Original Article

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

Bilateral Nasal Packing for BP with Septoplasty

Sadaf Raffat Mustafa[1], Wajih-ud-Din Shinwari[2], Fatima Usman[3], Amir Akbar[4], Muhammad Jamil[5] and Muhammad Aslam Khan[1]

ABSTRACT

Objective: To find the Effect of bilateral nasal packing on systemic blood pressure in patients treated with septoplasty.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at the Department of ENT, Hitec Institute of Medical Sciences Taxila Cantt from 1st July 2021 to 30th June 2022.

Materials and Methods: One hundred patients were enrolled and divided into two groups depending upon the opted procedure they underwent. Fifity cases were enrolled in Group I where no nasal package was inserted while in other 50 patients from Group II conventional-anterior nasal packaging was introduced. All patients were kept on twenty four hours ambulatory monitotring of blood pressure pre septoplasty and post septoplasty on day two. A complete dempgraphic, clinical details of each patient were documented on a well structured quationnire.

Results: Most of the patients were male (54%) and 44% of the study participants were females. Total of 42% of the patients were in the age group of 20-30years. Fifty-five percent of male participants and 44% of female underwent nasal packing. Significant difference was observed in blood pressure with nasal packaging. Blood pressure was 118/75 before surgery and it was 130/90 after surgery.

Conclusion: Systolic and diastolic blood pressure was different before and after surgery with nasal packing.

Key Words: Nasal congestion, Obstruction, Well-being, Hypoxemia

Citation of article: Mustafa SR, Shinwari WD, Usman F, Akbar A, Jamil M, Khan MA. Effect of Bilateral Nasal Packing on Systematic Blood Pressure in Patients Treated with Septoplasty. Med Forum 2022;33(12):105-108.

INTRODUCTION

Nasal airway blockage and congestion is one of the main problem which faced commonly by otorhinolaryngologists. Besides affecting financial and physical problem, it also poses serious detrimental challenge to the well-being of the person. Nose performs various important functions for human body including warming, air filtration and humidification.[1-4]

[1.] Department of ENT, Hitec Institute of Medical Sciences, Taxila Cantt.
[2.] Department of ENT, Frontier Medical College, Abbottabad.
[3.] Department of ENT, Akhtar Saeed Medical College, Lahore.
[4.] Department of ENT, Rawal Institute of Health Sciences, Islamabad.
[5.] Department of ENT, Fazaya Medical College, Islamabad/ENT Surgeon KRL Hospital, Islamabad.

Correspondence: Dr. Sadaf Raffat Mustafa, Associate Professor of ENT, Hitec Institute of Medical Sciences Taxila Cantt.
Contact No: 0332-5105558
Email: drsadafrafat@yahoo.com

Received: August, 2022
Accepted: October, 2022
Printed: December, 2022

Nasal airway blockage is observed in more than half of the patients but this situation is more frequently observe in pathological situations.[5]

Each side of nose show different nasal obstruction due to difference in nasal mucosa and this is becoming more obvious with the passage of time. Patient naturally shifts to oral breathing due to nasal blockage that in return alters arterial blood gases and respiratory mechanics.[6-8]

The unilateral nasal blockage is more commonly experienced by the patients and also increase the total airway resistance. Respiratory functions appeared to be altered in majority of the cases and hypoxemic state occurred in patients. Nasal packing after nasal surgery is considered as a standard protocol of the treatment. Studies also highlighted that, hypoxemic state also experienced in patients after nasal packing.[9-11] Certain methods have been employed including electric cautery, silver nitrate cautery and thermal cautery but did not prove successful results.

Nasal packing requires various treatment protocol that needs to be effectively performed during the procedure. This technique requires ribbon gauze with decongestant and anesthesia. This technique also needs a focused light source for nasal dressing and nasal speculum. Ceiling and floor also needs to be effectively pressed against each other. Few sides are also reported with

nasal packing such as neurogenic syncope, lacrimation from the eyes, necrosis, headache and decrease drainage from nasal ducts. Long term use of nasal packing also sometime leads to an infection especially if it kept consecutively for more than 48 hours. In present study, patients undergone for septoplasty were studied to find their effect on systolic and diastolic blood pressure. This study also helps to find the frequency of intra-nasal packing complications.

MATERIALS AND METHODS

This prospective study conducted at Department of ENT, Hitec Institute of Medical Sciences Taxila Cantt from 1st July 2021 to 30th June 2022 and 100 patients were included. The inclusion criteria was based on the fact that nasl asputum was conducted in them in addition to the septoplasty post their clinical evaluation. These patients sample size was generated through WHO sample size calculation using 80% power of test and 95% confidence of interval. The patients were further divided into two groups depending upon the opted procedure they underwen. Fifity cases were enrolled in Group I where no nasal package was inserted while in other 50 patients from Group II conventional-anterior nasal packaging was introduced. All patients were kept on twenty four hours ambulatory monitotring of blood pressure pre septoplasty and post septoplasty on day two. A complete dempgraphic, clinical details of each patient were documented on a well structured quationnire. Data was analysed using SPSS verion 26.0 inform of frequecnies and percentages. Chi sqaure analysis tool was applied with a p value <0.05 taken as significant.

