

Original Article

COMPARISON OF THE RESULTS OF ANTERIOR NASAL PACKING VERSUS WITHOUT ANTERIOR NASAL PACKING FOR BETTER MANAGEMENT OF SEPTOPLASTY

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ABSTRACT

Objectives: The rationale of this study was to compare the results of anterior nasal packing versus without anterior nasal packing for better management of septoplasty.

Methods: This study was conducted in the department of ENT, Akhtar Saeed Trust Hospital Lahore on 220 patients who were randomly divided into two equal groups. Septoplasty was performed by a single team of surgeons and patients were followed till 6 weeks for evaluation of post-septoplasty complications like pain, septal hematoma, and bleeding. Data was collected on a specially designed proforma (attached) and analyzed on SPSS version 20.

Results: In this study of 220 patients, there were 139 males and 81 females with age range from 18 to 45 years. The mean age of 139 (63.2%) male patients and 81 (39.1%) female patients was 25.90 ± 5.974 . The female to male ratio was 1:1.7. In group "A" consisting of 67 (60.9%) male and 43 (39.1%) female patients the mean age was 25.89 ± 5.97 . Similarly, group "B" consisting of 72 (65.5%) male and 38 (34.5%) female patients the mean age was 25.92 ± 6.194 . In group "A" (with anterior nasal packing) after septoplasty 51 (46.4%), 45 (40.9%) and 14 (12.1%) patients described mild, moderate and severe pain respectively on visual analog scale. In group "B" (without anterior nasal packing) 18 (16.4%) had no pain and 92 (83.6%) patients had mild pain during the first 24 hours post-operatively (P-value < 0.05). During septoplasty 03 (2.75) patients from each group developed primary haemorrhage of grade I. Reactionary haemorrhage was noted in 27 (24.5%) patient in group A and 8 (7.30%) in group B. Secondary haemorrhage was noted in 26 (23.6%) patients in group A and 04 (3.6%) in group B with statistically significant difference (P-value < 0.05).

Conclusion: On the basis of results in two groups, post-septoplasty complications rate of pain, primary & secondary haemorrhage was less in group B (without anterior nasal packing) than in group A (with anterior nasal packing). Septal hematoma formation was rare in both groups and statistically was not significant. On the basis of the result obtained from this study, it is recommended that septoplasty operation without anterior nasal packing can be used confidently to achieve the best surgical results.

Key Words: Nasal septum, septoplasty, Nasal Packing

INTRODUCTION

It is a common and traditional practice to do anterior nasal packing after septoplasty to prevent bleeding, septal haematoma, synechiae and to get a midline position of septal cartilage and coaptation of the mucoperichondrial & mucoperiosteal flap. Anterior nasal packing causes nasal pain, headache, epiphoria, dryness of mouth, disturbed sleeping pattern, blocked ears,

earache, gag and difficulty in swallowing, and prolong hospital stay.¹ Although these are temporary sufferings and revert after removal of anterior nasal packing but a cause of considerable nuisance to the patient during the period of anterior nasal packing and its removal after 24 - 48 hours.² Considerable bleeding may start during anterior nasal packing removal due to injury to the nasal mucosa and becomes difficult to control and require anterior nasal packing to be done again. The patient may complain of severe discomfort and can request for the removal of packing under general

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anaesthesia. The injured mucosa of the septum and turbinates adhere together to form synechiae formation in the nasal cavities in the post-operative period.³ These adhesions (synechiae) cause nasal obstruction, crusting, nasal pain, pooling of nasal secretions, ultimately infection and bleeding from the nasal cavities. The patient return with initial symptoms and consequent failure of surgery.⁴ Paraffin granuloma formation result by anterior nasal packing on the nasal septum. Tight nasal packing to prevent septal haematoma, bleeding and stabilization of septal cartilage, in the midline position increases chances of septal cartilage necrosis due to reduced blood supply leading to septal perforation.⁵

A rare condition, toxic shock syndrome; occurs after septal surgery with nasal packing. It is caused by staphylococcal (sometimes streptococcal) bacteremia and the patient develops nausea, vomiting, purulent secretions, hypotension and body rash.^{1,6} Pragmatic benefits without nasal packing septoplasty, do not cause nasal obstruction, nasal pain, headache, dryness of mouth, blockage of ears, earache, gag, difficulty in swallowing, epiphora and disturbed sleeping pattern.

