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ORIGINAL ARTICLE

Effect of Bilateral Nasal Packing on Systemic Blood Pressure in Patients Treated with Septoplasty

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ABSTRACT

Aim: The primary aim of this research was to assess the impact of bilateral nasal packing on systolic blood pressure in individuals undergoing septoplasty.

Study Design: Retrospective study.

Place and Duration: This study was conducted at Hospital Dow International Medical College, Dow University of Health Sciences Karachi and Shahida Islam Medical College, Lodhran during in the period from March, 2022 to August, 2022.

Methods:152 patients who had a clinically determined nasal septoplasty were included in this study. Patients in this ranged in age from 18 to 50. The patients were randomly split in two groups. Seventy-six patients were assigned to Group I, where no nasal packing was utilized, and Group II, where conventional anterior nasal packing was applied. One may say that there was a 50/50 split between the two groups. Before to and throughout septoplasty, all patients underwent round-the-clock ambulatory blood pressure monitoring. Statistical analysis was performed on all data using SPSS 24.

Results: 90 (59.2%) of the 152 patients were male, and 62 (40.8%) of the patients were female. The patients which were under the age of 30 are 59(38.8 percent) of the total patients, 55 (36.2 percent) were between the ages of 31 and 40, and 38 (25 percent) were above the age of 40.50% of the patients are comprised of rural locale. Study participants in Group II were found to have higher mean blood pressure (p-Value 0.05) following septoplasty therapy than those in Group I (P-Value >0.05). Group II patients had bleeding, vestibulitis, and septal perforations as a result of their nasal packing procedure.

Conclusion: The study determined that bilateral nasal packing was linked with the preferment in either systolic or diastolic blood pressure in individuals who had septoplasty treatment. There is no statistical significance change showed up with the patients who did not get nasal packing from the rest of the group.

Keywords: Septoplasty, Bilateral Nasal Packing, systemic blood pressure

INTRODUCTION

A significant number of surgeons make considerable use of packs in nasal surgeries to reduce the danger of postoperative hematoma and to control bleeding. Nasal packing is not without its downsides, the most notable of which being the patient's discomfort and the requirement that they spend the night in the hospital. The urge to breathe via the mouth rather than the nose is yet another severe negative effect of the medication. According to a number of studies that were conducted in the past, hypoventilation, hypoxemia, hypercarbia, and acidosis have all been found to be connected to serious disorders (such as obstructive sleep apnea) that result in permanent upper airway blockage. In some cases, they might trigger pulmonary vasoconstriction, which can result in pulmonary hypertension and heart failure. Moreover, they can cause vagal bradycardias and ectopic beats, which can lead to sudden mortality. [1]

In spite of the fact that it is mostly risk-free, it has the potential to bring about some extremely disastrous outcomes, including deaths.[2] It is believed that as many as 60 percent of people will have epistaxis at some point in their lives because the condition is so prevalent. Around six percent of these individuals will seek medical assistance for their epistaxis, and approximately one in every thousand will require hospitalisation as a result. [3] Children less than 10 years old make up the majority of the casualties. Epistaxis is more common in the winter and in northern latitudes because lower humidity contributes to the drying out of the nasal mucosa, which in turn contributes to the increased incidence of epistaxis.[4] Epistaxis can be caused by a variety of factors, including nasal trauma, mucosal collapse as a result of infiltration by a benign (Angiofibroma), malignant (Glandular Neoplasm), or granulomatous sickness, and granulomatous illness. [5,6] At the Kiesselbach plexus, in the front of the nose is where 90 percent of cases of epistaxis start. The presence of unilateral, prolonged, non-massive bleeding is one of the symptoms of anterior epistaxis. Yet, 10% of all instances of epistaxis are located near the back of the nose, and these are the ones that produce early, strong, bilateral bleeding. Little bleeding could be stopped with nothing more than keeping the patient's head raised, using some cold packs, and applying light pressure. In severe situations of bleeding, packing the wound may be required. It is believed that a raised heart rate and blood pressure are caused by a number of reasons, some of which include increased airway resistance, hypoxia, and hypercapnia [6].

Numerous studies (Ogretmenoglu et al., 2002; Fan et al., 2011; Gupta et al., 2011) The pressure that is placed on the nasal mucosa and neural tissue has been the focus of a number of studies. As a result of this, it appears that stimulation [7,18] is the primary reason for the cardiovascular anomalies; another research has connected comparable modifications to anaesthetic issues. Bayar and colleagues presented their findings in a paper that was published in 2008. [8,9]

In light of the widespread application of nasal packing as a therapeutic treatment and the absence of conclusive data on the effect that it has on cardiovascular health, it is abundantly clear that more study is required.[10] The purpose of this study was to examine whether or not septoplasty patients who received bilateral nasal packing had an increase in systolic blood pressure during the procedure.

MATERIAL AND METHODS

This retrospective study was conducted at Hospital Dow International Medical College, Dow University of Health Sciences Karachi and Shahida Islam Medical College, Lodhran during in the period from March, 2022 to August, 2022. This study comprised 152 patients of both sexes who were diagnosed with nasal septal deviation and subsequently underwent septoplasty. Participants in this study ranged in age from 18 to 48. Each patient's complete medical history, including age, gender, and residency, was collected after gaining informed consent (where applicable).

