



Research Paper

Timing of Removal of Nasal Pack Following Septoplasty

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Abstract

Objective: To compare and evaluate the efficacy, safety profile as well as subjective influence on the patient with regards to removal of anterior nasal packs after 24 and 48 hours following septoplasty.

Methods: Prospective randomised clinical study conducted on 104 patients who underwent septoplasty in the ENT Department of a tertiary care Hospital for a total period of 6 months. Anterior nasal packs were removed after 24 and 48 hours in the 2 randomized groups. Post operative complications as well as subjective discomfort levels were compared using Visual Analogue Scale (VAS) and Sinonasal Outcome Test (SNOT-20).

Results: A small difference in the rate of post operative complications were observed among the two groups with good differences in the subjective discomfort levels.

Conclusions: Early nasal pack removal reduces patients' discomfort without much increase in the complications.

Keywords: Septoplasty, Polyvinyl Alcohol sponge, Sinonasal Outcome Test-20, Visual Analogue Scale, Acute Discomfort Score.

Introduction

Septoplasty is universally accepted as a treatment modality for symptomatic deviated nasal septum. It is one of the more common surgeries performed by the Otolaryngologist. Introduction of anterior nasal packs after septoplasty is common so as to achieve hemostasis, prevent synechia, impede or arrest formation of septal hematoma among other advantages¹. It is not devoid of disadvantages though ranging from difficulty in swallowing, epiphora, headache, disturbed sleep to rarely even toxic shock syndrome². In the absence of any fixed universally accepted guidelines, it usually comes down to the "Departmental protocol" or "personal preference" when it comes to either

choice of nasal pack or the duration for which it is kept in situ postoperatively. In our Department, after septoplasty, Poly Vinyl Alcohol (PVA) sponge anterior nasal space packs are applied and usually kept in situ for 48 hours. In this present study, we intend to find out if keeping the PVA sponge pack in situ for 24 hours instead of the usual 48 hours causes any increase in rate of post-op complications or it causes any subjective change in the level of discomfort felt by the patient due to presence of the PVA sponge pack.

Methods

This was a prospective, randomized control study carried out in the ENT OPD of XXXX hospital. The study period was for 6 months, from June

2018 to November 2018. All patients above 18 years of age undergoing septoplasty for deviate deviated nasal septum (without any other associated/concurrent surgical procedure) were included in the study. Patients with h/o trauma in last 6 months, poorly controlled asthma, and any other associated nasal pathology requiring any concurrent surgical procedure were excluded from the present study. The patients were assigned randomly to one of the two groups – Group A and Group B, where we had a total of 104 patients, each group containing 52 patients. All the patients underwent septoplasty under local anaesthesia with 2% Lignocaine with Adrenaline and i.v sedation with Dexmedetomidine. The patients in Group A had their PVA sponge nasal packs removed after 24 hours of surgery whereas, the patients in Group B had their nasal packs removed 48 hours after surgery.

A Visual Analogue Scale (VAS) with a 10 point scale and SNOT-20 scale with points ranging from 0 to 5 was used to obtain response from the patients regarding the subjective level of discomfort caused due the PVA sponge pack. The patients were evaluated at 12, 24, 36 and 48 hours post-operatively and their response on the VAS and SNOT-20 was noted. The patients were also evaluated after removal of nasal packs for any active nasal bleeding or formation of septal hematoma. Patients were also followed up at 14 days and 28 days post-op for any septal perforation and synechia.

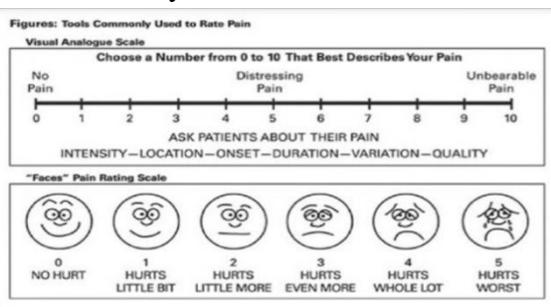


Fig 1: Visual Analogue Scale (VAS)

Results

Of the total 104 patients included in our study, there were 64 male and 42 females. In Group A, there were 30 male and 22 females, whereas in

