Does Post Septoplasty Nasal Packing Reduce Complications?

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Abstract- The main issues in nasal surgery are to stabilize the nose in the good position after surgery and preserve the cartilages and bones in the favorable situation and reduce the risk of deviation recurrence. Also it is necessary to avoid the synechia formation, nasal valve narrowing, hematoma and bleeding. Due to the above mentioned problems and in order to solve and minimize them nasal packing, nasal splint and nasal mold have been advised. Patients for whom the nasal packing used may faced to some problems like naso-pulmonary reflex, intractable pain, sleep disorder, post operation infection and very dangerous complication like toxic shock syndrome. We have two groups of patients and three surgeons (one of the surgeons used post operative nasal packing in his patients and the two others surgeons did not).Complications and morbidities were compared in these two groups. Comparing the two groups showed that the rate of complication and morbidities between these two groups were same and the differences were not valuable, except the pain and discomfort post operatively and at the time of its removal. Nasal packing has several risks for the patients while its effects are not studied. Septoplasty can be safely performed without postoperative nasal packing. Nasal packing had no main findings that compensated its usage. Septal suture is one of the procedures that can be used as alternative method to nasal packing. Therefore the nasal packing after septoplasty should be reserved for the patients with increased risk of bleeding.

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Introduction

Septoplasty alone or in combination with rhinoplasty is one of the most common nasal surgeries, performed by otorhinolaryngologists.
It was thought that nasal packing after septoplasty could reduce post operative complications; many surgeons still believe it to be true.
The most frequent problem that septoplasty patients worry about, is the pain and discomfort that they have to go through during nasal packing ant its removal(1). Some studies advocated that nasal packing can prevent hemorrhage (2-3) or hematoma formation (4) during nasal surgery. These studies did not have large sample size to support their results and conclusions (5).

Von Schoenberg and colleagues studied 95 patients undergoing routine nasal surgery and reported that pain was significantly higher in the group that were packed after surgery; and the removal of packing proved to be the most painful event in the postoperative period. They found a higher rate of complications (including hemorrhage, vestibulitis and septal perforation) in the packed group, though it is not clear if this difference reached statistical significance (6). Other studies reported septal surgery without nasal packing to be safe. Bajaj and colleagues reported a series of 78 patients who underwent septoplasty with no postoperative packing; quilting sutures were used in just over a quarter of cases. They identified a 7.7% rate of postoperative hemorrhage; half of them (3.8%) required packing to control the bleeding (7).

Few studies suggested that nasal packing is not necessary after nasal septoplasty as it causes discomfort when it is being removed (6, 8-9). This short period of discomfort during nasal pack removal stays clearly in patients mind (1). Wrapping the packs with gelfoma (10) blocking the sphenoplatine ganglion (11) using topical anesthesia for removal (12) keeping the pack for a

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shorter time (13) are some procedures suggested to reduce the pain.

Our review of the literature demonstrated that using nasal packs after septoplasty does not provide clear advantages in improving nasal airway, nor does it appear to prevent postoperative complications. The present randomized clinical trial was designed to assess the advantages and disadvantages of nasal packing in patients undergoing nasal septoplasty in two educational hospitals (Imam Khomeini and Loghman) and private clinics.

Patients and Methods

The present clinical trial was carried out on patients undergoing nasal septoplasty in two educational hospitals (Imam Khomeini and Loghman) and private clinics, between September 2003 and October 2009. Patients were divided into two groups, based on using nasal packing after septoplasty (group 1) or not (group 2). We matched these two groups for age and gender. Our exclusion criteria was as follows: patients more than 65 years old, patients suffering from other medical problems (such as diabetes, heart problems, hypertension, any kind of vasculitis or granulomatous diseases, blood dyscrasia), history of nasal polyposis, drug abuse and nasal sniffers, history of overt nasal allergy, using hemodiluting drugs like aspirin, and patients with a history of previous septal and nasal turbinate surgery. We also excluded patients with any characteristic that might enforce us to put the patient in one specific study group preoperatively or during operation. Routine preoperative laboratory tests were taken and a written informed consent was obtained from each patient. The operation was indicated in all patients and septoplasty was performed by a standard technique. The nose was prepared with topical decongestant spray and 2% lidocaine with 1: 100,000 adrenaline infiltrations. All operations were carried out under general anesthesia and the airways were kept open with laryngeal intubation in most of the cases. Septoplasty was performed by hemi transfixation incision (various types) in 138 cases; and in seven patients by external approach. All the group 1 patients had nasal packing by the insertion of tetracycline-impregnated gauze that was removed one or two days after operation; and as a replacement, all the patients in group 2 had trans-septal suture by vicryl No 5 in the classic manner.

They were discharged if they did not have active bleeding, were fully conscious, able to eat and drink, and the pain was well-controlled. Simple analgesics were prescribed postoperatively for pain control. One hundred and one patients went home five to six hours after operation (OPD) and 44 cases were admitted for the night and released the day after surgery. The first post operation visit was the day after surgery, and after that, one week, two weeks, one month, three months and one year post operatively.

