

ORIGINAL ARTICLE

Determine the Effectiveness of Intranasal Splints in Preventing Nasal Adhesion

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ABSTRACT

Objective: The aim of this study is to determine the effectiveness of intranasal splints in preventing nasal adhesion.

Study Design: Descriptive case series

Place and Duration: The study was conducted at ENT department of Lady Reading Hospital Peshawar and Chaudhary Muhammad Akram Teaching and Research Hospital, Lahore for the duration of six months April 2021 to September 2021.

Methods: There were 120 participants of both sexes in this research. In this study, the patients ranged in age from 16 to 50 years old. Patient demographics, such as gender, age, and height/weight were logged with their informed written consent. During general anesthesia, a patient with a deviated nasal septum and septoplasty was selected for the procedure. Immediately following the septoplasty treatment, the patient had intra-nasal splints and nasal packing placed. The nasal packing was removed on the second postoperative day, while the nasal splints were removed on the 15th day after surgery. After a three-week follow-up, frequency of nasal adhesion was calculated. Data were analyzed 24.0.

Results: Among 120 cases, 75 patients, 59.2% were between the ages of 26 and 40. The mean age of the patients was 26.34 ± 7.51 years with mean BMI 23.07 ± 9.44 kg/m². Most of the cases were 67 (55.8%) male and 53 (44.2%) were females. Nasal obstruction was found among 53 (44.2%) patients, frequency of rhinorrhea was 33 (27.5%) and mixed symptoms were found in 20 (16.7%). At final follow up prevalence of nasal adhesion was found in 9 (7.5%).

Conclusion: According to the findings of this study, intranasal splints were an efficient and safe treatment for preventing nasal adhesion after septoplasty.

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

INTRODUCTION

An part of the nose that frequently experiences both dynamic and static constriction is the internal nasal valve. Static constriction in this region is produced by the crowding of these tissues, such as septal deviation, inferior turbinate hypertrophy, and a short angle between the upper lateral cartilage and septum. The upper lateral cartilage collapses due to a lack of support from the nasal bone, septum, and lower lateral cartilage, resulting in dynamic constriction of the nasal passages. [1] Nasal obstruction is the primary effect of a deviated nasal septum on nasal function. [2] The use of nasal packing to avoid synechiae or restenosis is very common, especially following surgery. [3] This is the first time I've heard of silicone nasal splints being utilized following both functional surgeries and cosmetic treatments. When proper nasal lavages are done and silicone splints promote hemostasis as much as other materials, nasal obstruction is reduced. When it comes to choosing a nasal aid, silicone is an obvious choice because of its ability to support and stabilize the nasal septum, as well as its influence on mucosal healing in the event of probable damage. [4]

For septum surgery, silicone has grown more popular than other materials in recent years. As compared to other materials, silicone splints can be worn comfortably and

safely in the mouth for a longer period of time. [5] Certain circumstances allow for an increase in the time between treatments to ten days. When using intranasal tampons, you run the risk of causing various local or systemic consequences (such tissue necrosis or infections, for example). [6-8]

They were introduced by Salinger and Cohen in 1955, and they were used to stabilize the septum following septum surgery. [9] According to Pringle in the UK, the most prevalent reason for wearing nasal splints was to avoid adhesions. [10] One of the many applications for this device has been to secure anterior nasal packs in patients with epistaxis and keep in-place septal grafts [11]

In order to establish an organized strategy for using slitting in these patients that benefits both morphing and cost effectiveness, our study will analyze the results of septoplasty with intranasal splints in terms of intranasal adhesions.

MATERIAL AND METHODS

This descriptive case series was conducted at ENT department of Lady Reading Hospital Peshawar and Chaudhary Muhammad Akram Teaching and Research Hospital, Lahore for the duration of six months April 2021 to September 2021 and comprised of 120 patients. Patients'

baseline details were recorded after taking written consent. Those who were under the age of 16 or who had not provided written consent were deemed ineligible for participation in this study.

Patients ranged in age from 16 to 50 years. After obtaining informed written permission, the following patient demographics were recorded: age, gender, and body mass index. Patients with deviated nasal septum requiring septoplasty were selected under general anaesthesia. Following the septoplasty, intra-nasal splints were placed, followed by nasal packing. The nasal packing was removed on the second postoperative day, and the nasal splints were removed on the 15th postoperative day. The presence of nasal adhesions was discovered during a three-week follow-up period. SPSS 24.0 version was used to examine the whole set of data. For categorical variables, frequencies and percentages were utilized to represent them.

RESULTS

Among 120 cases, 75 patients, 71 (59.2%) were between the ages of 26 and 40, 35 (29.2%) patients were aged between 16-25 years and the rest were 14 (11.7%) had age <40 years.(fig 1)

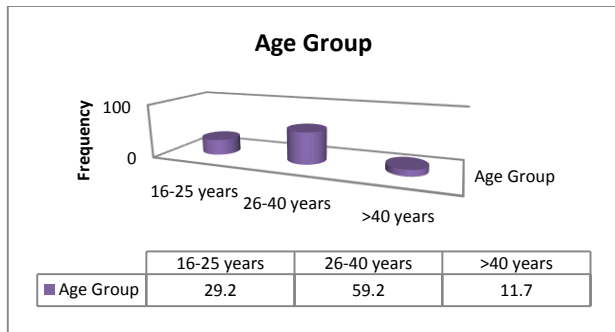


Figure 1: Age distribution of enrolled cases

The mean age of the patients was 26.34±7.51 years with mean BMI 23.07±9.44 kg/m². Most of the cases were 67 (55.8%) male and 53 (44.2%) were females. Majority of the patients had urban residency and had poor socio-economic status. (table 1)