In this context, different studies and literature suggest that anterior nasal packing is not necessary after septoplasty to prevent post-operative nasal bleeding and septal haematoma.^{7,9} Therefore the routine use of anterior nasal packing following septoplasty is not justified.⁹

METHODS

This study was conducted in the ENT department of Akhtar Saeed Trust Hospital from July 2017 to June 2019. It was a randomized control trial. Non- probability purposive sampling technique was used.

The sample size has been calculated (Maeed and Al-Shehri., 2011) using the expected percentage of post-operative pain in group A (with an anterior nasal packing) 28.60% and 11.40% in group B (without anterior nasal packing) at 90% power of study and 5%

level of significance. In this study, 220 patients were allocated randomly into groups A and B comprising 110 patients in each group. Patients were included in the study regardless of the type of septal deviation, patients of either sex between the ages of 18 to 45 years were incorporated in this research work.

All those patients who were submitted to revision surgery, had associated nasal surgeries (e.g.; Septo-Rhinoplasty), hypertensive, had coagulation disorders (PT > 14sec., APTT> 35sec., INR> 1.2) were excluded. Each patient was randomly allocated into two groups as Groups A (110 patients) and group B. (110 patients) by using the balloting method.

All collected data were analyzed using SPSS version 20. Descriptive statistics, mean and \pm S.D was used for quantitative data like age (years). Frequencies and percentages were calculated for qualitative data like gender and post-operative complications. Independent sample t-test was applied to compare the intensity of postoperative pain on the visual analog scale in both groups. Chi-square test was applied to compare the presence of postoperative haemorrhage & septal haematoma in both groups.

RESULTS:

In this study, the average age of patients was 25.90 ± 5.974 years. The minimum age of patients was 18 and the maximum age of patients was 45 years. The mean age of patients in Group A and Group B was 25.89 ± 5.773 and 25.92 ± 6.194 years respectively. There was no statistical difference in age in group A and group B, p-value > 0.05 (0.793). In group A with anterior nasal packing, there were 67 (60.90 %) males and 43 (39.10 %) females and in group B without anterior nasal packing, 72 (65.5% %) males and 38 (34.5 %) female patients. The female to male ratio was 1:1.7. There was no statistical difference in gender in 'group A and group B, p-value > 0.05(0.793). Gender distribution showed that there were 139 (63.2%) patients were

male and 81 (36.8%) were female. Male B^a = Pain measured in group B (without anterior nasal packing)

After septoplasty, 51 (46.4%), 45 (40.9%) and 14 (12.7%) patients described mild, moderate and severe pain respectively in group A (with an anterior nasal packing), Table 1.

While in group B, 18 (16.4%) patients were free of pain and mild pain complained by 92 (83.6 %) after septoplasty. There was a statistically significant difference between group A and group B (p-value < 0.05). After

patients were dominating female patients 24 hours pain intensity shifted from mild to moderate and severe levels 10 (9.1%), 18 (16.4%) and 82 (74.5%) respectively in group A. on the other side in group B, 93 (84.5%) were free of pain and 17 (15.5%) complained mild pain on visual analog scale. There was a statistically significant difference between group A and group B (p-value < 0.05).

