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A comparison of packing materials used in nasal surgery

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Abstract
A prospective study was performed to compare Telfa,® paraffin gauze, Merocel® and BIPP used post-operatively following septal or turbinate surgery. Packs were assessed in terms of patient comfort, control of bleeding and ease of removal. There was little to choose between the packs while they were *in situ* and there was no significant difference in ease of removal. On removal the Telfa® and paraffin gauze were associated with less discomfort and less bleeding than BIPP or Merocel® ($p<0.05$).

Key words: Nose, surgery; Occlusive dressings; Tampons

Introduction

Post-operative nasal packing is used almost universally following routine nasal surgery, yet is often considered by the patient to be one of the most unpleasant aspects of their operation. In recent years the variety of materials used to pack the nose has widened greatly, though the type of pack preferred by an individual surgeon is often determined by inherited practice or habit.

This prospective, randomized study compares four commonly used packing materials in terms of patient comfort, ease of removal and effectiveness at controlling haemorrhage.

Materials and methods

Forty-eight consecutive consenting patients undergoing elective septal and turbinate surgery were entered into the trial. All operations were performed under general anaesthetic after preparation of the nasal mucosa with 10 per cent cocaine and adrenaline paste. Whenever possible operations were performed by the authors for consistency of technique. Bilateral Shah nasal splints were inserted in all cases and patients were allocated their nasal packs. Packing was randomized, each side of the nose receiving a different material as shown in Figure 1. Each material was used on 24 occasions, distributed equally between both sides of the nose and used in combination with each of the other packs an equal number of times.

The packs were made as follows: (1) Telfa®–made from a 10 × 5 cm piece of Telfa® folded longitudinally; (2) BIPP impregnated 2.5 cm ribbon gauze; (3) paraffin gauze (Jellonet)–folded to make a 10 cm 'sausage'; (4) Merocel® (3.5 cm nasal tampon)–coated in white soft paraffin before insertion and hydrated with Normal saline.

Patients were looked after by the same nursing team to minimize observer variations and the packs were removed after 16 to 23 hours.

The following aspects of each pack was assessed using 10 cm visual analogue scores.

(A) Assessment by the patient for:
  (1) discomfort while the pack was *in situ* and
  (2) discomfort experienced during pack removal.

(B) Assessment by the staff for:
  (3) bleeding occurring with the pack *in situ*,
  (4) bleeding occurring on pack removal and
  (5) the ease with which the pack was removed.

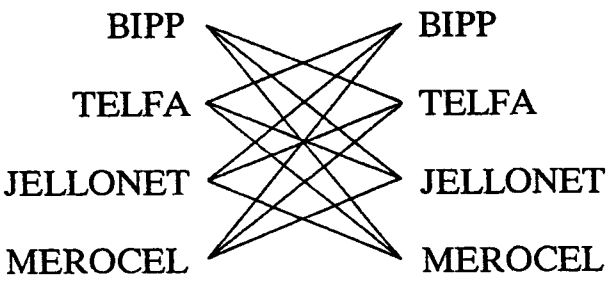

FIG. 1
Diagram showing the combinations of nasal packing used.

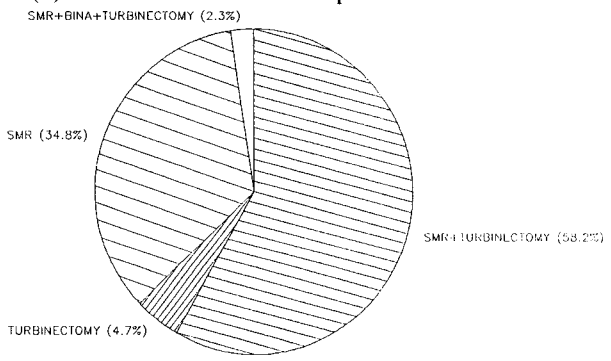

FIG. 2
Details of operations performed.

