

Septoplasty can be adopted as a Daycare Surgery

Muhammad Farooq

Department of ENT Azad Jammu and Kashmir Medical College Muzaffarabad

Abstract: Presently Septoplasty is being performed as admitted case by most of Otorhinolaryngologists and anterior nasal packaging is applied for about 24 hours, which is not free of complications.

Objective: To study the significance of early (after about 4 hours) removal of nasal packing after Septoplasty and its feasibility as daycare surgery.

Patients and Methods: This was a prospective and experimental study conducted on 100 patients for 18 months, who were operated for symptomatic deflected nasal septum (DNS). Patients were randomly divided into two equal groups. In Group-A admitted patients, after septoplasty nasal packing was removed after 24 hours and in Group-B after septoplasty, it was removed after about 4 hours; allowing patients to go home after 5-6 hours. Patient's discomfort caused by nasal packing was evaluated by means of a visual analog scale from zero to 10. Post-operative complications of septoplasty were also compared in both groups.

Results: Patients discomfort score due to nasal packing and complications of septoplasty were found significantly less in Group-B as compared to Group-A.

Conclusion: Early removal (after about 4 hours) of nasal packing following septoplasty was more comfortable and beneficial as compared to removal of nasal packing after 24 hours. It also made septoplasty a day care, more cost effective and convenient operation.

Key Words: Deflected nasal septum, Septoplasty, duration of nasal packing, trans-septal suturing, nasal discomfort score, complications, nasal splints, daycare surgery.

Introduction

Deflected nasal septum (DNS) is a very common disease caused by errors of development or trauma. Its incidence is about 20% in new-born, 27% in infants and 37% in adults. However most of these cases are asymptomatic. Symptomatic DNS causing nasal obstruction, headache, epistaxis, sinusitis, anosmia or cosmetic deformity, needs operation.^{1,2} Nasal septum mainly consists of cartilaginous and bony parts. Septal deviation may involve only the cartilage, bone or both.³

Functioning of the nose mainly depends on proper shape and position of the nasal septum. Nasal septum supports the dorsum, collumela and tip of nose and contributes to cosmetic value of the nose and face.⁴

Septoplasty, first described by Cottle in 1958 and Maran in 1974 is a tissue sparing operation where DNS is corrected by minimal resection of cartilage and bone, straightening the septum by crisscross cartilaginous incisions, wedge resection and fracturing the deviated bones.

Since introduction of the endoscopic septoplasty by Giles et al in 1994, limited septoplasty is becoming more popular.⁵ It has been a long journey in the search of an ideal nasal pack that has hemostatic and splintage actions, prevent adhesions and causes minimal complications.

Traditional nasal packing by any material such as medicated or Vaseline gauze, paraffin mesh, synthetic materials or gloves fingers; cause nasal obstruction, mucosal damage, nasal bleeding, adhesions formation and rhino-sinusitis. Rarely it can also cause fatal complications like nocturnal hypoxaemia, obstructive sleep apnoea, aspiration leading to lung collapse, toxic shock syndrome and pulmonary oedema.⁶⁻⁸

Due to nasal obstruction, patient often has unsmooth and late recovery from general anesthesia, dryness of mouth, blockage of ears, sleep disturbance and anxiety. Nasal packing also necessitate hospital stay and can cause significant increase in nocturnal blood pressure in normotensive patients. This increase in blood pressure may reflect more significantly in cardio-vascular disease patients, even if their blood pressure is under control by medicines. In these patients after nasal packing, nocturnal sudden death can occur, most probably due to myocardial infarction.⁹ Nasal packing can also cause hypoxemia,

AUTHOR'S CORRESPONDENCE

Muhammad Farooq

Associate Professor, Department of ENT Azad Jammu and Kashmir Medical College Muzaffarabad
dr.farooqak@gmail.com

tissue hypoxia and life threatening lactic acidosis in patients with impaired cardio-pulmonary functions. Therefore these patients should preferably have short duration or ventilating nasal packs with closed monitoring in intensive care unit (ICU) and controlled oxygen supplementation. Moreover nasal packs should be removed as soon as possible.¹⁰ Endoscopic septoplasty can be performed followed by functional endoscopic sinus surgery (FESS) if indicated, allowing additional time to assess the septal pocket for any hematoma formation. A small (5mm) stab incision can be made in posterior third of contralateral or ipsilateral mucosal flap to prevent hematoma formation.¹¹ An ideal nasal pack should have good hemostatic and splinter actions along with less discomfort and minimal complications.¹²