Table 1: Comparison of Pain in Group A and Group B

		Pain					
Time	Group	No Pain	Mild Pain	Moderate Pain	Severe Pain	p-Value	
After Nasal Packing	A	Frequency	0	51	45	14	0.00*
		Percent	0%	46.4%	40.9%	12.7%	
	B	Frequency	18	92	0	0	
		Percent	16.4%	83.6%	0%	0	
After 24 Hours	A	Frequency	0	10	18	82	0.00*
		Percent	0%	9.1%	16.4%	74.5%	
	B	Frequency	93	17	0	0	
		Percent	84.5%	15.5%	0%	9%	
During pack removal after 48 Hours	A	Frequency	0	0	38	72	0.00*
		Percent	0%	0%	34.5%	65.6%	
	B ^a	Frequency	100	10	0	0	
		Percent	90.9%	9.1%	0%	0%	
01 Weeks	A	Frequency	14	96	0	0	0.00*
		Percent	12.7%	87.3%	0%	0%	
	B	Frequency	110	0	0	0	
		Percent	100%	0%	0%	0%	
02 Weeks	A	Frequency	43	67	0	0	0.00*
		Percent	39.1%	60.9%	0%	0%	
	B	Frequency	110	0	0	0	
		Percent	100%	0%	%	0%	
03, 04, 05 & 06 weeks	A	Frequency	110	0	0	0	0.00*
		Percent	100%	0%	0%	0%	
	B	Frequency	110	0	0	0	
		Percent	100%	0%	0%	05	

* p - value < 0.05

Table 2 Septal Haematoma Formation in Group A and Group B

		SeptalHaematoma		
		No Haematoma	Haematoma	Total
Group A	Frequency	107	03	110
	Percent	97.3	2.7	100.0
Group B	Frequency	106	04	110
	Percent	96.4	3.6	100.0
P- Value		0.083	0.045	0.320

*p - value > 0.05

After 48 hours, anterior nasal packing was removed in group A patients and pain levels dramatically shifted towards moderate and severe pain in 38 (34.5%) and 72 (65.5%) patients respectively. While 100 (90.9%) patients in group B were free of pain and only 10 (9.1%) patients had mild pain. There was a statistically significant difference between group A and group B (p-value < 0.05).

After one week 110 (100%) patients were free of pain in group B (without anterior nasal packing). 14 (12.7%) patients in group A were free of pain and 67 (60.9%) patients had mild pain. There was a statistically significant difference between group A and group B (p-value < 0.05).

After two weeks, all patients in group B (without anterior nasal packing) and 43 (39.1%) in group A (with an anterior nasal packing) were free of pain while 67 (60.9%) patients had mild pain in group A (with anterior nasal packing). There was a

statistically significant difference between group A and group B (p-value < 0.05). After 03, 04, 05 & 06 weeks all patients in group A and group B were free of pain.

In group A (with an anterior nasal packing) 03 (2.7%) patients and in group B (without anterior nasal packing) 04 (3.6%) patients developed septal haematoma, table 2. There was no statistically significant difference between group A and group B (p-value > 0.05).

During septoplasty, 03 (2.7%) patients from each group developed primary haemorrhage of grade I, table 3. Reactionary haemorrhage was noted in 27 (24.5%) patients in group A and 8 (7.3%) in group B. Secondary haemorrhage was noted in 26 (23.6%) patients in group A and 04 (3.6%) in group B. There was a statistically significant difference between two groups in, reactionary and secondary haemorrhage (p-value < 0.05).

Table 3: Bleeding in Group A and Group B

	No Bleeding	Grade I Bleeding	Grade II Bleeding	Grade III Bleeding	Grade IV Bleeding
Primary (Group A)	107	3	0	0	0
Reactionary (Group A)	83	27	0	0	0
Secondary (Group A)	84	26	0	0	0
Primary (Group B)	101	3	0	0	0
Reactionary (Group B)	102	8	0	0	0
Secondary (Group B)	106	4	0	0	0

