the efficacy of intranasal splints in prevention of intranasal adhesions to justify their use.^{6,7,8}

Although many surgeons insert nasal splints routinely, no well-designed trials exist to support their use.³ The nasal splint increases the post-operative pain and discomfort.^{6,7} Although splints are in common practice but their use has shown limited benefit in terms of prevention of adhesions when compared with septoplasty patients without splints.⁶ So in this study we tried to find out efficacy of nasal splints in prevention of nasal adhesions to justify their routine use in patients undergoing septoplasty in our set up.

Materials and Methods

It is a quasi experimental study carried out in department of Ear, Nose and Throat of Holy Family Hospital, Rawalpindi from January 2010 to January 2011. Patient coming in outpatient department in age group of 16 to 50 years who were diagnosed with deviated nasal septum by anterior rhinoscopy were included in the study. Patients with turbinate hypertrophy, nasal polyps, previous surgeries or requiring other lateral wall nasal procedures or having comorbidities like diabetes or hypertension were not included.

Two hundred and sixty patients with DNS requiring

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septoplasty were admitted in the ward. The purpose and benefits of the study was explained to patients and a written informed consent was obtained. All patients were worked up with detailed history and clinical examination followed by routine pre operative investigations. The patients were randomly allocated in two groups by convenient sampling technique. Patients in group A were subjected to use of splints after septoplasty and in patients in group B no splints were used after septoplasty.

All patients were operated by the same ENT surgeon having five years of experience in nasal surgery. After surgery nasal packing was removed after 24 hours and patients were discharged on 2nd postoperative day. Patients in both groups were given same oral antibiotic and analgesic for one week. Both groups were advised saline nasal douches three times a day for two weeks. In group A nasal splints were removed on 14 postoperative day. All patients in group A and B were followed up weekly in OPD till 6th week post operatively to determine intervention efficacy in terms of absence of adhesions.

All the above mentioned data was collected using performa. Data was analyzed by using SPSS version 20. Mean and standard deviation were calculated for age. Frequencies and percentages were calculated for gender and efficacy. Chi square test was used to compare the efficacy in both the groups. P value of <0.05 was considered significant.

Results

Average age was 27.6 years+ 9.5SD in group A while in group B it was 29.13 years +10.11SD. The age distribution among the groups was insignificant with p-value 0.860. Further demographic characteristics of both groups A and B are shown in table I and II.

In group A adhesions were seen in four patients (3.1%) and in group B five patients developed adhesion (3.8%). This difference between two groups was insignificant with p-vale of 0.734 (Table III).

Table I: Age Wise Distribution in Group 'A' and 'B'

	20 years or less	21-30years	31-40years	41 years or more
Group A	39(30%)	51(39.2%)	27(20.8%)	13(10%)
Group B	24(18.5%)	56(43.1%)	27(20.8%)	23(17.7%)

(P value= 0.860)

Table II: Gender Wise Comparison in Group 'A' and 'B'

Gender	Group A	Group B
Male	70	69
Female	60	61

(p value=0.901)

Table III: Adhesion Formation in Groups 'A' and 'B'

Adhesion formation	Group A	Group B
Yes	4(3.1%)	5(3.8%)
No	126(96.9%)	125(96.2%)

(p value = 0.734)

Discussion

In our study although there is higher incidence of adhesions in the non splinted group (Group B) but in comparison of the both groups statistically this difference was not significant and this may be due to intra operative surgical technique and postoperative nasal douching with normal saline to prevent crust formation and thus formation of adhesions.

Similar findings were seen in studies of some other authors. Tang and Kacker concluded that nasal splints cause significantly increased postoperative pain and there is not sufficient evidence that they are effective in decreasing the incidence of intranasal adhesions.⁶ Von Schoenberg and Robinson found out on three months postoperative follow up that the splinted and non splinted groups had the same low rate of adhesion formation of 2% which in their opinion was because of early outpatient review with careful nasal toilet on weekly basis.⁸ Cook et al showed a failure of intranasal splints in preventing intranasal adhesion(6.5% in splinted vs. 7.0% in non splinted group) and concluded that there is no clear advantage of using intranasal splints and they should therefore be used sparingly and recommended use of nasal toilet after septal surgery.⁹ Pringle et al carried out a survey of 440 consultants and found that 33% of them never or rarely used intranasal splints and reported an adhesion rate of 5.2% in non splinted patients vs. 3.9% in the splinted patients, which is not statistically significant.⁵ Like wise the results of the study done by Malki et al showed no statistically significant difference in the incidence of adhesions between the splinted and non-splinted patients.¹⁰ Study of Almoflehi also concluded that the intranasal splints are not of significant value in preventing nasal adhesion(10% in splinted vs. 21% in non splinted group) and recommendation was that the use of intranasal splints in septal surgery has to be individualized. They stressed on Nasal irrigation using saline to prevent crusting and minimizing

occurrence of adhesion.¹¹Almazrou and Zakzouk in their study found no significant difference in incidence of adhesion formation between splinted and non splinted groups (2% in splinted vs. 10% in non splinted group).¹²