Patients & Methods

It was a prospective and comparative study conducted at United Hospital Rawalakot for 18 months from January 2015 to June 2016. One hundred patients who underwent septoplasty for symptomatic DNS were included in this study. Approval from hospital ethical committee was taken prior to start of the study. Patients requiring revision septoplasty or with underlying chronic systemic illness like hypertension, diabetes mellitus, bleeding disorders, anemia, etc. were excluded from the study. In all patients, a detailed relevant history was obtained and a general physical and Otorhinolaryngological examination was carried out. Relevant investigations such as blood Complete Picture, Bleeding Time, Clotting Time, Prothrombin Time, Activated Pro-thrombin Time, blood grouping, viral hepatitis tests and urine examination were done. Patients were conveniently randomized into two equal groups and allocation was by odds and even serial numbers. Group-A consisted of 50 patients who received conventional bilateral nasal packing for 24 hours. Group-B also consisted of 50 patients who received bilateral nasal packing for about 4 hours. Informed consent was taken from all patients after explaining all the risks and benefits of the operation. Septoplasty was performed in all patients under local anesthesia (LA) or general anesthesia (GA) as deemed necessary. About 10-20 ml of 2 percent lignocaine with adrenaline, 1 in 200,000 was infiltrated into nasal septum. Septoplasty was done in all patients along with quilting trans-septal sutures or splints were used. Anterior nasal packing was done for 24 hours in Group-A patients and for about 4 hours in group-B patients. Post-operatively all patients received

analgesic, anti-histamine and antibiotic for 5-7 days. After removal of nasal packing, decongestant local nasal spray and normal saline nasal douches were also used for 5-7 days in each patient. Patients were followed up for 24-48 weeks. The discomfort scores were recorded on a visual analogue scale of 0-10 (zero means no discomfort and 10 means worst possible discomfort). All patients were assessed at specific time points for discomfort of nasal packing such as nasal pain/headache, nasal obstruction, dryness of mouth, sleep disturbance, difficulty in swallowing and speaking, epiphora, fever and ear blockage. Complications like nasal bleeding, septal hematoma, nasal adhesions, rhino-sinusitis, toxic shock syndrome, nasal crusting, septal perforation and change of nasal shape were also looked for. It was also tried to find out if early removal of nasal packing increases the complications rate and risks the outcome of septoplasty. Statistical analyses of the obtained results were performed using SPSS version-23. Means and standard deviations were calculated. On www.GraphPad.com, the two tailed p-values were calculated by using unpaired t-test. P-value equal or less than 0.05 was considered significant.

Results

Mean age was 32.5 years ranging from 15 to 61 years. Male to female ratio was 2:1.2. The mean discomfort scores after Septoplasty were found significantly less (5.6, 0.6, 0.5 & 0.5) in patients of Group-B who received short duration (about 4 hours) anterior nasal packing as compared to Group-A(5.5, 6.0, 3.9 & 4.2), who received nasal packing for 24 hours (Table-1). The cumulative discomfort score was high (19.6) in patients of Group-A and low (7.2) in Group-B patients, favoring the latter group (Table-2). The rate of post-operative complications such as nasal adhesions, rhino-sinusitis and mucosal crusting in Group-A patients was 18%, 20% and 10% respectively as compared to 8%, 6% and 4% in Group-B patients (Table-3). Significant nasal bleeding, septal hematoma, toxic shock syndrome and significant change of nasal shape were not seen in any case of either group.

