

## ORIGINAL ARTICLE

# Comparison of Finger Glove and Ribbon Gauze Nasal Packing after Septal Surgery

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### ABSTRACT:

**Objective:** To compare the efficacy of finger glove and ribbon gauze as nasal packing material after septal surgery by assessing the two parameters of bleeding and pain.

**Materials and Methods:** This cross sectional comparative study was conducted at ENT Department of PNS SHIFA Hospital, Karachi, over a period of one and a half years from August 2014 to January 2016. A total of 100 patients were included in this study. Inclusion criterion was all patients undergoing septal surgery requiring post-operative nasal packing. The right side of nose was packed with finger glove packing and left side of nose was packed with ribbon gauze in every patient. Pain and bleeding were assessed during 24 hour period of packing and on pack removal.

**Results:** Mean blood loss during the packing period and at the time of pack removal was 6.60 ml and 2.31 ml respectively on the finger glove side and 11.40ml and 7.47 ml respectively on the ribbon gauze side ( $p = 0.001$ ). Similarly mean pain score on VAS during the packing period and at the time of removal was 2.62 and 3.65 respectively on the finger glove side while 3.37 and 4.41 on the ribbon gauze side ( $p = 0.001$ ). No complication from nasal packing was seen on either side.

**Conclusion:** Finger glove is a better choice for packing after septal surgery than ribbon gauze because of less bleeding and pain.

**Keywords:** Nasal packing, Septal Surgery, Packing material, Epistaxis, Pain

### INTRODUCTION:

Septoplasty and sub-mucous resection are commonly performed procedures for treatment of deviated nasal septum<sup>1,2,3</sup>. Septal surgery may lead to many complications like bleeding from nose, septal hematoma and nasal adhesions. To prevent these complications, nose is routinely packed after surgery<sup>4,5,6</sup>. Many different types of materials have been used for the purpose of nasal packing after septal surgery which includes both absorbable and non-absorbable materials. Different absorbable nasal packing materials are porcine gelatin<sup>7</sup>, topical anti-fibrinolytic agent<sup>8</sup> and hyaluronic acid<sup>9</sup>. Non-absorbable nasal packing materials are more commonly used in our country because of their reduced cost. Nasal tampons are often chosen for packing after nasal surgery because of ease of use and clinical

efficacy<sup>10</sup>.

Nasal packing is associated with several disadvantages like discomfort to the patient during packing and at the time of removal, headache, sinusitis, decreased sleep quality, respiratory problems, decreased oxygen saturation and toxic shock syndrome<sup>11,12</sup>. In view of these complications it is suggested by many surgeons to avoid nasal packing after septoplasty<sup>13,14</sup>. The two most common types of non-absorbable nasal packing materials used in our country are finger glove and ribbon gauze soaked in antiseptic ointment. Their use is dependent upon the surgeon's choice. No scientific comparative studies are available which can show which type of packing material is superior.

The objective of the present study is to find out the more suitable non absorbable nasal packing material among the finger glove and ribbon gauze which causes less problem to the patient both during packing and at the time of pack removal.

### MATERIALS AND METHODS:

This study was conducted over a period of one and a half years from August 2014 to January 2016 at the Department of ENT, PNS SHIFA Hospital, Karachi following approval by hospital ethics committee. A total number of 100 patients undergoing septal surgery in our department were included in this study. Sampling technique was convenient and sequential sampling. Inclusion criterion was all cases of deviated nasal septum undergoing septal surgery who gave consent for inclusion in the study. Exclusion criteria from the study were as follows: patients not ready for giving consent, patients with history of hypertension or diabetes mellitus, patients with any history of bleeding or clotting disorder, patients whose platelet count, bleeding time (BT), clotting time (CT), prothrombin time (PT) or activated partial thromboplastin time (APTT) were deranged and patients who were allergic to any of these two packing materials.

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After complete history, clinical examinations and relevant investigations, patients were included in the study. Septal surgery in the form of sub-mucous resection or septoplasty was done under general anesthesia in all cases depending upon the nature of septal deviation. After surgery right side of the nose was packed with the conventional finger glove and left side of the nasal cavity was packed with ribbon gauze soaked with antiseptic ointment. Pack was removed routinely after 24 hours in all the cases.