RESULTS

Most of the patients were male (54%) and 44% of the participants were females. Total of 42% of the patients were in the age group of 20-30years followed by 39% and 19% in 31-40 and >40years age group respectively. The rural patients in this study group were 56% (Table 1).

More number of male participants were under-went nasal packing. Fifty-five percent of male participants and 44% of female underwent nasal packing (Table 2).

No significant difference was observed in blood pressure without nasal packaging. Systolic and diastolic blood pressure was almost same even before and after surgery (Table 3). Significant difference was observed in blood pressure with nasal packaging. Systolic and diastolic blood pressure was different before and after surgery. Blood pressure was 118/75 before surgery and it was 130/90 after surgery (Table 4).

Certain complications were also observed in patients with nasal packaging after surgery. High incidence of hemorrhage was observed in patients followed by septal perforations and vestibulitis (Fig. 1).

Table No.1: Demographical detail of patients (n=100)

Variable	No.	%
Gender		
Males	56	56.0
Females	44	44.0
Age (years)		
20-30	42	42.0
31-40	39	39.0
>40	19	19.0
Residency		
Rural	56	56.0
Urban	44	44.0

Table No.2: Groups and gender-wise distribution of patients (n=100)

Gender	Nasal Packing (n=50)	Without Nasal Packing (n=50)
Males	28 (55.56%)	28 (55.56%)
Females	22 (44.44 %)	22 (44.44 %)

Table No.3: Comparison of before and after surgery results of blood pressure without nasal packaging (n=50)

Characteristics	Before Surgery	After septoplasty 2nd day	P-Value
Mean systolic BP	118.66	118.76	>0.05
Mean diastolic BP	75	75.1	>0.05

Table No.4: Comparison of before and after surgery results of blood pressure with nasal packaging (n=50)

Characteristics	Before Surgery	After septoplasty 2nd day	P-Value
Mean systolic BP	118.96	130.16	>0.05
Mean diastolic BP	75	90.2	>0.05

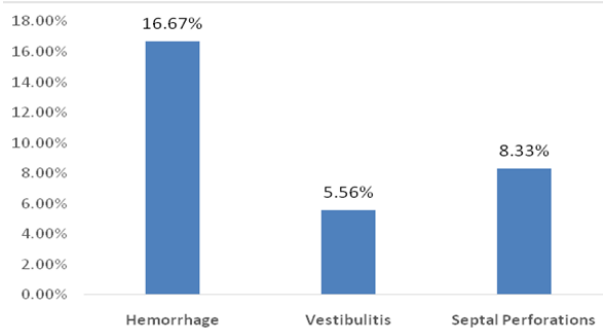

Figure No. 1: Prevalence of complications associated to nasal packaging

DISCUSSION

Nasal airway blockage is a common problem faced by the patients and more frequently referred in ENT clinics. Various treatment methods have been designed for treating nasal airway blockage. It not only alters the normal functions of breathing but also pose serious challenge to the functions of nose including air filtration and humidification of air. Endoscopic therapies for nasal airway treatment have widely been accepted worldwide. Nasal packing become the most cost-effective and reliable source for treating epistaxis. Complications and side-effects are also associated with the nasal packing method such as lacrimal canal blockage, excessive lacrimation and mucociliary disruption. Present study was designed to determine the difference in systolic and diastolic blood pressure among patients who underwent for septoplasty.[12-14]

In present study, majority of the study participants were males and they were in the age group of 21-30 years. Few number of patients were also present in >40 years' age group. Result of present study was comparable with already available data.[15,16] Patients of nasal packing group had elevated systolic and diastolic blood pressure and considerable difference was observed before and after surgery with nasal packing. Other studies also tried to establish the relation and difference in blood pressure values in septoplasty patients with nasal packing. Similar results were observed in those studies.[17,18]

Side effects and complications were also reported in previous literature. Study conducted by Gupta showed that, sleep problems, elevated blood pressure and drop in oxygen saturation were more frequently associated with nasal packing.[11] Nasal discomfort, sleep disturbance and dysphagia were reported by another study.[19] In present study, hemorrhage was reported as a main complication in 16% of the patients followed by septal perforations and vestibulitis, also showed more pain and suffering among patients with nasal packing.[20-22]

CONCLUSION

Nasal packing is a good approach for nasal blockage treatment and it's prevalent in ENT settings. Present study suggested that, this procedure shouldn't be the first choice of ENT for cardiac patients. Systolic and diastolic blood pressure was also different before and after surgery with nasal packing.