Table-1: Mean discomfort scores in specific time points on visual analogue scale of 0-10

Patient's Group	During 1-4hours	During 5-8 hours	During 9-12 hours	During 13-24 hours
Group-A	5.5	6.0	3.9	4.2
Group-B	5.6	0.6	0.5	0.5

Table-2: Cumulative discomfort scores

Patient's Group	Total Discomfort Score	Standard deviation	p-value
Group-A	19.6	8.48	Less than 0.0001
Group-B	7.2		

Table-3: Operative Complications of Septoplasty

Complications	Group A	Group B	Standard deviation	P Value
Nasal bleeding	Nil	Nil	-	-
Septal hematoma	Nil	Nil	-	-
Nasal adhesions	18%	8%	7.07	0.053
Rhino-sinusitis	20%	6%	9.89	0.054
Toxic shock syndrome	Nil	Nil	-	-
Nasal crusting	10%	4%	1	0.001
Septal perforation	Nil	Nil	-	-
Change in nasal shape	Nil	Nil	-	-

Discussion

Anterior nasal packing after septoplasty is applied by most of otolaryngologists for hemostatic and splintage functions. Types of nasal packing and its' duration varies greatly among hospitals and surgeons. Yet, there are no clear guidelines regarding the time period that packing should remain.¹³ Patients' discomfort level after septoplasty mainly depends upon the length of time, for which nasal packing stays in the nose. However type of nasal packing, process of its removal and female gender are cofactors which also affect patients' comfort and anxiety levels.¹⁴ To avoid discomfort of nasal packing, some otorhinolaryngologists perform septoplasty without packing but it can lead to nasal bleeding, septal

hematoma and flap apposition.¹⁵⁻¹⁶ Some of otorhinolaryngologists keep nasal pack for 24-72 hours to prevent nasal bleeding, septal hematoma and adhesions formations but it increases discomfort level and complication rate. Keeping in view that no nasal packing and prolonged nasal packing both caused more complications, a third option of short duration nasal packing for about 4 hours was tried in this study.

Results of this study showed that mean discomfort scores at specific time points were significantly more in Group-A (5.5, 6.0, 3.9 and 4.2) as compared to Group-B patients (5.6, 0.6, 0.5 and 0.5). Moreover incidence of nasal adhesions, rhino-sinusitis and crusting was also more (18%, 20% and 10%) in Group-A as compared to Group-B patients (8%, 6% and 4%). Statistical analysis of this data showed a p-value of 0.0001, 0.53, 0.54 and 0.001 which is highly significant favoring Group-B patients. These results are comparable to a study by Gavali et al (2008) where nasal packing in one group was removed after 2 hours with favorable results.¹⁷

However these results are contrary to few other studies who found no significant difference among two groups of patients where septoplasty was performed with or without nasal packing.^{7,18} The probable reasons of not finding any case of significant nasal bleeding and septal hematoma in either group were better operation technique, making a small (5-10mm) hole in posterior third of mucoperichondrial flap on either side and trans-septal suturing/use of splints.^{11,19}

Conclusion

Results of this study indicated that short duration nasal packing for about 4 hours after septoplasty was more comfortable and beneficial than routine use of nasal packing for 24 hours. Moreover septoplasty in this way can also be adopted as a daycare surgery. High risk patients and those who develop complications can be kept admitted for few days.

References

1. Saboo R and Modwal A. Septoplasty: Postoperative Alternative for control of hemorrhage and discomfort. Sch. J. App. Med. Sci ; 2014; 2(4D): 1376-1380.
2. Harugop AS, Mudhol RS, Hajare PS, Nargund AI, Metgudmath VV and Chakrabart. Prevalence of nasal Septal Deviation in New-borns and Its Precipitating Factors iIndian J Otolaryngol Head Neck Surg.2012 Sep; 64(3):248-251.