Patients were randomly assigned to either Group I (no nasal packing) or Group II (standard anterior nasal packing) in this study.

Before and after septoplasty, all patients in both groups were treated to a full 24 hours of ambulatory blood pressure monitoring. Nasal packing has been linked to several reported problems.

Each piece of statistical information was analyzed using SPSS 24.0, a computer application.

RESULTS

90 (59.2%) of the 152 patients were male, and 62 (40.8%) of the patients were female. A total of 59 (38.8%) patients were age b/w 18-30, 55 (36.2%) were between the ages of 31 and 40, and 38 (25%) were above the age of 40. Rural residents comprised 50% of the patients.(table 1)

Table-1: Characteristics of enrolled cases

Variables	Frequency	Percentage
Gender		
Male	90	59.2
Female	62	40.8
Age (years)		
18-30	59	38.8
31-40	55	36.2
>40	38	25
Residence		
Rural	76	50
Urban	76	50

Patients in Group II saw an increase in mean systolic and diastolic blood pressure following septoplasty therapy (p-Value 0.05), whereas there was no statistically significant change detected among those in Group I (p-Value 0.015). (table 2)

Table 2: Determination of BP among both groups before and after surgery

Variables	Group I	Group II
Before Surgery		
Mean Systolic BP	114.7	115.19
Mean Diastolic BP	72.1	71.16
After Surgery		
Mean Systolic BP	118.13	134.21
Mean Diastolic BP	77.7	94.6

Group II patients had bleeding, vestibulitis, and septal perforations as a result of their nasal packing procedure while there were no any complications found in group I.(table 3)

Table 3: Association of post-operative complications among both groups

Complications	Group I (76)	Group II (76)
bleeding	0	9 (11.8%)
vestibulitis	0	5 (6.6%)
septal perforations	0	4 (5.3%)

DISCUSSION

In ENT clinics across the nation, endoscopic therapy for epistaxis has replaced nasal packing. A bleeding vascular embolization and angiogram may be necessary. Nasal packing is still the most affordable and popular way to treat epistaxis due to the lack of resources. It is unknown how long nasal packing lasts, according to the research. Even while it affects the patient's comfort and how difficult it is to pack their noses, it has broad-ranging effects. When there is nasal packing, both patient pain and dry throat are made worse. Constant stimulation of the mucosal glands and the ensuing impairment of normal mucociliary clearance are the root causes of secretory stasis, mucosal irritability, and headache. Tears drip when there is a blockage in the lacrimal canal (epiphora). The presence of nasal packing is the reason of the constant stimulation of the lacrimal apparatus leading to excessive lacrimation. [11,12]

In current study 152 patients were presented. 90 (59.2%) of the 152 patients were male, and 62 (40.8%) of the patients were female. The patients which were under the age of 30 are 59(38.8 percent) of the total patients, 55 (36.2 percent) were between the ages of 31 and 40, and 38 (25 percent) were above the age of 40.50% of the patients are comprised of rural locale. Results were in line with the previous studies. [13,14]

While there was no discernible difference in Group I (nasal packing-free) participants, those in Group II (nasal packing) were found to have higher mean systolic and diastolic blood pressure. These results are in line with recent research on the effects of bilateral nasal packing following septoplasty, in which it was discovered that anterior nasal packing patients had greater mean systolic and diastolic blood pressure than those who had not received it. [15,16]

In their study on septoplasty complications, Wang et al.[17] compared nasal packing versus suturing. The findings of this study were consistent with those of this one. More people in the packing group complained of nasal pain, headaches, difficulty swallowing, and disturbed sleep. In contrast to the suture group, however, there was no change in the incidence of epiphora.

The risks associated with nasal packing were also investigated by Gupta et al.[18]. Complications from nasal packing were characterized by indicators such as elevated blood pressure, decreased middle ear pressure, disturbed sleep, and varying oxygen saturation. In order to lessen the severity of these side effects, they recommended using an airway with nasal packing.

In conclusion, according to previous studies nasal packing considerably increased the nocturnal BP of otherwise healthy young people, and we hypothesise that this rise may have an even more profound effect on individuals with cardiovascular disorders (i.e.hypertensive patients even if their BP is under control by medications). Several studies [19,20] show that nasal packing and posterior nasal tamponade cause abrupt fatalities in the elderly at night. Complications from nasal packing were identified in Group II patients but not in Group I, including haemorrhage, vestibulitis, and septal perforations.

This study's central finding that prolonged nasal packing increases patient suffering with no discernible effect on recurrence of bleeding is supported by the findings of Kazkayasi et al.[21], who found that nasal packing caused more facial pain and headache as compared to suturing after septal surgery.

CONCLUSION

ENT clinics adopt nasal packing because it's simple. This study indicated that nasal packing should not be done on those with cardiovascular or pulmonary problems. Septoplasty patients' systolic and diastolic blood pressure increased with bilateral nasal packing. Our investigation demonstrated no substantial difference in patients without nasal packing.

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