

Commonly used nasal packs after septal surgery: A comparative study

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ABSTRACT

Objective: To compare fingerstall, vaseline gauze pack, and BIPP pack after septoplasty under local anaesthesia, in terms of ease of insertion, removal, haemostatic effect and cost effectiveness.

Study Design: Prospective comparative study.

Place and Duration of Study: Department of ENT, Combined Military Hospital Lahore. March 2007 to December 2009.

Patients and Methods: Seventy five patients undergoing septoplasty were enrolled into this randomized, prospective trial, with ages ranging from 17 to 32 years (mode= 18, median=24, mean= 21) with male to female ratio of 5:1. The patients were divided into three equal groups by simple random sampling. All the patients underwent septoplasty for deviated nasal septum under local anaesthesia. Group A was packed with glove fingerstall and group B with rolled vaseline gauze and group C with ribbon gauze impregnated with bismuth iodoform paraffin paste (BIPP). All procedures were performed by the same surgeon to standardize the procedure and results. The packs were removed after 24 hours of surgery. Packs were assessed in terms of pain on insertion, control of bleeding, ease of removal and cost effectiveness.

Statistical analysis was done using SPSS version 16 and P value < 0.05 was considered significant.

Results: In Group A, 4 (16%) and in group B, 5 (20%) and in group C, 9 (36%) had moderate to severe pain on pack insertion. Four patients (16%) in group A, 02 (8%) in group B, and 02 (8%) patients in group C, had profuse and/ or persistent bleeding requiring repacking with the same pack. Four patients (16%) in Group A and 6 (24%) in group B, and 11 (44%) in group C, had moderate to severe pain on pack removal.

Conclusion: There was no significant difference in the three types of packs with regards to pain on insertion, haemostatic effect and ease of removal. ($p>0.05$). Fingerstall and Vaseline gauze pack were more cost effective as compared to BIPP pack ($p < 0.05$).

Key words: Nasal packing, epistaxis, DNS, septoplasty.

INTRODUCTION

Nasal obstruction is one of the most common problems bringing a patient into a physician's office, and septal deviation is a frequent anatomical etiology. As a result, surgical correction of a septal deviation is one of the most common otolaryngological procedures, and is generally performed to improve the nasal patency and hence the quality of life [1]. History of nasal packing after nasal septal surgery goes back to 1847 in the time of Gustav Killian and Otto Tiger Freer [2] [3] More methodical SMR and nasal packing were started in 1882 by Eplrain Ingals in Chicago and Ferdinand Paterson in Germany. [4] Different types of nasal packs like, BIPP gels, Vaseline gauze, glove finger cot, meroel, and many more have been used with the common aim to stop bleeding, avoid development of haematoma and adhesions. Nasal surgery has progressed by leaps and bounds [5]. A survey of current literature on the topic of nasal

packing with the old time packs revealed only a circumscriptive number of publications with a high methodological value. Various packing materials used in the past have withstood the test of time and still hold good in present times. The goal for nasal packing is to place an intranasal device that applies constant local pressure to the nasal septum without significant morbidity and complications and which is well tolerated by the patient. The rationale for this study is to evaluate the effectiveness of old time nasal packing materials in terms of pain on insertion, haemostatic effect, ease of removal, cost effectiveness and to compare the commonly used nasal packs i.e. fingerstall, rolled vaseline gauze pack and BIPP pack after septoplasty.

PATIENTS AND METHODS

A prospective study was carried out in ENT department CMH Lahore, from March 2007 to

December 2009. Seventy five patients were selected for septoplasty for deviated nasal septum under local anaesthesia. The age ranged from 17 to 32 years (mode= 18, median=24, mean= 24) with male to female ratio of 5:1. The patients were randomized and divided into three equal groups (n=25).

All the patients having symptomatic septal deviations, whether congenital/developmental or traumatic were included in the study. The project was approved by the hospital Ethics Committee and informed consent was taken from all the participants

The patients with concurrent medical or surgical nasal pathology requiring intervention, the patients having a primary haematological or systemic illness affecting the coagulation profile or on anticoagulant therapy and with a previous history of septal surgery were excluded from the study.

Patients in Group A were packed with glove fingerstall lubricated with petroleum-based antibiotic ointment , patients in group B with rolled Vaseline gauze and in Group C with ribbon gauze impregnated with bismuth iodoform paraffin paste (BIPP).