On the other hand contrary to our results Deniz M et al. suggested that nasal splints were effective in reducing the incidence of nasal synechia formation.¹³ Schoenberg et al. found a low incidence of adhesions in the first week post operatively when intranasal splints were used and found that the highest incidence of intranasal adhesions occurred in non splinted patients who had surgery to both walls of nasal cavity (3.6% in splinted vs. 31.6% in non splinted).⁸ Campbell et al. inserted a nasals plint into one side of the nose of 106 patients undergoing a variety of intranasal procedures. All adhesions occurred on the non splinted side and were more common when bilateral nasal wall procedures had been performed (8% in splinted versus 26% in non splinted).¹⁴ They concluded that splints were justified for bilateral wall procedures but their increased morbidity did not justify their use in single wall procedures.¹⁴ Roberto et al. found nasal splints very effective in preventing adhesion formation in patients under going septoplasty with turbinectomy (0% in splinted vs.10.6% in non splinted group).¹⁵ Nabil-ur-Rahman concluded that complications were related to the type of procedure being performed and adhesions were common complication if intranasal splint were not provided.¹⁶ The routine use of nasal splints in septoplasty patients is still a matter of debate. Splints addsignificantly to post operative pain and discomfort. It is recommended that their use should be individualized depending upon procedure being performed. They are more justified when surgical procedures are performed on both medial and lateral walls of nose simultaneously. Alternati velysaline nasal douching and regular outpatient follow up with suction toilet are very effective in preventing intranasal crusting and thus adhesion formation.

Conclusion

There is no significant advantage of using intranasal splints routinely in patients undergoing septoplasty for prevention of adhesions provided patients are closely followed up with saline nasal douches and regular nasal toilets.

REFERENCES

1. Shone GR, Clegg RT. Nasal adhesions. *Cambridge Journal of Laryngology & Otolaryngology*. 1987; 101: 555-7.
2. KhayatFJ, Yaseen A. the effect of intranasal splint on prevention of adhesions after septoplasty. *Diyala J Med* 2012; 2: 5-12.
3. Gaia R, Coelho J, Brandao FH, Carvalho MRMS, Aquino JEP, Paula SHP. Frequencia de Sinequia Nasal aposCirurgia de Septoplastia com Turbinectomia com e semUso de Splint Nasal. *ArqIntOtorrinolaringol*. 2008; 12: 24-7.
4. Sharif M, Ali S, Zaman T. Nasal septal surgery without splints, without packing. *Ann AbbasiShaheedHosp Karachi Med Dent Coll*. 2007; 12: 17-23.
5. Pringle MB. The use of intra-nasal splints: a consultant survey. *UK.ClinOtolaryngol Allied Sci*. 1992; 17: 535-9.
6. Tang S, Kacker A. Should intranasal splints be used after nasal septal surgery? *The Laryngoscope*. 2012 Aug 1; 122: 1647-8.
7. GiJy, Won H, Young Gyu E, MyungGu K. Objective usefulness of thin silastic septal splints after septal surgery. *Am J Rhinol Allergy*. 2011; 25: 182-5.
8. Von Schoenberg M, Robinson P. The morbidity from nasal splints in 105 patients. *Clin. Oto. Laryngol*. 1992; 17: 528-30.
9. Cook AC, Murrant NJ, Evans KL, Lavelle RJ. Intra-nasal splints and their effects on intra- nasal adhesions and septal stability. *ClinOtolaryngol*. 1992; 17: 24-7.
10. Malki D, Quine SM, Pflaiderer AG. Nasal splints revisited. *Cambridge J Laryngol Otol*. 1999; 113: 725-7.
11. Almflehi MS. The impact of using intranasal splints on morbidity and prevalence of adhesions. *J Sc Tech*. 2009; 10: 1-6.
12. Almazrou KA, Zakzouk SM. The impact of using intranasal splints on morbidity and prevalence of adhesions. *Saudi Med J*. 2001; 22: 616-8.
13. Deniz M, Ciftci Z, Isik A, Demirel OB, Gultekin E. The impact of different nasal packings on postoperative complications. *American journal of otolaryngology*. 2014; 35: 554-7.
14. Campbell JB, Watson MG, Sheno PM. The role of intranasal splints in the prevention of post-operative nasal adhesions. *Cambridge JLaryngolOtol*. 1987; 101: 1140-3.
15. 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: 24-7.
16. Nabil ur Rahman MA. Complications of surgery for deviated septum.*JColl Physicians Surg Pak*. 2003; 13: 565-8.