Two parameters: bleeding and pain were selected for comparison on the two sides of nasal cavity during the first 24 hours after surgery and then at the time of removal of nasal pack. The bleeding during the first 24 hours was assessed by soakage of the pack and post nasal bleeding on oropharyngeal examination. Pain was assessed on visual analog scale (VAS) of 0 to 10. All the findings were recorded on a specially designed performa and the data recorded and analyzed on SPSS version 15. The p-value of < 0.05 was considered as significant while comparing bleeding and pain on both sides of nose.

**RESULTS:**

A total of 100 cases of septal surgery were included in this study after assessing the inclusion and exclusion criteria. There were 59 males (59%) and 41 females (41%) patients with male to female ratio of 1:1.44. The age range was from 12 years to 55 years with the mean age of 24.43 years (± 7.37). Figure 1 demonstrates the age group and gender distribution of patients in this study, where majority of patients were in the age group of 16 to 25 years (59 patients, 27 males and 32 females). There were 31 patients in the age group of 26 to 35 years (24 males and 7 females), 4 patients in 36 to 45 years (all males), 1 patient in 46 to 55 years (male) and 5 patients were below the age of 15 years (3 males and 2 females).

Figure 2a represents the amount of bleeding during the 24 hours of packing and at the time of removal of pack. Ninety nine percent of patients on the right side and 85% on the left side had mild bleeding of 0 to 10 ml during the first 24 hours. During pack removal, 94% of the patients had bleeding of 0 to 10 ml on the right side in contrast to 62% of the patients on the left. Figure 2b shows that there was significantly less bleeding during the first 24 hours and at the time of removal of the nasal pack on the right side as compared to the left side (p = 0.001). The mean amount of bleeding during the first 24 hours on the right side was 6.60 ml while on the left side was 11.40 ml (p = 0.001). Similarly bleeding at the time of removal of pack was significantly less on the right side as compared to the left side (2.31 ml on the right and 7.49 ml on the left side, p = 0.001). Figure 3a shows the severity of pain during the first 24 hours and at the time of pack removal. 48% of patients

on the right side and 20% of patients on the left side had mild pain (score 0 – 3 on VAS). 52% of the patients on right side and 76% of the patients on the left side had moderate pain during the first 24 hours of packing (score of 4-6 on VAS). No patient had severe pain on the right side and 4 patients on the left side had severe pain (score of 7-10 on VAS). Similarly, on pack removal, 91% of the patients had mild pain on right side and 59% on left side. Nine patients on right side and 41 on left side had moderate pain during the pack removal. Figure 3b clearly depicts that the mean pain score (on VAS of 0 to 10) was much less on the right side both during the first 24 hours and also at the time of removal of pack. It was 2.62 on the right side and 3.37 on the left side during the first 24 hours while it was 3.65 on right side and 4.41 on left side at the time of removal of pack (p = 0.001).

No pack related complication occurred on either side or no patient required re-hospitalization during the 4 weeks follow up period.

Figure: 1  
Age group and gender distribution (n = 100)

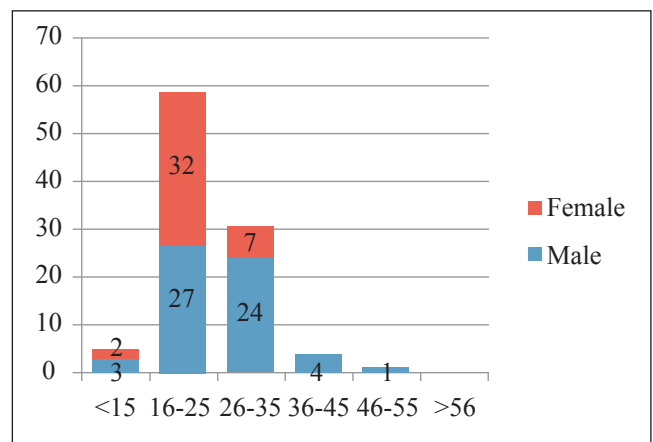


Figure: 2a  
The amount of bleeding (in milliliters) during the first 24 hours and at the time of removal of nasal pack (n = 100)