3. Dhingra PL, Dhingra S. Nasal septum and its diseases. In: Elsevier, editor. Diseases of ear, nose and throat & Head and Neck Surgery. 6th edition India, 2014; p.147-151.
4. Adriaan F, Von Olphen . The septum. In Michael Glesson, Editors. Scott Brown's Otolaryngology. 7th edition. Edward Arnold (pub), 2008; Vol-2; 1589-1595.
5. Apaydin F, Angelos PC, Toriumi DM. Functional rhinoplasty, Nasal septal reconstruction. In Recent Advances in Otolaryngology Head and Neck Surgery, Lalwani A.K and Pfister M.HF; Editors, 2012: 276-333.
6. Siddique M, Haq IU, Haq AU. A case report-Bilateral lung collapse due to aspirated nasal packing. Int J of Anesth, pain & Intensive care. 2009; 13(2): 75-77
7. Naghibzadeh B, Peyvandi AA and Naghibzadeh G. Does post-septoplasty nasal packing reduce complications? Acta Med Iran. 2011; 49(1):9-12.
8. Kristensen S, Bierregaard P, Jensen PF, Juul A. Post-operative nocturnal hypoxia in septoplasty: the value of nasal packing with airway tubes. Clin Otolaryngol ALLIED Sci. 1996 Aug; 21(4): 331-4.
9. Deniz M. et al. The effects of nasal packs on systemic blood pressure after septoplasty. KBS -Forum Afyon Turkey. 2004; 3(4), www.KBB-Forum.net.
10. Goel L, Goel H.F, Naik A. Impact of nasal packaging on arterial blood gases and acid base balance. The pharma Innovation journal 2016; 5(1): 106-108.
11. Jonnalagadda S, Vivian Y, Catalano P. Minimally invasive Endoscopic septoplasty-A review of a novel technique and clinical outcomes. Odisha journal of Otorhinolaryngology and HNS: 2014; 8(II): 5-9.
12. Kim Y.H, Kim S.R, Park J.H and Han Y.S. The usefulness of nasal packing with Vaseline gauze and airway silicone splint after closed reduction of nasal bone fracture. Arch Plast Surg. 2012Nov; 39(6): 612-617.
13. Hanukkah JK, Bizaki A, Fragiadakis G, Bourolis C et al. Optimum time for nasal packing removal after septoplasty. A comparative study. Greece J Rhinology 2007; 45:68-71.
14. Sahin C, Aras HI. Influence of nasal pack removal on patients anxiety after septoplasty. Kula Burundi Bogaz Ihtis Ferguson 2015; 25(5): 266-270
15. Gyawali KR, Pokharel M, Amatya RCM. Short duration anterior nasal packing after submucosal resection of nasal septum. Kathmandu University Medical Journal 2008; Vol 6, No.2, Issue 22: 173-175.
16. Eski E and Yilmaz I. Septoplasty without nasal packing: Functional outcomes and complications. A prospective clinical study. Med Crave J of otolaryngol-ENT Res 2015; 3(2): 00062. Pages 1-3. DO I: 10.15406/joenter:2015.03.00062
17. Bernardol MT, Alvesll S, Alvesll, Limall NB, Helenalll D, CondeIV A. Septoplasty with or without postoperative nasal packing? Prospective study. Braz. J. Otorhinolaryngol 2013; 79(4): 1.Sao Paulo June/Aug.
18. Ansari MA, Islam U, Hirani I, Kayani IAM, Ziauddin A. Trans-septal suturing technique without intra-nasal packing. Pak J Sug. 2013; 29(2) 132-126.
19. Ghimire A, Limbu TR and Bhandari R. Trans-septal suturing following septoplasty: An alternative for nasal packing. Nepal Med Coll J 2012; 14(3): 165-168.

HISTORY	
Date Received:	2-JUN-2017
Date Sent for Reviewer:	4-JUN-2017
Date Received Reviewers' Comments:	15-JUN-2017
Date Received Revised Manuscript:	25-JUN-2017
Date Accepted:	27-JUN-2017

CONTRIBUTION OF AUTHORS	
Author	CONTRIBUTION
Dr. Muhammad Farooq	A - B - C - D - E - F

KEY FOR CONTRIBUTION OF AUTHORS:

- A. Conception/Study Designing/Planning
- B. Experimentation/Study Conduction
- C. Analysis/Interpretation/Discussion
- D. Manuscript Writing
- E. Critical Review
- F. Facilitated for Reagents/Material/Analysi