DISCUSSION

In this study, the total number of the patient was 220. Patients were between the age ranges of 18 - 45 years. The mean age of patients was 25.90 ± 5.974 years with 139 (63.2%) male and 81 (36.8%) female patients. There was no statistically significant difference between age and gender in group A and group B (p -value > 0.05). In this study, the female to male ratio was 1: 1.7. This higher proportion of male patients is also reported in literature ³. In this study, all (220) patients were randomized into two equal groups by balloting method. Group A comprised of 110 patients and was subjected to pack with anterior nasal packing after septoplasty. While group B also comprising of 110 patients was managed without anterior nasal packing post-operatively. We documented and correlated post-operative data in terms of pain, bleeding and septal haematoma in group A and group B. Data of Pin description was collected from patients on visual analog scale reading from 0 to 10 level at 24 and 48 hours, then on 7, 14, 21, 28, 35 and 42 days after procedure. After septoplasty, nasal pain at 24 and 48 hours was higher in group A (Patients with anterior nasal packing) on VAS than group B (Patients without anterior nasal packing). In group A, mild, moderate and severe pain complained by 31 (46.4%), 15 (40.9%) and 14 (12.7%) patients respectively in first 24 hours after septoplasty. At the end of 48 hours during the removal of anterior nasal packing pain level in group A shifted from mild, moderate and severe stage to moderate and severe level in 38 (34.5%) to 72 (65.6%) patients respectively reporting a value greater than 7 on visual analog scale - severe pain on visual analog scale. On the other side, after 48 hours 100 (90.9%) patients in group B were free of pain and remaining 10 (9.1%) had mild pain. In literature, similar results are present in which high grades of postoperative pain were narrated by patients in first 24 hours and higher upon removal of the pack in the anterior nasal packing group ⁴. Their stated grades on visual analog scale were significantly

more than those without anterior nasal packing septoplasty. Patients with anterior nasal packing septoplasty ominously showed more tears, headache and complained disturbed sleep patterns. One more study depicts similar data in which post-operative pain was evaluated after septoplasty in 697 patients ⁵. This study exhibited that patients packed with anterior nasal packing complained more pain than those without anterior nasal packing after septoplasty. In our study, patients without anterior nasal packing were 90.9% free of pain and no pain recorded in a single patient after 1 week. However, patients in group A with anterior nasal packing complained nasal pain till the end of 3rd week. Statistically significant differences persisted throughout the study till the end of 3 weeks between two groups (p -value > 0.05). In this study, patients in group A (with anterior nasal packing) had minor oozing after septoplasty and more oozing upon removal of anterior nasal packing after 48 hours. This oozing was managed conservatively by nose pinching and vasoconstrictor drops in 83 (75.3%) patients. Remaining 27 (24.7%) patients had grade 1 reactionary haemorrhage and 6 patients were repacked with anterior nasal packing for next 12 hours. On the other hand, in group B, reactionary haemorrhage of grade I was noted in 8 (7.2%) patients. They were managed with vasoconstrictor drops and anterior nasal packing was not done even in a single patient. Such observations are also described in the literature ⁷. Post-operative reactionary haemorrhage up to 7.7% had been reported. Half of these patients were managed with conservative treatment and remaining half were repacked to control the reactionary haemorrhage. Their statistical data was significant with and without anterior nasal packing after septoplasty. In addition, 26 (23.6%) cases of secondary haemorrhage in group A and 04 (3.6%) cases in group B came back on 7th and 9th day and all were packed with anterior nasal packing for next 12 hours. In group B without anterior nasal packing, post-

operative oozing was minimal on the first day compared to patients with nasal packing. Five patients came back with minor oozing within 24-48 hours on 3rd day of operation. This oozing was managed with nose pinching and vasoconstrictor drops and send back to home with assurance. In group A and group B, patient did not come back with secondary haemorrhage of grade II, III and IV after septoplasty. 84 (76.4%) patients in group A and 106 (96.4%) patients in group B did not report any problem till the end of this study. Similar results also have been reported in literature⁸. After septoplasty, patients in group B (without nasal packing) were discharged on the same day compared to patients in group A (with anterior nasal packing) who were discharged on second and third day. In this study, septal haematoma was a rare complication after septoplasty. Only 03 (2.7%) patients in group A and 04 (3.6%) patients in group B developed septal haematoma (p-value > 0.05). The septal haematoma was drained and nasal cavity packed for 12 hours. These results show that anterior nasal packing has no substantial role to prevent the septal haematoma after septoplasty. These results correlate with a study¹³ in which only one patient with anterior nasal pack IH, developed septal hematoma post-operatively. A meta-analysis study conducted by Ranglawala³ reported that 10' and 07 out of 948 patients developed septal haematoma in packed and non - packed groups respectively. Consequently if anterior nasal packing is certainly effective then there should be no septal haematoma formation in anterior nasal packing septoplasty and definitely should have septal haematoma formation in all patients without anterior nasal packing.