Group B there were 32 male and 20 females. Mean age of the patients in Group A was 34 years whereas that of Group B was 35 years. The average discomfort score (ADS) for Group A patients at 12 hours was 6.76 (SD 0.71) and at 24 hours was 2.92 (SD 0.8) after removal of PVC packs. The ADS thereafter among Group A patients at 36 hours was 2.6 (SD 0.49) and at 48 hours was 2.36 (SD 0.56). In Group B patients, ADS was 6.44 (SD 0.7) at 12 hours, 6.48(SD 0.57) at 24, 6.5(SD 0.59) at 36 hours, and 2.84 (SD 0.54) at 48 hours after removal of ANS PVC packs. The mean SNOT 20 score for Group A patients at 12 hours was 2.85, at 24 hours was 1.31, at 36 hours was 0.2 and at 48 hours was 0.06. In Group B patients, the mean SNOT-20 score at 12 hours was 2.7, at

ID: _____ **SINO-NASAL OUTCOME TEST (SNOT-20)** DATE: _____

Below you will find a list of symptoms and social/emotional consequences of your rhinosinits. We would like to know more about these problems and would appreciate your answering the following questions to the best of your ability. There are no right or wrong answers, and only you can provide us with this information. Please rate your problems as they have been over the past two weeks. Thank you for your participation. Do not hesitate to ask for assistance if necessary.

	No problem	Very mild problem	Mild or slight problem	Moderate Problem	Severe Problem	Problem as bad as it can be	5 Most Important Items
1. Considering how severe the problem is when you experience it and how frequently it happens, please rate each item below on how "bad" it is by circling the number that corresponds with how you feel using this scale ->							
1. Need to blow nose	0	1	2	3	4	5	<input type="radio"/>
2. Sneezing	0	1	2	3	4	5	<input type="radio"/>
3. Runny nose	0	1	2	3	4	5	<input type="radio"/>
4. Cough	0	1	2	3	4	5	<input type="radio"/>
5. Post-nasal discharge	0	1	2	3	4	5	<input type="radio"/>
6. Thick nasal discharge	0	1	2	3	4	5	<input type="radio"/>
7. Ear fullness	0	1	2	3	4	5	<input type="radio"/>
8. Dizziness	0	1	2	3	4	5	<input type="radio"/>
9. Ear pain	0	1	2	3	4	5	<input type="radio"/>
10. Facial pain/pressure	0	1	2	3	4	5	<input type="radio"/>
11. Difficulty falling asleep	0	1	2	3	4	5	<input type="radio"/>
12. Wake up at night	0	1	2	3	4	5	<input type="radio"/>
13. Lack of a good night's sleep	0	1	2	3	4	5	<input type="radio"/>
14. Wake up tired	0	1	2	3	4	5	<input type="radio"/>
15. Fatigue	0	1	2	3	4	5	<input type="radio"/>
16. Reduced productivity	0	1	2	3	4	5	<input type="radio"/>
17. Reduced concentration	0	1	2	3	4	5	<input type="radio"/>
18. Frustrated/restless/irritable	0	1	2	3	4	5	<input type="radio"/>
19. Sad	0	1	2	3	4	5	<input type="radio"/>
20. Embarrassed	0	1	2	3	4	5	<input type="radio"/>

2. Please mark the most important items affecting your health (maximum of 5 items) _____ ↑

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Fig 2: Sinonasal Outcome Test (SNOT-20)

24 hours was 3.1, at 36 hours was 3.4 and at 48 hours was 1.15. In Group B the most common symptoms to increase in severity following keeping the nasal pack in situ for more than 24

hours was - need to blow nose, with mean SNOT 20 score of 3.4, 3.7 and 4.2 at 12 hours, 24 hours and 48 hours respectively followed by - post nasal discharge, with scores 2.9, 3.6 and 4.3 at 12 hours, 24 hours and 36 hours respectively and facial pain/pressure, with scores 2.84, 3.8 and 4.15 at 12 hours, 24 hours and 36 hours respectively.