Table 1: Details of enrolled cases

Variables	Frequency	Percentage
Mean age (years)	26.34±7.51	
Mean BMI (kg/m ²)	23.07±9.44	
Gender		
Male	67	55.8
Female	53	44.2
Education status		
Yes	73	60.8
No	47	39.2
Residential Area		
Urban	66	55
Rural	54	45
Poor eSocio-economic status		
Yes	80	66.7
No	40	33.3

Nasal obstruction was found among 53 (44.2%) patients, frequency of rhinorrhea was 33 (27.5%),mixed symptoms were found in 20 (16.7%) and remaining complications were headache and facial pain. (table 2)

Table 2: Types of symptoms among all cases

Complications	Frequency	Percentage
Nasal obstruction	53	44.2
Rhinorrhea	33	27.5
Mixed symptom	20	16.7
headache and facial pain	8	6.7
cosmetic reason	6	5

At final follow up prevalence of nasal adhesion was found in 9 (7.5%) and rest were 111 (92.5%) patients did not have nasal adhesion. (fig 2)

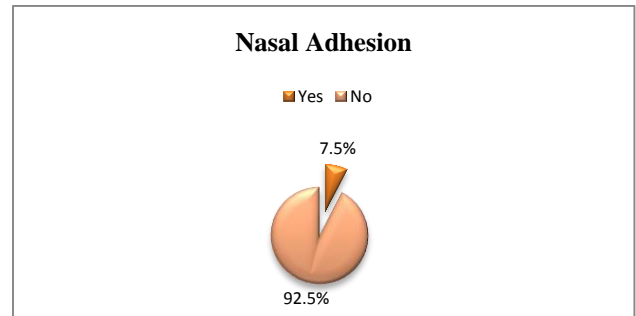


Figure 2: Septoplasty and frequency of nasal adhesion

DISCUSSION

For the treatment of symptomatic deviated nasal septum, otolaryngologists routinely perform septoplasty. In order to reduce the risk of problems, otolaryngologists routinely use several forms of nasal packing to pack both nasal canals during surgery. If the septal flap approximation is poor and haematomas or nasal adhesions occur, one option is to employ an intra-oral Septal Splint to ensure excellent approximation of septal flaps. [12,13]

In our study 120 patients with ages 16-50 years were included. Among 120 cases, 75 patients, 71 (59.2%) were between the ages of 26 and 40, 35 (29.2%) patients were aged between 16-25 years and the rest were 14 (11.7%) had age <40 years. The mean age of the patients was 26.34±7.51 years with mean BMI 23.07±9.44 kg/m². Most of the cases were 67 (55.8%) male and 53 (44.2%) were females. Majority of the patients had urban residency and had poor socio-economic status. These presented findings showed resemblance to the previous studies.[14, 15]

Nasal obstruction was found among 53 (44.2%) patients, frequency of rhinorrhea was 33 (27.5%),mixed symptoms were found in 20 (16.7%) and remaining complications were headache and facial pain.[16] X-ray films and suture are also used to create an intranasal splint, however soft silicone is the most often used material. Intranasal splitting was accomplished by using flexible plastic intravenous fluid bottles. According to our findings, only five of the 120 individuals studied experienced nasal adhesion. Split individuals had a much reduced risk of nasal adhesion than non-split persons, according to previous studies. [17,18] 106 patients with various intranasal procedures underwent surgery with the

nasal splint on one side, all adhesions occurring on that side, and more frequently, bilateral wall processes (8 percent split versus 26 percent non split), leading Campbell et al. to conclude the splint was justified on that side and the increasing morbidity was justified by bilateral wall processing procedures. [19] It has also been shown that in the short-term follow-up, increased postoperative pain may result in a considerable reduction in the rate of intranasal adhesion. [20]

In current study nasal adhesion was found in 9 (7.5%) and rest were 111 (92.5%) patients did not have nasal adhesion. Intranasal splints used in septal surgery have been demonstrated to dramatically minimise the production of postoperative nasal adhesions by 2.5 percent when compared to basic nasal packing, according to Veluswamy et al 2012.'s research (12.5 percent) [21]. Operative septal splinting has been shown by Cook and colleagues in the past. Anatomical data, such as where the septum was, if adhesions were present, how much pain was felt, and the airways' overall health, were gathered without any apparent benefit to the patient. [22]

Vanita Sarin et al [23] asserted that INS had a vital role in preventing intranasal adhesions, despite the fact that it plainly increases morbidity by causing discomfort, irritation, and crust development. An intranasal fracture should be used for surgical operations involving simultaneous manipulation of the nose and septic side walls, according to their conclusions. An adhesion rate of 3.1% in the non-splinted group was discovered by Kashif Mahmood and colleagues [24]. It is common to use an intranasal splint to alleviate the sticking sensation. An intranasal splint is not necessary for patients with extra comorbidities, since careful nasal toileting may achieve the same results. According to Schoenberg et al., who found a low risk of adhesions in the first postoperative week after surgery when intranasal splints were used, some authors found results that were contrary to ours, finding that there was a significant difference between splinted and non-splinted patients due to a high rate of adhesions when septoplasty was combined with lateral wall surgery (3.6 percent in splinted vs. 31.6 percent in non splinted). [25]

According to the description above, intranasal splines have contradicting facts. Studies show that adhesion after splinting is reduced, although there are a number of different methods that may be used to achieve this goal. The majority of studies point to double-wall intra-nasal splinting, however others have shown that single-wall splints are more dangerous.

CONCLUSION

According to the findings of this study, intranasal splints were an efficient and safe treatment for preventing nasal adhesion after septoplasty.

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