The same surgeon performed the operations in this study to standardize the procedure and results. The packs were removed after 24 hours of surgery.

Parameters for comparison

Packs were assessed in terms of pain on insertion, control of bleeding, ease of removal, pain on removal and cost effectiveness.

Pain on insertion

This was measured using visual analogue score (VAS) and was rated from 1 – 4 (1 being no pain

and 4 being severe pain). Grades 3/4 and 4/4 were considered painful for statistical purposes.

Haemostatic effect

It was measured from 1 to 4 (1 being no significant bleeding and 4 being intractable bleeding requiring intervention). Good haemostatic effect was counted for 1/4 and 2/4.

Pain of removal

This was graded on VAS from 1 to 4 (1 being no consequential discomfort to 4 being protracted). Grade 1/4 and 2/4 were considered as easily removable packing.

Cost effectiveness

This was evaluated by calculating the mean expenditure of packing material used.

The statistical analysis was carried out using SPSS ver 16. . For categorical variables, the chi-square test and for numerical data, one way ANOVA were applied, and a p value of less than 0.05 was considered significant.

RESULTS

Each method of nasal packing was well tolerated by the patients. In Group A, 4 (16%) and in group B, 5 (20%) and in group C, 9 (36%) had moderate to severe pain on pack insertion ($X^2(2)=4.370, p=.112$) Fig I. Four patients (16%) in group A, 02 (8%) in group B, and 02 (8%) patients in group C, had profuse and/ or persistent bleeding requiring repacking with the same pack ($X^2(2)=1.119, p=.571$) Fig II. Four patients (16%) In Group A and 6 (24%) in group B, and 11 (44%) in group C, had moderate to severe pain on pack removal ($X^2(2)=5.159, p=.076$) Fig III.

Table I: Gross difference between the effects of packs

Group	Pain on insertion (>3/5)	Haemostatic effect (1/4,2/4)	Pain of removal (3/4, 4/4)	Cost effectiveness (Rs)per pack
Group A	4	21	4	21
Group B	5	23	6	55
Group C	10	23	11	78

