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INTRANASAL SPLINTS AND NASAL SEPTAL SURGERY

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ABSTRACT

Objectives: To compare the efficacy of transseptal suturing technique with conventional nasal splints in the classic septoplasty incision.

Material and Methods: This was a comparative study done in the department of ENT and Head and Neck Surgery Department of Khyber Teaching Hospital, Peshawar Pakistan, from January 2013 to June 2014. A total of 150 patients were included in this study. These patients were divided into two groups, Group A includes those patients in which no nasal splints were kept after nasal septal surgery and Group B includes patients in whome nasal septal splints were kept in. After taking proper history and performing clinical examination these patients were divided into two groups by convenience sampling technique. This data was recorded on preformed proforma. All the patients were followed up at 3rd, 10th and 30th day of postoperative period. The record of nasal adhesions and septal perforation was noticed and compared between two groups.

Results: Group A which comprised of Septal surgery without splints showed better results in the terms of postoperative septal perforations and intranasal adhesions as compared to Group B with intranasal splints after septal surgery.

Conclusion: The procedure of Nasal Septal surgery without splints was better in reducing postoperative complications although it was more time consuming.

Key Words: Septal deviation, nasal obstruction, Septoplasty, Septal Splints.

INTRODUCTION

Intranasal Slints are widely used after nasal septal surgery for prevention of intranasal adhesions and support of septal perforation. However they have been shown to cause significant discomfort to patients.[1] Various types of nasal packing are placed into the nasal passages after nasal septal surgeries in order to ensure that bilateral mucoperichondrial flaps are secured in place[2]. Securing the mucoperichondrial flaps is important to prevent complications such as bleeding or septal haematomas[3]. Placement of nasal packing into the nose between the nasal lateral wall and the septum also prevents potential synachiae. There is no consensus on how long the nasal splints can be kept in place without causing changes to the nasal structures[4]. Nasal Septal perforation as a post surgical complication is observed from the nasal splint pressure on the mucosa and tissue necrosis[5]. Approximately 0.7-1.4% of patients after septoplasty[5]. Nasal Septal perforation occurs due to respective mucosal damage, particularly.Such perforations may be caused by disrupted blood flow originating from the nasal splints pressure on the mucosa and tissue necrosis.[6] Biofilms are sessile communities of bacteria embeded in self produced extracellular polysaccharide matrix and are considered to be responsible for bacterial infection in humans. Topical surfactant use on silicone nasal splints may have preventive effect on biofilm formation.[7]

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MATERIAL AND METHODS

This study was conducted in ENT and Head and Neck Department of Khyber Teaching Hospital, Peshawar, Pakistan from January 2013 to June 2014. The study group comprised of 150 patients of either gender, the age range was from 16-50 years. These patients were divided into two groups of 75 patients each. Group A includes those patients in whome no intra nasal splints were kept after septal surgery, while group B included those patients in whome bilateral nasal splints were placed for 10 days in post operative period. The pre,operative and postoperative data was recorded on a predesigned proforma. All those patients who underwent nasal septal surgery without extenal nasal deformity were included in the study. Those patients in whome inferior turbinectomy, nasal polypectomy, approach to sphenoid, septoplasty for the purpose of

nasal graft and correction of nasal bones were done were excluded from the study. The data of postoperative period was recorded in terms of nasal adhesions and bleeding (Haematoma) was compared in both of the groups.

RESULTS

Out of 150 patients, 110 were male and 40 were females. The age range was from 16 to 50 years with a mean age of 33 years. In group A which comprised of septal surgery without intra nasal splints, 20 (26.66%) patients had blood clots in both the nostrils after 3 days, which were sucked out in operation theatre. All the patients of group A were advised to have a close follow up on first three postoperative days, as these patients belonged to the close vicinity of Khyber Teaching Hospital so they used to come for follow up on regular basis. In 70 (93.33%) of patients we kept an antibiotic ointment soaked packs in both the nostrils for 4 hours in postoperative period, which were removed in the ward. In 5 (6.66%) of patients the intranasal packs were kept for 8 hours to reduce bleeding.

In group A, after the removal of intranasal packs, frequent suction clearance of both of the nostrils were done along with xylometazoline and liquid parrafin drops were instilled regularly to reduce crust formations in the nose. In the rest of the 75 patients of group B who underwent nasal septal surgery, the plastic intranasal splints, which were made from the sterilized infusion sets were kept for 10 days and stitched together in vestibule with 2/0 silk. Along the lateral side od splints the intranasal dressings were done for 24-48 hours to prevent septal haematoma formation. In grop B, 10 (13.33%) patients developed bilateral nasal adhesions, while in 5 (6.66%) patients the adhesions were found in one of the nostrils, in 2 (2,66%) of patients the septal haematoma was formed on 4th postoperative day ,which was drained under local anesthesia and again the intranasal dressings were done for 48 hours,otherwise the recovery was uneventful.