Author's Contribution:

Concept & Design of Study:	Sadaf Raffat Mustafa
Drafting:	Wajih-ud-Din Shinwari, Fatima Usman
Data Analysis:	Amir Akbar, Muhammad Jamil, Muhammad Aslam Khan
Revisiting Critically:	Sadaf Raffat Mustafa Wajih-ud-Din Shinwari
Final Approval of version:	Sadaf Raffat Mustafa

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Stewart M, Ferguson BJ, Fromer L. Epidemiology and burden of nasal congestion. Int J Gen Med 2010;3:37.
2. Chandra RK, Patadia MO, Raviv J. Diagnosis of nasal airway obstruction. Vol. 42, Otolaryngologic Clinics of North America. Elsevier; 2009.p.207-25.
3. Geurkink N. Nasal anatomy, physiology, and function. J Allergy Clin Immunol 1983;72(2): 123-8.
4. Ferris BG, Mead J, Opie LH. Partitioning of respiratory flow resistance in man. J Appl Physiol 2021; 19:653-8.
5. Hasegawa M, Kern EB. The human nasal cycle. Mayo Clin Proc 2021;52(1):28-34.
6. Eccles R. A role for the nasal cycle in respiratory defence. Eur Respir J 1996;9(2).
7. Passàli D, Tatti P, Toraldo M, De Benedetto M, Peverini F, Caruso G, et al. OSAS and metabolic diseases: Round Table, 99th SIO National Congress, Bari 2012. Acta Otorhinolaryngol Ital 2014;34(3):158.
8. Fitzpatrick MF, McLean H, Urton AM, Tan A, O'Donnell D, Driver HS. Effect of nasal or oral breathing route on upper airway resistance during sleep. Eur Respir J 2003;22(5):827-32.
9. Bista M. Effects of bilateral nasal packing on oxygen saturation and blood pressure. J Nepal Med Assoc 2017;56(208):442-6.
10. Yousof A, Awada O, Abdel Fattah M, Ahmada S. Pulmonary function tests in patients with chronic rhinosinusitis and the effect of surgery. Egypt J Bronchol 2017;11:283-7.
11. Gupta M, Singh S, Chauhari B. Comparative study of complete nasal packing with and without airways. B-ENT 2011;7(2):91-9.
12. Yilmazer C, Sener M, Yilmaz I, Erkan AN, Cagici CA, Donmez A, et al. Pre-emptive analgesia for removal of nasal packing: a doubleblind placebo controlled study. Auris Nasus Larynx 2007; 34:471-5.
13. Melia L, McGarry GW. Epistaxis: update on management. Curr Opin Otolaryngol Head Neck Surg 2011;19:30-5.
14. Kula M, Yuce I, Unlu Y, Tutus A, Cagli S, Ketenci I. Effect of nasal packing and haemostatic septal suture on mucociliary activity after septoplasty: an assessment by rhinoscintigraphy. Eur Arch Otorhinolaryngol 2010; 267:541-6.

15. Fang S, Wei X, Ying L, Zhu L, Cui J, Ma Z, Wang W. Comparative study of nasal septal retainer and nasal packing in patients undergoing septoplasty. Eur Arch Otorhinolaryngol 2019; 276(8):2251-7.
16. Cayonu M, Acar A, Horasanli E, Altundag A, Salihoglu M. Comparison of totally occlusive nasal pack, internal nasal splint, and transseptal suture technique after septoplasty in terms of immediate respiratory distress related to anesthesia and surgical complications. Acta Otolaryngol 2014; 134(4):390-94.
17. Naik K. A novel way of trans-septal splint suturing without nasal packing for septoplasty. Indian J Otolaryngol Head Neck Surg 2015; 67(1):48-50.
18. Sowerby LJ, Wright ED. A comparison of septal stapler to suture closure in septoplasty: a prospective, randomized trial evaluating the effect on operative time. Int Forum Allergy Rhinol 2013; 3(11):911-4.
19. Wang M, Xing Z, Yuan X, Liu Y, Han L, Qin N. Effect of nasal septal suture versus nasal packing after septoplasty. Lin Chung Er Bi Yan Hou Tou Jing Wai Ke Za Zhi 2011; 25: 1068-75.
20. Kazkayasi M, Dinçer C, Arikan OK, Kiliç R. The effect of nasal packing and suture technique on systemic oxygen saturation and patient comfort after septoplasty. Kulak Burun Bogaz Ihtis Derg 2007;17:318-23.
21. Ardehali MM, Bastaninejad S. Use of nasal packs and intranasal septal splints following septoplasty. Int J Oral Maxillofac Surg 2009; 38:1022-4.
22. Cukurova I, Cetinkaya EA, Mercan GC, Demirhan E, Gumussoy M. Retrospective analysis of 697 septoplasty surgery cases: packing versus trans-septal suturing method. Acta Otorhinolaryngol Ital 2012;32:111-4.