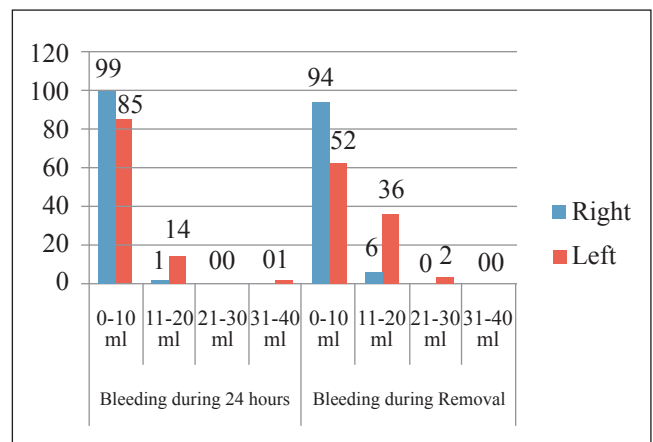


Figure: 2b  
The mean amount of bleeding (in milliliters) during the first 24 hours and at the time of removal of nasal pack (n = 100)

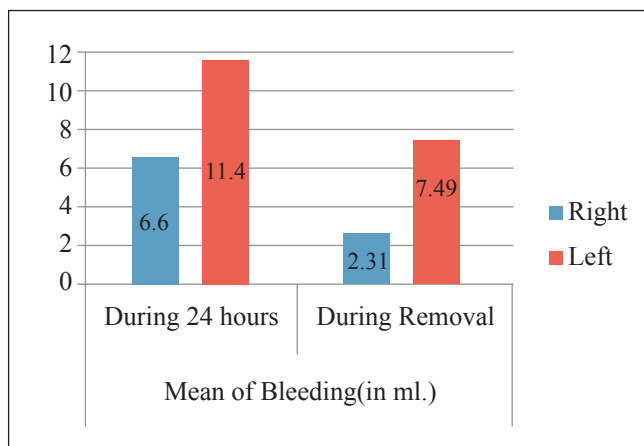


Figure: 3a  
The pain score during the first 24 hours and at the time of removal of nasal pack (n = 100) Mild = 0-3, Moderate = 4-6 and Severe = 7-10 on VAS

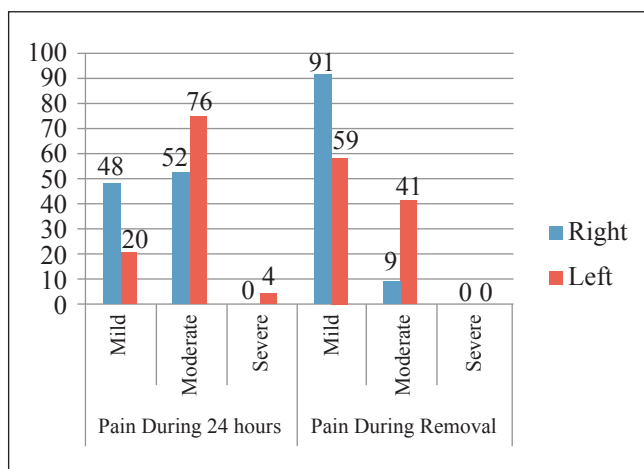
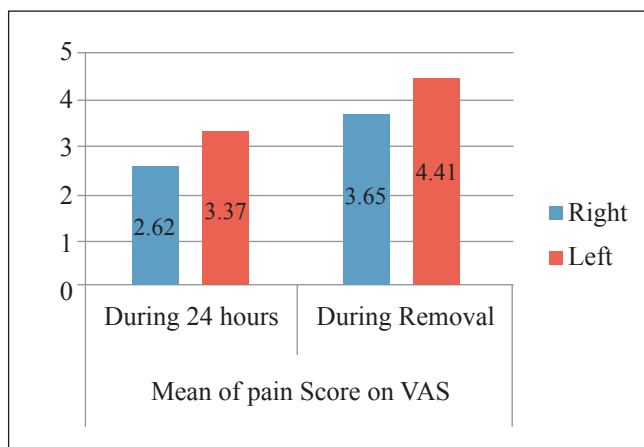


