

Intranasal Adhesion Formation in Post-Septoplasty Patients

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Abstract

Background: To assess the role of intranasal splints and adhesion formation in post-septoplasty patients of deviated nasal septum (DNS).

Methods: In this descriptive study patients (n=100), undergoing septoplasty for DNS were divided into two groups. In group A (n=50) patients intranasal splints were applied after septoplasty. In group B (n=50) patients no splints were applied. Plastic splints were used bilaterally. In group A, nasal splints were removed on 14th post-operative day. All patients in group A and B were followed to look for adhesion formation. Chi-square was used to compare the splinted and non-splinted groups.

Results: There was difference in the frequency of nasal adhesion formation between the intranasal splinted patients (0%) and non-splinted (16%) which was statistically significant (p value 0.006).

Conclusion: The usage of intranasal splints in the septoplasty is very useful to prevent nasal adhesion formation.

Key words: Deviated nasal septum, Septoplasty; Intranasal splints, Adhesions

Introduction

Septoplasty and Submucous Resection (SMR) are the common surgical procedures for the correction of deviated nasal septum. Currently SMR has been replaced by septoplasty which is one of the most frequently performed surgical operations by otorhinolaryngologists worldwide¹⁻⁵. Septoplasty is the treatment of choice due to lesser complications like septal perforations, adhesion formation, saddle nose deformity and hematoma in many countries.⁶ Among these complications, the incidence of post-operative adhesion formation is 10-36%^{7,8} between the lateral nasal wall and septum and is a frequent cause of post-operative nasal obstruction.⁹

Both nasal cavities are routinely packed with anterior nasal packing after septoplasty but there are different criteria regarding material used and how long the packing should be kept inside.^{10,11} Adhesion formation can be prevented by regular nasal suctioning^{9,12}.

Salinger and Cohen were the first to use intranasal splints for septal surgery¹³ which are of different types like silastic, plastic or silicone and are placed alongside of nasal septum to prevent contact between raw surface of septum and lateral nasal wall and also helpful in maintaining post-operative septal stability¹⁴. Although nasal splints increase the post-operative discomfort but worldwide rhinologists frequently use them to prevent adhesion formation.^{15,16}

Recently, silastic septal splints have been introduced in septoplasty which are thinner and more flexible than the previous products, thus decreasing postoperative pain.¹⁷ Veluswamy et al showed use of intranasal splints in septal surgery significantly reduced formation of postoperative nasal adhesion formation (2.5%) as compared to simple nasal packing (12.5%).¹⁴ The purpose of this study was to assess the role of intranasal splints and adhesion formation in post-septoplasty patients of deviated nasal septum (DNS).

Patients and Methods

This Descriptive study was carried out at Bilal hospital Rawalpindi, from May 2017 to April 2018 on one hundred patients who were divided into two groups by convenient sampling technique. In Group A, 50 patients had intranasal splints applied after septoplasty. In Group B, also comprising 50 patients, no splints were applied. Both male and female patients between the age of 17-50 years were included. Patients undergoing SMR, those with turbinate hypertrophy, nasal polyps, previous surgeries or requiring other lateral wall nasal procedures or having comorbidities like diabetes or hypertension were excluded. Patients fulfilling the inclusion criteria were admitted for septoplasty. Plastic splints were used bilaterally followed by nasal packing which was removed after 24 hours and patients discharged on 2nd post-operative day. Patients in both groups were treated with 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 14th post-operative day. All patients in group A and B were followed up weekly in OPD till 6th week

post operatively to look for adhesion formation. Mean and standard deviation were calculated for age of the patients. Frequency and percentage of adhesion formation was calculated for both splinted and non-splinted group of patients. Chi-square was used to compare the splinted and non-splinted groups.

Results

Out of 100 cases 73% were males while 27% were females. Age distribution ranged from 17 to 42 years with a mean age of 23.2± 5.83 years. The mean age of patients with splints was 23.04 ± 5.60 and that of patients without splints the mean age was 23.36 ±6.10. (Figure 1) The two groups did not differ statistically with respect to age distribution (p= 0.649). Frequency of nasal adhesion formation was 0% in post-septoplasty patients with the use of intra-nasal splinted group A whereas 8 (16%) patients presented with post-surgical nasal adhesion formation in without intranasal splinted group B (Table1). The Chi-square test found the difference to be statistically significant (p = 0.006). Patients who presented with adhesion formation underwent adhesionlysis under local anaesthesia

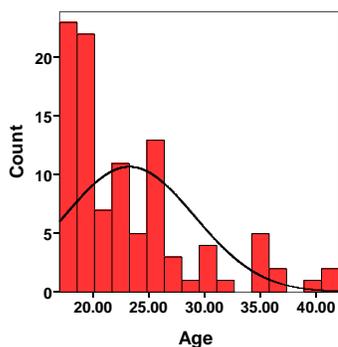


Figure 1: Age distribution

Table 1: Frequency and percentage of adhesion formation

		Adhesions		Total
		Yes	No	
Group A	With nasal splint	0 (0%)	50 (100%)	50
Group B	Without nasal splint	8 (16%)	42 (84%)	50
Total		8	92	100

Discussion

Septoplasty is a common surgical intervention performed by otolaryngologists for the correction of

symptomatic deviated nasal septum which may rarely be associated with complications like haemorrhage, haematomas and nasal adhesion formation. To minimize these complications, different types of nasal packing and intranasal splints have been used.¹⁸⁻²⁰ Although Intranasal adhesions are relatively common among these patients, they can be prevented by placing intranasal splints. White and Murray found adhesions could be prevented by insertion of intranasal splints.²¹ Some authors proved the increase of adhesion formation incidence in septoplasties when associated with turbinectomy.²² Adhesions mostly occur between septum and inferior turbinate if a tear in the septal mucosa is opposite to a mucosal defect of the turbinate, especially after concurrent interventions at the turbinate. Intranasal splints can prevent the formation of the adhesions. We observed this complication more often in associated allergic rhinitis patients whereas adhesions were not observed as long as the splints were in place.

Present study demonstrates efficacy of splints in preventing adhesion , post- septoplasty. However Mahmood et al²³ and Cook et al²⁴ reported contrary findings. ^{23,24} Campbell et al. inserted intranasal splints on one side of the nose. Of their 106 patients undergoing septoplasty, 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). Their study revealed a reduction in the incidence of adhesion formation from 26% to nil after placing the intranasal splints.²⁵ It supports the present study . Another study conducted by Rahman concluded that adhesion formation is a common complication if intranasal splint is not provided.²⁶

Conclusion

1. The routine use of intranasal splints in septoplasty individuals is still debatable. Although it creates discomfort to some extent but its advantages are clear, as none of the patients having splint insertion developed adhesions postoperatively.

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