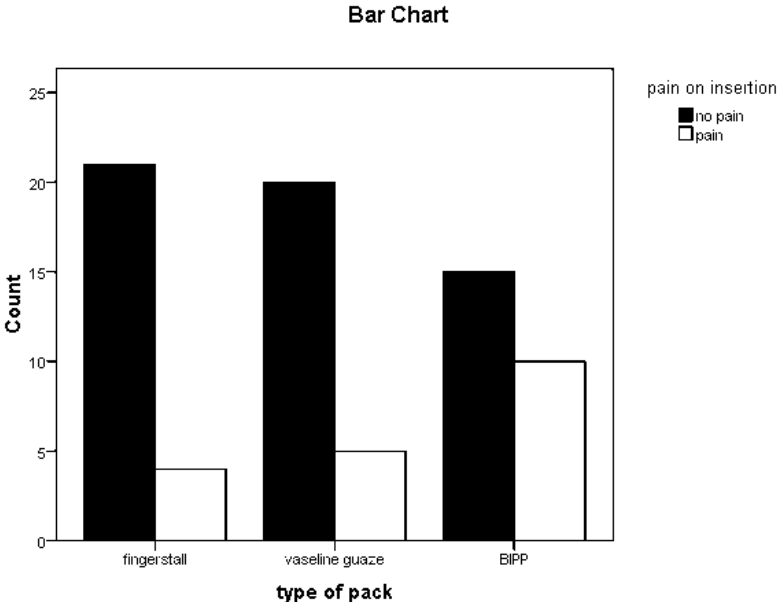


Fig-1 Pain on insertion

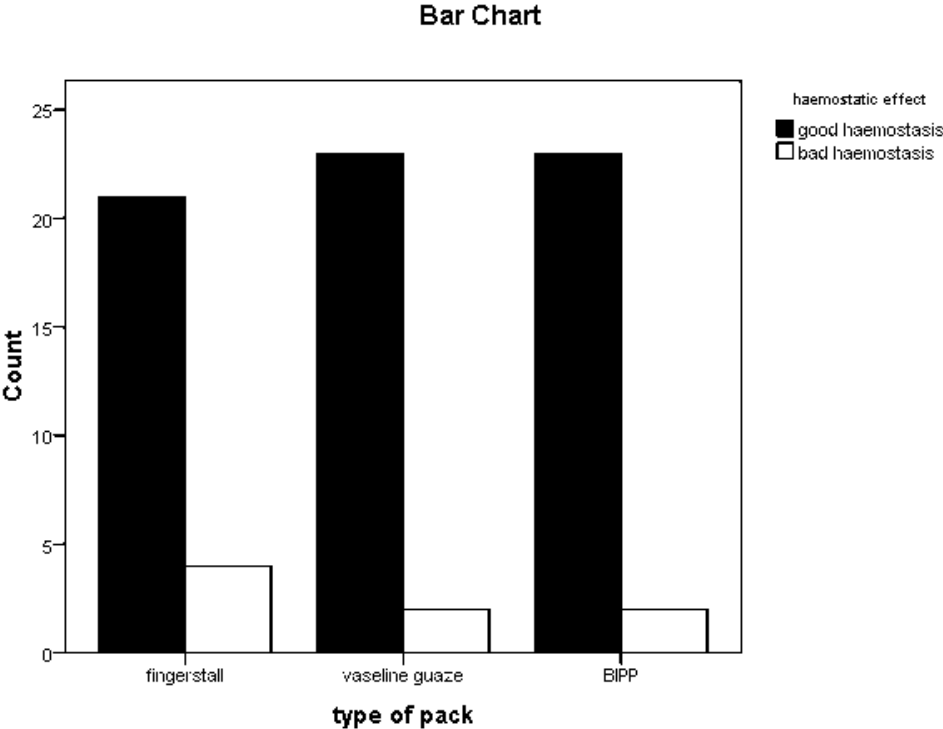


Fig-2 haemostatic effect

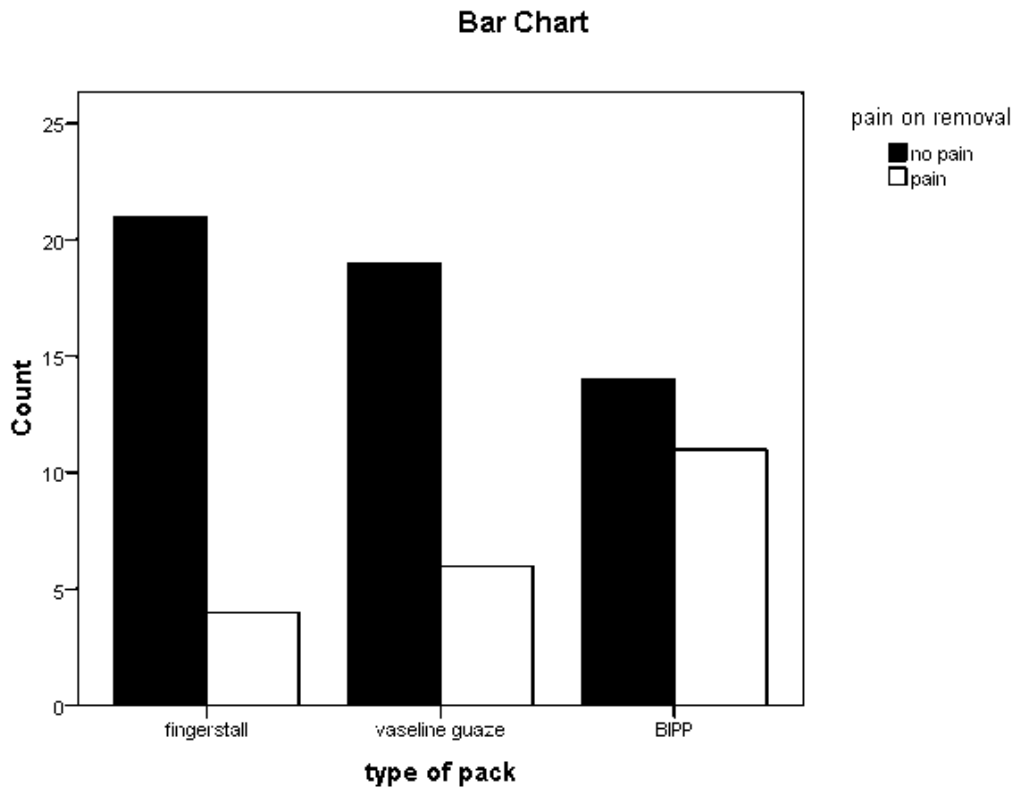


Fig-3 Pain on removal

Fingerstall, vaseline gauze pack and BIPP pack cost Rs. 25, Rs. 54 and Rs. 78 respectively. one-way ANOVA was conducted to compare the prices of fingerstall, Vaseline gauze and BIPP pack. There was a significant difference in the prices at the $p < 0.05$ level for the three types of packs. [F (2, 72) = 5.425E3, $p = 0.00$]. Post hoc comparisons using the Tukey HSD test indicated that the mean price for each type was significantly different at $p < 0.05$. (Fingerstall= M = 28.40, 95% CI(27.45, 29.35), (vaseline gauze= M = 56.80, 95% CI(55,58.02), (BIPP= M = 124.32, 95% CI(122.49,126.15). The comparison is seen in Table I.

DISCUSSION

The nose is a very vascular area of the body and is richly supplied with the somatic sensory nerves [6] and hence operative trauma is associated with pain, and profuse and persistent bleeding especially in the absence of proper preoperative, operative and postoperative measures. Submucous resection of the septum or SMR

performed for a deviated nasal septum causing nasal obstruction was the standard operation for the last many years [7] till the advent of septoplasty which is gradually replacing it. [8] Nasal surgery has progressed by leaps and bounds. However, conventional surgery still holds a place in certain problems of the nose. For any surgical procedure to survive, it should have consistently good and long lasting results, should be safe and easy to carry out and have minimum complications. The very fact that these conventional and standard operations have been done for so many years and are still being done today show that they have fulfilled the above mentioned criteria.

Otorhinolaryngologists all over the world have frequently been using nasal packing after nasal septal surgery. They are used to prevent the complications, maintain septal stability and improve the results of the surgery performed. The purpose of packing is to absorb any drainage produced by nasal tissue, and to support the mucoperichondrial flaps and cartilage. Most

