

TO COMPARE EFFICACY & DISCOMFORT IN POSTERIOR NASAL PACKING WITH FOLEY'S CATHETERS VERSUS BIPP GAUZE PACKING IN CASES OF POSTERIOR EPISTAXIS

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ABSTRACT

Objective: To compare efficacy and discomfort in posterior nasal packing with Foley's catheters versus BIPP gauze packing in cases of posterior epistaxis.

Study Design: Randomized controlled trial.

Place and Duration of Study: Combined Military Hospital (CMH) Kharian from October 2011 to October 2013.

Material and Methods: A total of 206 patients of posterior epistaxis were included in the study through non-probability convenience sampling and randomly divided in two groups of 103 each. In group A patients were treated by posterior nasal packing with Foley's catheter and in group B patients were treated by posterior nasal packing with BIPP gauze and results in terms of control of epistaxis and discomfort during pack insertion, while the packs were in situ and pack removal, based on VAS (Visual Analogue Scale) were observed.

Results: Average age in group A was 52.64 years (SD=9.57) and in group B it was 50.27 years (SD ± 10.13). There were 71 (68.9%) males in group A while 67 (65%) males in group B. During posterior nasal pack insertion, the mean pain score in Group A was 6.21 (SD ± 1.13) and in Group B was 7.43 (SD ± 1.19). The mean pain score with the pack in situ was 4.27 (SD ± 0.08) in Group A versus 4.76 (SD ± 0.09) Group B. Similarly pack removal was also more painful in group B than group A (6.14 ± 0.91 vs 6.89 ± 1.09) ($p=0.000$). In the group A, 31 (30.1%) patients had rebleeding after pack removal, out of which 9 (8.7%) had significant bleeding requiring repacking. In 22 (21.4%) cases there was mild bleeding which settled without repacking. In group B 22 (21.4%) patients had rebleeding after pack removal, out of which 5 (4.7%) had significant bleeding requiring repacking.

Conclusion: It is concluded that posterior nasal packing with BIPP gauze pack is effective for controlling posterior epistaxis but causes more discomfort to the patients as compared to Foley's catheter packing.

Keywords: BIPP gauze pack, Foley's catheter, Posterior epistaxis.

INTRODUCTION

Epistaxis is a very common medical emergency. It is prevalent in all age groups and both sexes. The etiology of epistaxis may be local or systemic but mostly it is spontaneous and idiopathic. Trauma is considered to be a key causative factor. Almost 60% of population has epistaxis once in life time but only 6% need medical attention¹. The hospital admission of adult population for epistaxis is around 30 per 100000 individuals². The most common site of epistaxis is from the plexus of vessels on the anterior portion of the nasal septum known as

Kiesselbach's plexus. Epistaxis may occur posteriorly from branches of the sphenopalatine artery and woodruff plexus. Clinically it is not possible to identify the exact site of bleeding in most cases even after thorough clinical examination, especially in cases of posterior epistaxis. The site of bleeding in posterior epistaxis was identified in a study by Thornton in 36 cases, out of which 7 bled from inferior turbinate area, 7 from the posterior septum, 4 from the inferior meatus, 10 from the middle turbinate and 8 were bleeding from the middle meatus³.

In more than 90 % of cases epistaxis is anterior and in remaining cases it is posterior^{4,5}. Posterior epistaxis is more common in elderly and may require posterior nasal packing with ribbon gauze impregnated with paraffin, BIPP gauze, nasal sponge tampons, double-balloon

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nasal catheters, or anterior gauze packing with posterior Foley's catheters. Foley's catheter is a readily available option which can be used for posterior nasal packing⁶.

Posterior nasal packing is an uncomfortable procedure because of the internal contours of the nasopharynx and nose which doesn't allow easy comfortable access of any instrument, device or packing material and

MATERIAL AND METHODS

These randomized controlled trials were carried out at the department of Ear, Nose and Throat, Combined Military Hospital (CMH) Kharian from October 2011 to October 2013. Patients of either sex between the ages of 12-75 years, with posterior epistaxis, where no anterior bleeding point was visualized in nasal cavity and bleeding could not be controlled by

Table-1: Comparison of pain score between the two groups.

Procedure	Pain on pack insertion		Pain while pack in situ		Pain on pack removal	
	Group A	Group B	Group A	Group B	Group A	Group B
Groups						
Mean pain score	6.21	7.43	4.27	4.76	6.14	6.89
Standard deviation	1.13	1.19	0.08	0.09	0.91	1.06

$p=0.000$

Table-2: Frequency of patients with bleed vs no bleed after pack removal.