Statistical note

Data was analyzed using SPSS version 16. Quantitative variables were presented by central indices (Mean and Standard error of mean) and qualitative variables were presented by frequency tables (frequency and percentages). We used Independent sample T-tests to compare quantities of variables between two groups and Chi-square test to detect significant association between qualitative variables. P-value of 0.05 or less was considered statistical significant.

Results

One hundred forty five (145) patients participated in this trial. Of these patients, 84 were women and 61 were men. Their ages ranged between 15 to 63 years. All patients had septoplasty alone or combined with rhinoplasty. The follow up time was between at least 3 months to 32 months. The patients were randomly divided into two groups, those who used nasal packing after septopasty (group 1) (n=77) and the others who did not (group 2) (n=68). There are 45 women and 32 men in group 1 and 29 men and 39 women in group 2.

Comparison between the findings of follow up visitations in our participants

In the group with nasal packing (group 1), pain, discomfort, nasal obstruction, nasal breathing, snoring and sleep apnea were the major problems for the patients frequently complained about them especially pain at the time of pack removal. Septal hematoma was reported in one case. None of our patients had toxic shock syndrome or dangerous fungal infection. Only one patient had postoperative hemorrhage, therefore needed nasal packing that was removed the day after. Synechia and adhesion band in one case that released simply and radiologic film sheet inserted intranasal and fixed. The sheet preserved for 2 weeks. Septal deviation was seen in nine cases. It led to breathing problems in three patients that revision septoplasty performed.

Table. Comparison between the complications of patients undergoing nasal septoplasty, with or without nasal packing

Trial groups	With nasal packing	Without nasal packing
Variables	Number	Number
postoperative hemorrhage	1	2
Sever pain feeling	77	2*
toxic shock syndrome	-	-
septal hematoma	1	1
dangerous fungal infection	-	-
Septaldeviation/septoplasty again	9/3	11/4*
Septal perforation	2	1
Synechia and adhesion band	1	1

* No significant (Chi-square test $P>0.05$)

Two cases developed septal perforations that were repaired (the first one by turbinate flap and the second one by advanced nasal mucosal flap with cartilage and temporal fascia insertion).

In our follow up visit on patients without nasal packing (group 2) they had no toxic shock syndrome, dangerous fungal infection or septal abscess.

Nasal perforation (in one case that was repaired by turbinate flap), septal hematoma (in one case) were reported. Two patients had postoperative hemorrhage (six and 72 hours after operation) and needed nasal packing that was removed the day after.

Synechia and adhesion band in one case that released simply and silicone sheet inserted intranasal and fixed. The sheet preserved for 2 weeks. Septal deviation was seen in 11 cases; and led to breathing problems in four patients who underwent another septoplasty. Pain, discomfort, nasal obstruction, nasal breathing, snoring and sleep apnea were not major problems in these patients. All of the patients were very stressed about packing removal; but they were relieved when we told them there is no pack to be removed and it made them very happy.

Discussion

The results of our trial on 145 patients who underwent septoplasty, and were followed in our postoperative visitations, showed no significant differences between two trial groups except in the feeling of pain and discomfort(Chi-square test $P>0.05$).

On the other hand, compared to the group without nasal packing, patients who had nasal packing after their septoplasty, received no additional advantages such as less pain, septal hemorrhage or perforation. According to some studies hemorrhage (2-3)and septal hematoma (4) might be prevented by nasal packing , but these results need to be confirmed by studies with larger samples(5).

Most surgeons use nasal packing in their procedures. They have a variety of reasons for doing so; including better homeostasis, septal hematoma prevention, increased mucoperichondrial flap apposition, dead space closure and preventing the displacement of replaced cartilage (14). Some studies reported that nasal packing leads to cardiovascular changes, continued hemorrhage, nasal injury, hypoxia, foreign body reaction or infection. Patients' discomfort and need for hospitalization were the main disadvantages of nasal packing (14). Nasal packing is considered as the main cause of postoperative pain (1). Most patients believe that the removal of packs is the most painful event (6-7). Shaw *et al.* studied the effects of the most commonly used nasal packing materials (ribbon gauze) on the nasal mucosa of patients undergoing nasal surgery. He showed that nasal packing can cause significant mucosal injury with ciliary movement problems (15).

Few surgeons believed that we must not use nasal packing as it causes discomfort and distress at the time of removal (6, 8-9). They believe that although it is a short period of discomfort, patients who experienced this painful event could not forget it (1). Some procedures such as wrapping the packs with gel foam (10), blocking the sphenopalatine ganglion (11), moistening packs with topical local anesthetics (12, 16), keeping the packs in the nose for shorter periods of time (13) and using pre-emptive analgesics (1) were suggested to decrease the pain.

Suturing the septum in septoplasty is suggested as a safe procedure that can replace nasal packing, so patients would not have to go through the painful event of packing removal (17). Nasal packing and suturing were compared in rabbits and they showed no significant differences (18). No significant difference in hemorrhage, crusting or mucosal atrophy was detected

in atrial on 50 patients(8). Septal suturing was also found as a safe alternative for packing in a study on 169 patients(14). In conclusions, septoplasty can be safely performed without postoperative nasal packing. Nasal packing had no main advantages compared with trans-septal suturing. Septal suturing is one of the procedures that can be used as an alternative method to nasal packing.

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