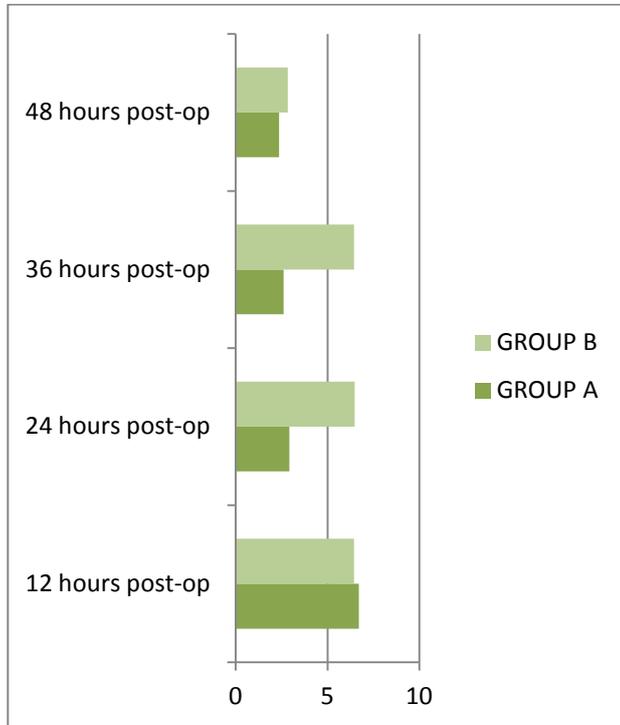


Fig 3: Bar diagram showing the Average Discomfort Score using Visual Analogue Scale in Group A and B in the post operative period

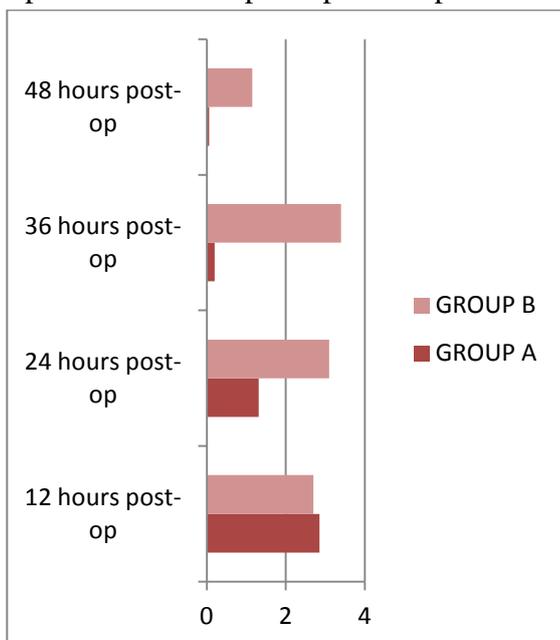


Fig 4: Bar diagram showing the mean SNOT -20 Score in Group A and Group B in the post operative period

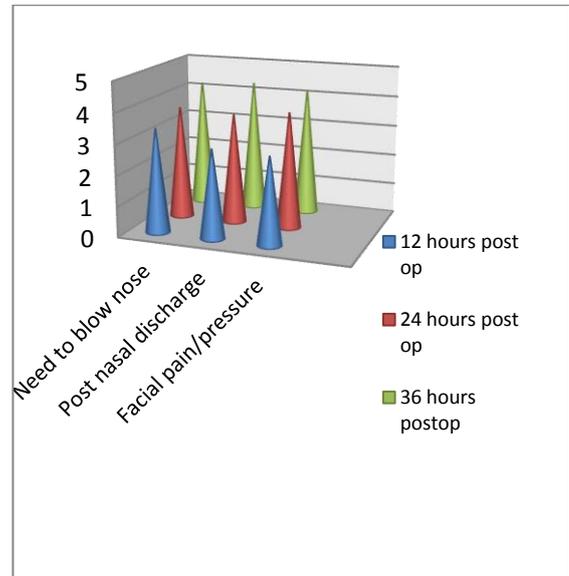


Fig 5: Bar diagram showing the symptoms with maximum increase in the mean SNOT-20 score in Group B patients in the postoperative period

No significant epistaxis requiring reinsertion of anterior nasal space PVC packs was noted in either study groups after removal of nasal packs. 28 patients from group A had nasal bleeding just after removal of nasal packs which was stopped within the next few minutes on conservative management. The same happened to only 20 patients from Group B. None of the patients from either groups required reinsertion of nasal packs. Thus automatically, patients in Group A were discharged earlier than Group B patients. Follow up at 14 and 28 days did not show any complications in the form of synechia or septal perforation in either of the two groups.