Efficacy	Group A (n=103)	Group B (n = 103)
Bleed on Pack Removal	31 (30.1%)	22 (21.4%)
Significant Bleed, required repacking	9 (8.7%)	5 (4.9%)
Minor bleed	22 (21.4%)	17 (16.5%)
No bleed	72 (69.8%)	81 (78.6%)
p -value	0.151	

in comparison of two methods of packing the balloon inflatable method is less uncomfortable as compared to the gauze pack⁴. In patients with inflatable nasal packing, its placement is significantly faster and is less painful and the frequency of rebleeding (checked after removal of pack) is more in case of inflatable nasal packing and less in cases of gauze packing⁵. Posterior nasal packing with gauze is a traditional effective method as alternate to inflatable packing balloons including Foleys catheter, and it has shown to cause less rebleeding upon removal of the pack as compared to the balloon inflatable system.

Foley's catheters are easy to insert and remove and cause very little mucosal damage. They are easily available and cost effective. The BIPP gauze pack is antibiotic impregnated gauze is not easily available, costly item but can be kept for longer period of time. Gauze itself is traumatizing to the mucosa. This study was carried out to explore the more effective and less painful nasal packing procedure.

anterior nasal packing, were included in the study. Patients having congenital bleeding disorders or patients with advanced cardiac disease or cardiac failure were excluded from the study. Sample size was calculated by using WHO sample size calculator (2 proportional formulas).

Total 206 patients fulfilling the inclusion criteria were included in the study through non-probability consecutive sampling and randomly divided into two equal groups of 103 each using random numbers table. In group A posterior nasal packing was done with Foley's catheter. In group B posterior nasal packing was done with BIPP gauze pack. Commonly available latex made Foley's catheters of size 16 and 18 French (bulb of which has capacity of 30-50 cc) were used. About 35-45 CC air was injected into Foley's catheter to fill its bulb for retention in the nasopharynx. Foley's catheter was retained at the nostril by applying knot. The procedures of nasal packing were carried out in minor Operation Theatre and in the emergency department of the hospital without

any anesthesia. Similarly pack removal was done in minor OT without any anesthesia. Posterior nasal pack was kept in place for 5-6 days. Subjective pain was assessed during the insertion of posterior nasal pack, removal of the nasal pack and while the pack was in situ, according to the visual analogue scale (VAS). The pain score ranged from 1 to 10. Score 1 indicated mild pain and score 10 showed maximum pain. All the data was recorded on a specially designed Performa attached as annexure A. Efficacy of nasal packing was

RESULTS

A total of 206 patients were included in the study and randomly divided in two groups of 103 each. Average age in group A was 52.64 years (SD \pm 9.57) and in group B it was 50.27 years (SD \pm 10.13). There were 71 (68.9%) males in group A while 67 (65%) males in group B. During posterior nasal pack insertion, the mean pain score in Group A was 6.21 (SD \pm 1.13) and in Group B was 7.43 (SD \pm 1.19). The mean pain score with the pack in situ was 4.27 (SD \pm 0.08) in Group A versus 4.76 (SD \pm 0.09) Group B.

