

Effectiveness of Intranasal Splints in Preventing Nasal Adhesion

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ABSTRACT

Objective: To determine the effectiveness of intranasal splints in preventing nasal adhesion.

Study Design: Descriptive case series

Place and Duration of Study: ENT Department, Sandeman Provincial Hospital Quetta from 1st October 2020 to 31st March, 2021.

Methodology: One hundred patients of both genders were presented in this study. Patients were aged between 15-48 years. Patients details demographics age, sex and body mass index were recorded. In a general anaesthesia, a selection was made in patients with deviated nasal septum and septoplasty. Intra-nasal splints were implanted, followed by prior nasal packing after the septoplastic procedure. On the second postoperative day the nasal packing was removed while the nasal fractures were removed on the 15th day after surgery. Prevalence of nasal adhesion was observed within the follow up of four weeks.

Results: There were 58 (58%) male patients and 42 (42%) were females. Mean age of the patients were 25.66±8.14 years with mean body mass index 24.17±6.35 kg/m². Most of the patients 60 (60%) were from age group 25-35 years. Symptoms were nasal obstruction found in 42 (42%) cases followed by rhinorrhea 26 (26%). Frequency of nasal adhesion was found in 5 (5%) cases among 100 enrolled patients after septoplasty.

Conclusion: We concluded in this study that the intranasal splints were effective and safe technique in the prevention of nasal adhesion after septoplasty.

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

INTRODUCTION

Deviated nasal septum is one of the most frequent ENT problems and is treated with septoplastic treatment. The formation intranasal adhesion of septoplastic with 10-36 percent incidence is a major post-operative complication.¹⁻³ Nasal septal surgery is commonly performed by rhinologists all over the world to prevent adhesions, to maintain nasal stability as well, and to improve septoplastic results. The use of intranasal flaps does not rely on evidence, and flakes are linked to greater pain and patient discomfort.^{4,5}

In many trials globally, the effectiveness of intranasal splints in preventing intranasal adhesions has been established over many years to warrant their use.⁶⁻⁸ Though many surgeons frequently insert nasal splines, they are not subject to well-designed trials. The nasal splint enhances surgical pain and discomfort in the post.^{6,7} Although splints are widespread, their usage has demonstrated little advantage when compared to septoplastics without splints in 6 cases in terms of adhesion prevention.

The formation of septum-to-lateral nose wall adhesions is a typical complication following nasal surgery. It is reported that the prevalence of adhesions is 6-11%. If turbinate resection is combined with septoplastic treatments, it is much higher (31 percent). Intranasal splines have often been used for the prevention of intranasal adhesions by rhinologists worldwide.⁹ Splints are constructed of silicone most extensively used nowadays. The incidence of adhesion development is decreased according to most research, although higher morbidity, such as nasal pain, vestibulitis and septal perforation, is also related with it.¹⁰ The material available does not clearly define its involvement in intra-analytic surgery. There have been controversies about the use and usefulness of intra nasal splinters in intranasal adhesions prevention.¹¹⁻¹³

Our study will examine the outcome of septoplastic with intranasal splines (in terms of intranasal adhesions) in order to develop a structured plan for utilizing slitting in these patients so that both the morphing and the cost efficacy can benefit.

MATERIALS AND METHODS

This descriptive case series was conducted at ENT Department, Sandeman Provincial Hospital Quetta from 1st October 2020 to 31st March, 2021 and comprised of 100 patients. Patient's baseline details were recorded after taking written consent. Patients <15 years of age and those did not give any written consent were excluded. Patients were aged between 15-48 years. Patients details demographics age, sex and body mass index were recorded after taking informed written consent. In a general anesthesia, a selection was made in patients with deviated nasal septum and septoplasty. Intra-nasal splints were implanted, followed by prior nasal packing after the septoplastic procedure. On the second postoperative day the nasal packing was removed while the nasal fractures were removed on the 15th day after surgery. Prevalence of nasal adhesion was observed within the follow up of four weeks. Complete data was analyzed by SPSS 23.

RESULTS

There were 58 (58%) male patients and 42 (42%) were females. Mean age of the patients were 25.66±8.14 years with mean BMI 24.17±6.35 kg/m². Most of the patients 60 (60%) were from age group 25-35 years. 55 (55%) patients were literate and 45 (45%) were illiterate. 59 (59%) patients were from urban areas and 45 (45%) patients had high socio economic status (Table 1).

Symptoms were nasal obstruction found in 42 (42%) cases followed by rhinorrhea 26 (26%), mixed symptom found in 15 (15%). headache and facial pain was in 10

(10%) and cosmetic reason found in 7 (7%) cases (Table 2).