DISCUSSION

In the last 20 years there have been six randomized control trials comparing outcomes of septal surgery with and without the use of intranasal splints.[8] In 3 similar trials of 100 patients undergoing septoplasty or combined septal and inferior turbinate surgery.[9,10] patients were randomoized either to have splints inserted at the end of the surgery or to have no splints. All patients had nasal packing removed on posoperative day 1 and splints removed at 1 week. In our study of group B we removed the nasal packing from 24-36 hours and splints were removed on 10th post operative day which are nearly similar to the other studies conducted.[11,12] In a study done in Leeds UK, the author used trimmed silicone Medasil splints and found that septal position and airway patency at 6 weeks after surgery were improved to an equal degree between groups.[13] In group A of our patients the patency of both the nostrils were improve to 90 percent at he end of first week and if compared to group B the patency of both groups attainted 100 percent after 4 weeks, this is mainly because of frequent suction clearence of the nose. There was also no significance difference in the rate of intranasal adhesions at 6 weeks, pain scores over the first postoperative week were higher in the splint group. Winkler C et al[13] used trimmed sialistic splints,and found that all patients experienced a similar degree of pain within in the first 48 hours but at 1 week the mean pain score was higher in the splints group, in our patients the splints were made up of plastic sheet of disposeable infusion bottle which were also soft so 90% of Group B suffered pain because of splints upto 72 hours and after that there was no pain. At 6 weeks 2.8% of the splint group had intranasal adhesions compared to 7.7% of non splint group but this difference was not significant. Sanderson AR et al[15] used Exmour sialistic standard sized splints and found that the splint group had greater pain. The highest incidence of intranasal adhesions occured in patients who had surgery concurrently on both the septum and the lateral nasal wall.[16,17] of these, 31.5% of the non splint group had adhesions at 1 week compared to 4, 5% in the splint group. At 3 months, both groups only had one patient each with adhesions, with this low incidence attributed to the nasal toilet completed at the 1 week visit. Notrably these authors include division of adhesions under topical anesthesia as part of routine postoperative nasal toilet. Several randomized trials[18,19,20] of septoplasty patients to have either insertion of and antibiotic meshes or placement of transseptal horizontal mattress suture. Antibiotic meshes were removed after 48 hours, and splints were removed at 1 week[21]. Differences in the rates of mucosal adhesions between groups were found to be statistically insignificant. Postoperative pain on a 10 point VAS was found to be higher in the packing group.

Manstied CJ[21] conducted a study of 40 patients under-going septoplasty alone. A 0.03-inch Silastic splint (Bio Plexus, Ventura, CA), trimmed to avoid touching either the nasal roof or floor, was inserted on one side only, with the contra lateral side serving as a control. All patients had bilateral nasal packing removed on postoperative day 1 and the unilateral splint removed at 1 week. Pain and mucosal status at 1 and 2 weeks were compared between the splint side and the control side. Mucosal status was graded by one of the authors by a predetermined scale(1 =no erosion, 2 =

focal erosion, 3 = multiple erosions and 4 =synechia between septum and turbinate). At 1 week, the nasal discomfort score was not significantly different on the splint and control sides. Average mucosal status was found to be better on the splint side compared to the control side (1.5 vs 2.5, P < .001). By 2 weeks the splint side had a lower discomfort score (2.7 vs 3.8, P <.001) and better mucosal status (1.5 vs 1.9 P = .013). In our study the intranasal splints were designed on the table to get fitted in both the nostrils and the nasal packing were removed after 24 hours, pain and adhesions were compared at week 1 the pain score was more in the splint group than without splint group.

In different randomized studies[23,24,25] of septoplasty patients to one group given Merocel (Mystic, CT) nasal packing, and a second group was given silicone splints with integral airway (Breathe-Easy; Diversified Biotech, Dedham, MA) to compare postoperative eustachian tube function. Both packs and splints were removed after 48 hours, at which point tympanometric middle ear pressures were found to be pathologicaly decreased in 74% of the packing group compared to 21% of the splint group[26]. Altogether 22% of the packing group and 7% of the splint group had subjective aural fullness, and this completely resolved after packs and splints were removed[27]. In the RCTs that report rates of other postoperative complications[28,29] the rate of septal perforation was higher in the splint group (2.2%-3.5%) compared to the no-splint group (0%-2.1%), but this difference did not reach significance. None of the studies reported septal hematomas in either group. In our study septal haematoma was formed in 2 patients which was successfully drained under local anesthesia.

Conventional septal splints have been shown in multiple large RCTs to cause significantly increased postoperative pain without sufficient evidence of decreasing rates of intranasal adhesions or other clinically significant complications. However, one recent smaller RCT shows that a new thinner splint may result in both improved mucosal status and decreased postoperative discomfort.[30]

CONCLUSION

Nasal septal surgery without intranasal splints with short term intranasal packing is more acceptable to the patients. This technique needs trained surgeon in such surgeries.

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