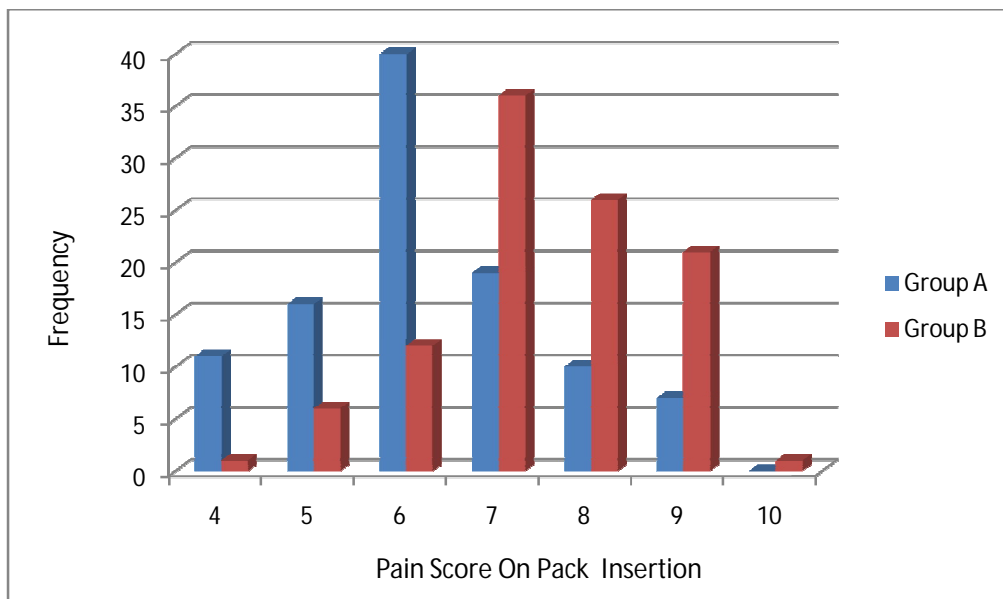


Figure-1: Comparison of pain score between the groups during pack insertion.

assessed by checking rebleeding after pack removal which was removed after 5-6 days. The patients who had significant rebleeding after removal of posterior pack, fresh posterior nasal pack was inserted and kept for another 2-3 days for complete hemostasis.

Data was analyzed using statistical package for social sciences (SPSS) version 19. Frequency and percentage were calculated for qualitative variables while mean and standard deviation (SD) were calculated for quantitative variable. Independent samples t-test was used to compare the quantitative variable while chi square test was used to compare qualitative variable between the two groups. A *p*-value < 0.05 was considered significant.

Similarly pack removal was also more painful in group B than group A, as clearly shown in table-1. In Group A, majority (38.8%) of patients had pain score 6 followed by pain score 7 (18.4%) and pain score 5 (15.5%) during the insertion of pack, whereas in group B majority of patients had pain score 7 followed by pain score 8 (25.2%) and pain score 9 (20.4%) (fig-1). Average pain score was significantly higher in group B (*p*=0.000). (Table-1) This shows that the BIPP gauze pack is more painful packing procedure than Foleys catheter.

In the group A, 31 (30.1%) patients had rebleeding after pack removal, out of which 9 (8.7%) had significant bleeding requiring repacking. In 22 (21.4%) cases there was mild bleeding which settled without repacking. In

group B 22 (21.4%) patients had rebleeding after pack removal, out of which 5 (4.7%) had significant bleeding requiring repacking. This difference between the two groups was insignificant ($p=0.151$).

DISCUSSION

Posterior epistaxis is a life threatening emergency and it requires prompt and rapid intervention. Along with posterior nasal packing, assessment of the hemodynamic status of individual and rapid resuscitation with blood or fluids is of paramount importance. Posterior nasal packing can be done quickly and effectively with gauze e.g BIPP (Bismuth Iodoform Paraffin Paste) gauze or commercially available inflatable balloon packs. Commonly available Foleys catheter can be used effectively for the same reason.

In our present study, Foleys catheters were used for posterior nasal packing in Group A and compared with BIPP gauze packs in Group B in terms of discomfort (during pack insertion, while the pack was in situ and on pack removal) and efficacy in terms of rebleeding after pack removal. Mean pain experienced by cases in Group A was significantly higher as compared to Group B, as shown in table-1. Frequency of rebleeding after BIPP pack removal was less than that in Foleys catheter, but this difference in frequency was not significant ($p=0.151$). A similar study was carried out by Callejo FJG et al who compared pain and rebleeding in the two types of nasal packing for posterior epistaxis⁷. According to his study the mean pain score during the placement of pneumatic nasal pack was 6.7 as compared to 8.3 in cases of gauze pack, on visual analog scale. The mean score of pain at removal was 1.3 versus 2.1 in the pneumatic and gauze packs on VAS. This is comparable as in the present study, the gauze pack being more painful. However the frequency of rebleeding was much less with gauze nasal pack for

posterior epistaxis as compared to the inflatable posterior nasal pack i.e 2.1% against 10.5%. Garth et al also compared various nasal packing materials and found out the difference of pain and bleeding in them. According to his non-randomized prospective trial Telfa and Paraffin gauze caused less bleeding and were less painful than the both Merocel and BIPP pack⁸.

The causes of rebleeding after pack removal have been attributed to the nasal spurs and the loss of pressure exerted by pneumatic packs with the passage of time. Low found that the large septal spurs may be responsible for bleeding or especially rebleeding in cases of nasal packing⁹. The inflatable pneumatic pack including Foleys catheter tend to lose its pressure with time and this reduction of the pressure may be responsible for more chances of rebleeding.

CONCLUSION

It is concluded that posterior nasal packing with BIPP gauze pack is effective for controlling posterior epistaxis but causes more discomfort to the patients as compared to Foley's catheter packing.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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