Prevention of Intra Nasal Adhesions by Using Intranasal Splints after Septoplasty

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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 and causing symptoms like nasal obstruction, chronic nasal congestion, sinusitis, repeated ear infections, headache or nose bleed.

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

Rhinologists all over the world have frequently been using intranasal splints to prevent intranasal adhesions. 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. 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.

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...
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 develop intranasal adhesions.

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

<table>
<thead>
<tr>
<th>Age(years)</th>
<th>n</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>33</td>
<td>36.66</td>
</tr>
<tr>
<td>26-30</td>
<td>37</td>
<td>41.11</td>
</tr>
<tr>
<td>31-35</td>
<td>8</td>
<td>8.88</td>
</tr>
<tr>
<td>36-40</td>
<td>12</td>
<td>13.33</td>
</tr>
<tr>
<td>Mean±SD</td>
<td>27.88 ± 5.06 Years</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Presenting symptoms

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>n</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasal obstruction</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>Rhinorrhea</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>Headache and facial pain</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>Cosmetic reason</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Mixed symptom</td>
<td>11</td>
<td>12.22</td>
</tr>
</tbody>
</table>

DISCUSSION

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

Intranasal splints made of soft silicone are most widely used though Intranasal splints made of x ray films and suture packing are also described. They 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. 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 procedures.

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 adhesions.

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