Figure: 3b  
The mean pain score on VAS during the first 24 hours and at the time of removal of nasal pack (n = 100)



**DISCUSSION:**

The main purpose of nasal packing after septal surgery is to secure hemostasis. Nasal packing is considerably distressing to patients as it causes significant pain and discomfort.<sup>15,16</sup> Many describe pack removal as the most painful experience of their life. To overcome this problem many absorbable materials have been tried but concerns have been expressed regarding bio-compatibility and cost effectiveness.<sup>17</sup> Pneumatic bag is a recently introduced non-absorbable nasal packing material.<sup>18</sup> The volume of bag can be regulated during packing and can be deflated before removal. Research in this area continues to address this issue by modifying the nature of packing material and inventing new materials. Another modification is the use of aluminum foil prepared from the cover of suture material, as septal splint applied with the conventional ribbon gauze<sup>19</sup>. Many surgeons have tried quilting sutures on the nasal septum after septal surgery so as to avoid nasal packing.<sup>14,20,21</sup> Although a number of studies have compared the efficacy of different absorbable and non-absorbable nasal packing materials, there is conflicting evidence regarding their effectiveness.<sup>9,22,23</sup>

Despite a large variety of packing materials available, the conventional ribbon gauze packing is still widely used for packing after nasal surgery or controlling epistaxis. The problem of ribbon gauze packing occurs at pack removal, when it causes mucosal abrasions resulting in bleeding and severe pain. The other conventional nasal packing is the use of latex surgical glove packed with cotton role or gauze piece. The main advantage of this packing is that it is easier to insert and easier to remove because of its smooth non traumatic surface. It causes fewer mucosal abrasions resulting in less bleeding and pain on removal.

The time duration of nasal packing after surgery is also very fundamental.<sup>24</sup> Usually the nasal pack is removed after 24 to 48 hours. Many surgeons now prefer nasal packing only for 24 hours after septal surgery.<sup>25</sup> In our study we removed the pack after 24 hours in all patients and re-packing because of bleeding was not required in any case.

Comparing bleeding on both sides that is finger glove with ribbon gauze, it is evidently less on the right side, both during the packing period as well as at the time of removal of the pack. The mean of bleeding in all the patients on the right side is 6.6 ml as compared to the left side where it is 11.4 ml during the first 24 hours of packing (p value = 0.001). At the time of removal again the mean of bleeding is 2.31 ml as compared to 7.49 ml. This clearly shows that removal of pack causes more bleeding when ribbon gauze is used and which is its main disadvantage. Removal of ribbon gauze is more painful because it is packed in layers and thus a surface area of nasal mucosa is in contact in contrast to finger glove pack which is removed in toto. Our study also shows that removal of pack is less painful in finger glove than in ribbon gauze with the mean pain score of 2.62 as compared to 3.37 on visual analog score of 0 to 10. Only 9 patients had moderate pain on right side as

compared to 41 patients who had moderate pain on left side at the time of pack removal. Ribbon gauze also triggered more pain during the packing period than finger glove where the mean pain score was 3.65 on right side in comparison with 4.41 on left side on VAS. 76 patients had moderate pain and 4 had severe pain on the left side as compared to 52 who had moderate and none had severe pain on right side during the period of packing.

No complication occurred on any side related with nasal packing and no patient required re-admission due to any problem of nasal packing. Thus we can conclude that complication rate is comparable in both types of nasal packing.

### CONCLUSION:

Finger glove is a better choice for packing after septal surgery than ribbon gauze because of less bleeding and pain. Hence, finger glove packs are recommended in septoplasty if the surgeon opts for non-absorbable nasal packing material.

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**Conflict of Interest:** None.

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