patients experience significant discomfort after the surgery besides the use of number of new packing materials claimed to be much more superior than the older ones [9]. There are many reports concerning the complications related to nasal packing [10][11]. The choice of the nasal packing material is an important surgical outcome factor. An optimal pack should cause minimal tissue trauma and discomfort to patient, should have reasonable haemostatic effect and should be easy to insert and remove. Various packing materials have been used for nasal packing after septal surgery. Developing countries have limited financial resources to cater for the health needs of the people in order to provide even minimum health facilities. Rigorous economic approach is needed in which drug therapy is viewed in the light of cost effectiveness. There is little work done locally and internationally comparing these old time packs. Studies are available for new packing materials advocating their efficacy [12][13].

In a prospective study by Schoenberg, Robinson and Ryan in 1993, they commented on increased pain levels with BIPP pack in patients undergoing septal surgery. However, they compared this with the relatively new and expensive nasal pack. [14] In our study, fingerstall and vaseline gauze pack and BIPP pack were comparable in terms of ease of insertion, haemostatic effect and ease of removal. Fingerstall packings were also compared with other packs by Peter Illum, Luisa Grymer, Ole Hilberg and found them to be more patient friendly. [15] The cost effectiveness of Vaseline gauze packing was also supported by Awan, Ali and Hussain. [16]

Despite the increasingly common usage of the terms of cost-effectiveness analysis in the medical literature, clinicians have not necessarily understood the theory of cost-effectiveness techniques with the same zeal that they have embraced the vocabulary. In many cases, the terms cost, savings, and the methodologies of economic analysis are employed in ways that contradict an understanding of their technical meaning and theoretical framework. In our study, fingerstall and rolled Vaseline gauze packs were found to be cost effective on one hand and patient friendly on the other hand as well.

The sample size was not large enough to predict the exact outcome but the study gives an approach to consider the old time packs as well as many other surgical materials which are losing

their use because of development of new fancy materials which are much expensive as well as have not yet withstood the test of time.

CONCLUSION

Fingerstall and rolled vaseline gauze and BIPP packs are comparable in patient compliance for insertion, removal as well as their haemostatic effect. However, fingerstall and vaseline gauze pack are more cost effective than BIPP pack making it more acceptable in setups where economical restraints prevail.

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