Frequency of nasal adhesion was found in 5 (5%) cases among 100 enrolled patients after septoplasty (Table 3).

Table 1: Baseline details of enrolled cases

Variable	No.	%
Mean age (years)	25.66±8.14	
Mean BMI (kg/m ²)	24.17±6.35	
Gender		
Male	58	58.0
Female	42	42.0
Age (years)		
15-25	17	17.0
25-35	60	60.0
>35	23	23.0
Literacy		
Yes	55	55.0
No	45	45.0
Residency		
Urban	59	59.0
Rural	41	41.0
Socioeconomic status		
High	45	45.0
Low	55	55.0

Table 2: Association of symptoms among enrolled cases

Symptoms	No.	%
Nasal obstruction	42	42
Rhinorrhea	26	26
Mixed symptom	15	15
Headache and facial pain	10	10
Cosmetic reason	7	7

Table 3: Prevalence of nasal adhesion after septoplasty (n=100)

Nasal Adhesion	No.	%
Yes	5	5
No	95	95

DISCUSSION

After septoplasticism, intranasal adhesions are rather prevalent.¹⁴ Although it was possible to find up to 36% of cases of intranasal adherence, they were not all functional.^{15,16} In nearly all cases, intranasal adhesions may be avoided according to a 4-7-day research.^{17,18} In this descriptive study 100 patients with ages 15-45 years were presented. Mean age of the patients were 25.66±8.14 years with mean BMI 24.17±6.35 kg/m². Our findings were comparable to the previous research in 2016.

There were 58 (58%) male patients and 42 (42%) were females. Most of the patients 60 (60%) were from age group 25-35 years. Many previous studies presented in their research that majority of the patients were males and from age group > 20 years.^[20,21] Symptoms were nasal obstruction found in 42 (42%) cases followed by rhinorrhea 26 (26%), mixed symptom found in 15 (15%), headache and facial pain was in 10 (10%) and cosmetic reason found in 7 (7%) cases.²² Intranasal splines produced from soft silicone is extensively employed, while it is also defined as intranasal spline formed from x-ray films and suture. We used intravenous fluid bottles with flexible plastic material as intranasal splitting. Only 5 patients out of 100 had nasal adhesion based on the results of our study. These results

are comparable to other worldwide research, where the rate of nasal adhesion in slit patients is substantially lower than that of non-split people.^{23,24} Johnson et al²⁵ used the nasal splint of 106 patients with various intranasal procedures on one side, all adhesions on the side of the splint, and more frequently with bilateral wall processes (8% split against 26% non split), concluded the splint was justified on the side of the splint and the increasing morbidity was justified on the side of the bilateral wall processing procedures. The use of intra-anasal splints in the one-wall technique also demonstrated that increments in postoperative pain may lead to significantly reduced rates of intranasal adhesion in the short-term follow-up.²⁶

In three-month postoperative follow-ups, von Schoenberg and Robinson²⁷ observed that the split and non-split groups had the same low 2% adhesion rate that was shown in the early ambulatory check-up with 8 meticulous nasal baths weekly. Cook et al²⁸ revealed an insufficient intranasal split to avoid intranasal attachment (6.5% split versus 7.0% non-split) and concluded that intranasal splitting is not clearly advantageous, thus it should be done sparingly and advised for nasal toilets after septal surgery. Contrary to our findings, Deniz et al²⁹ indicated that nasal splints are beneficial in lowering the incidence of formation of nasal synechia.

Intranasal splints had an important role in avoiding intranasal adhesions, Sarin et al³⁰ claimed, although it clearly increases morbidity by generating pain, irritation and crust formation. On the basis of their findings, intranasal fractures were advised, particularly in surgical procedures that simultaneously manipulate both the nose and septal lateral walls. Mahmood et al¹⁹ found septal adhesion 3.1% in the splinted group and 3.8% in non splinted group. A intranasal splint is generally appropriate to reduce intranasal sticking. However, additional co-morbidities cannot justify the routinely used intranasal splint, where cautious nasal toileting can have the same effect.

It is clearly showed that the usage of intranasal splines has contradictory facts. Most studies demonstrate that adhesion after splinting is minimized however several nasal techniques have been performed. Most research suggests double wall splinting, with some studies showing higher morbidity in single-wall intra-nasal splints. Therefore we consider that more research is needed, especially in single wall procedures, to achieve the advantages and morbidity associated with intranasal splines.

CONCLUSION

The intranasal splints were effective and safe technique in the prevention of nasal adhesion after septoplasty.

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