CONCLUSION

On the basis of findings in this study, group B (without anterior nasal packing) had an early pain free rate (at day 1) and less complications (such as primary & secondary haemorrhage) compared with group A (with anterior nasal packing). The septal

hematoma formation is statistically insignificant in both groups. In the future, we can perform septoplasty without anterior nasal packing to achieve early pain - free rates, fewer complications, less hospital stay and may be higher satisfaction of our patients.

REFERENCES

1. Al-Raggad DK, El-Jundi AM, Al-Momani OS, Al-Serhan MM, Nawasrah OO, Qhawi MA, Husban AM. Suturing of the nasal septum after septoplasty, is it an effective alternative to nasal packing?. *Saudi medical Journal*. 2007 Oct;28(10):1534.
2. Awan MS, Iqbal M. Nasal packing after septoplasty: a randomized comparison of packing versus no packing in 88 patients. *Ear, Nose & Throat Journal*. 2008 Nov;87(11):624-627.
3. Banglawala SM, Gill M, Sommer DD, Psaltis A, Schlosser R, Gupta M. Is nasal packing necessary after septoplasty? A meta-analysis. In *International forum of allergy & rhinology* 2013 May; 3(5):418-424.
4. Bernardo MT, Alves S, Lima NB, Helena D, Condé A. Septoplasty with or without postoperative nasal packing? Prospective study. *Brazilian Journal of Otorhinolaryngology*. 2013 May;79(4):471-474.
5. Cole P, Chaban R, Naito K, Oprysk D. The obstructive nasal septum: effect of simulated deviations on nasal airflow resistance. *Archives of Otolaryngology-Head and Neck Surgery*. 1988 Apr;114(4):410-412.
6. Cukurova I, Cetinkaya EA, Mercan GC, Demirhan E, Gumussoy M. Retrospective analysis of 697 septoplasty surgery cases: packing versus trans-septal suturing method. *Acta Otorhinolaryngologica Italica*. 2012 Apr;32(2):111.
7. Eski E, Yilmaz I. Septoplasty without Nasal Packing: Functional Outcomes and Complications, A Prospective Clinical Study. *Journal of Otolaryngology - ENT Research*, 2015 Sep; 3(2) : 00062.
8. Hafeez M, Ullah I, Iqbal K, Ullah Z. Septoplasty without nasal packing. *Gomal Journal of Medical Sciences*, 2010;8 (2): 141 - 142.

9. Sreenivasulu M, Hemanth V, Durgaprasad V, Sowmya L. Septoplasty with and without nasal packing: A comparative study. *Journal of Evidence Based Medicine and Healthcare.* 2016 May; 3 (36): 1765-1767.
10. Reitzen SD, Chung W, Shah AR. Nasal septal deviation in the pediatric and adult populations. *Ear, Nose and Throat Journal.* 2011 Mar;90(3):112-115.
11. Mladina R, Čujić E, Šubarić M, Vuković K. Nasal septal deformities in ear, nose, and throat patients: an international study. *American journal of otolaryngology.* 2008 Mar 1;29(2):75-82.
12. ALI MAEED S AL-SHEHRI MD. Assessment of complications of nasal packing after septoplasty. *The Medical Journal of Cairo University.* 2011;79(2).
13. Mane RS, Patil B, Mohite A. Comparison of septoplasty with and without nasal packing and review of literature. *Indian Journal of Otolaryngology and Head & Neck Surgery.* 2013 Aug;65(2):406-408.
14. Kim J, Kim SW, Kim SW, Cho JH, Park YJ. Role of the sphenoidal process of the septal cartilage in the development of septal deviation. *Otolaryngology--Head and Neck Surgery.* 2012 Jan;146(1):151-155.