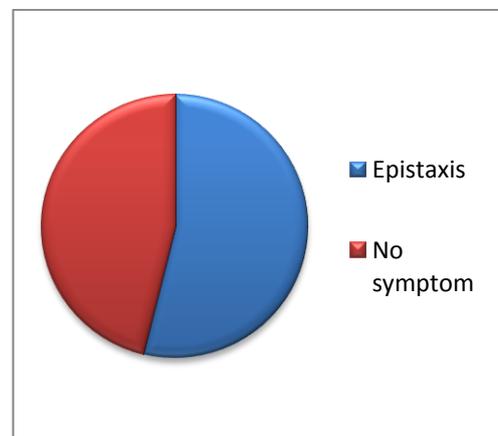


Fig 6: Percentage of patients in Group A with symptoms following removal of nasal pack

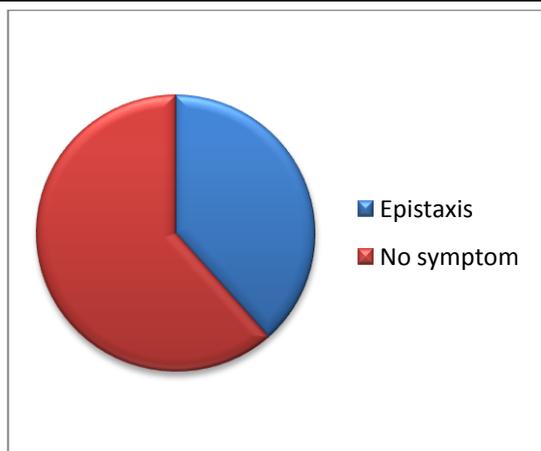


Fig 7: Percentage of patients in Group B with symptoms following removal of nasal pack

Discussion

Nasal packing following septoplasty is a standard practice among otolaryngologists. Nasal packing have been classically done using ribbon gauge soaked in bismuth iodoform paraffin paste, liquid paraffin or antibiotic ointments. With the advent of polyvinyl acetate sponge (merocel), it has been in routine use following surgical procedures like septoplasty, FESS etc. Bioresorbable nasal pack (Nasopore) is also preferred by many surgeons as it reduces hospital stay and patient discomfort. Various balloon tamponade devices are also available. Many surgeons donot prefer the application of nasal packs following septoplasty. A study by Rajarshi s. Mane et al. shows that not packing the nose after septoplasty and applying quilting sutures to the anterior part of nasal septum had lower discomfort level than nasal packing. Mucosal flaps are approximated by continuous suture quilting, using 4.0 plain catgut on a small cutting needle or by using a curved needle . These techniques also help to close any mucosal tears and support the remaining cartilage³. In our study, we concentrate on the appropriate timing of anterior nasal pack removal following septoplasty and the discomfort associated with it. A similar study was done by Hajjioannou et al. which used the visual analogue scale(VAS), concluded that the removal of nasal pack after 48 hours had greater average discomfort score(ADS)(3.45) compared to those in whom the nasal pack was removed after 24

hours (2.44)⁴. A study by Caner Sahin et al.shows that there is significant increase in the anxiety level in the patients in whom nasal packs are kept for 48 hours following septoplasty⁵. In some studies, nasal packing has been associated with stroke, myocardial infarction, sudden death possibly due to nocturnal changes in oxygen saturation, paraffin granulomas and spherulocytosis⁶. Studies say that highest noticed discomfort after 12 hours of nasal packing is probably due to absorption of nasal fluids and blood and the significant increase in patients' discomfort when packing is kept endonasally more than 24 hours is probably due to prolonged hospitalization⁴. In our study, unlike other studies we used both VAS or SNOT-22 scales. Group A patients have 2.92 ADS on VAS and 1.31 SNOT-20 score at 24hours following nasal pack removal. On the contrary, Group B patients had 6.48 ADS on VAS and 3.1 SNOT-20 score at 24hours of nasal packing which increased to 6.5 on VAS and 3.4 on SNOT-20 at 36 hours and reduced significantly to 2.84 on VAS and 1.15 on SNOT-20 at 48hours after nasal pack removal. The symptoms that have been found to have been affected most following prolonged nasal pack application are "Need to blow nose", "post nasal discharge" and "facial pain/pressure".

Conclusion

Removal of nasal pack after 24 hours of application is always a better option than keeping it in situ for 48 hours as we witnessed a significant variation and increase in the patients' discomfort level in our case scenario. Even, there has been not much difference in the complications in either group which in our study was epistaxis only. Early nasal pack removal hence, also increase patient compliance and builds a healthy patient doctor relationship.

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Abbreviations

PVA- Polyvinyl alcohol

SNOT- Sinonasal Outcome

VAS- Visual analogue scale

ADS- Average Discomfort Score

SD- Standard Deviation.