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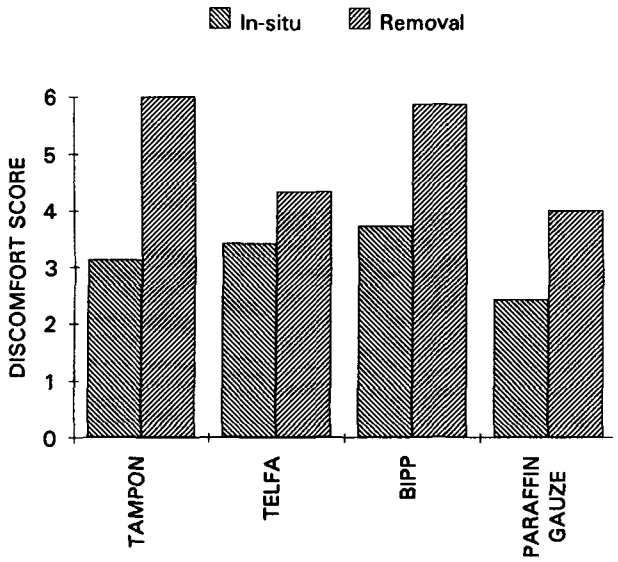

FIG. 3

The discomfort scores with the packs *in situ* (NS) and on removal of the packing ($p<0.05$).

Data from the visual analogue scores was analysed and significance determined using analysis of variance.

Results

Of 48 patients undergoing surgery, 35 (73 per cent) were male and 13 (27 per cent) female. Details of the surgery are shown in Figure 2. No patients bled sufficiently post-operatively to require repacking of the nose and all completed the trial.

Discomfort (Figure 3)

While the packs were *in situ* there was no statistically significant difference in the discomfort caused by the packs. The difference in discomfort on removal of the packs was significant, ranging from a score of 4.0 with paraffin gauze to 6.0 with the Merocel® ($p<0.05$).

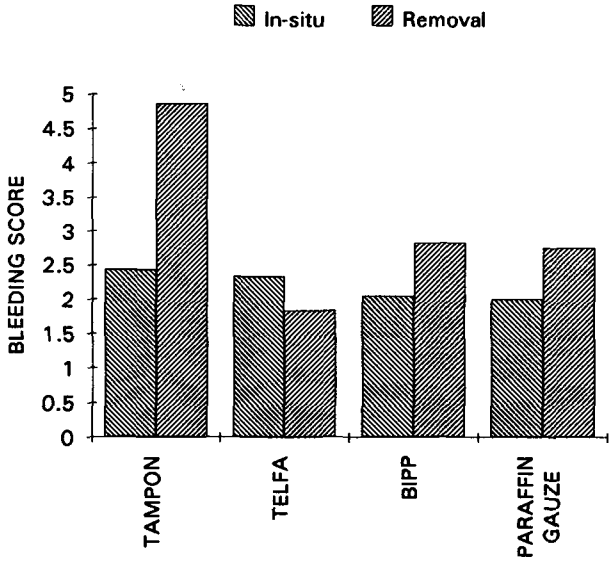

FIG. 4

Bleeding scores with the packs *in situ* (NS) and on removal ($p<0.05$).

Bleeding (Figure 4)

There was no significant difference in bleeding while the packs were *in situ* but on removal the difference was significant ($p<0.05$), the Merocel® often being associated with a brisk bleed. No patients required repacking of the nose.

Difficulty in removing (Figure 5)

It was the impression of the staff that the Merocel® tended to stick in the nose and be more difficult to remove while the paraffin gauze and Telfa® slid more easily from the nose. Although the results in Figure 5 would suggest this is so, they are not statistically significant (NS).

Discussion

These results would suggest that there is little to choose between these four types of pack while they remain *in situ* in the nose. It is when the packs are removed that a difference becomes apparent, with the Telfa® and paraffin gauze being superior in terms of both patient comfort and bleeding. These findings confirm the clinical impression that Telfa® or paraffin gauze will tend to slide from the nose while Merocel® or BIPP have a tendency to adhere to mucosa or denuded surfaces.

Illum *et al.* (1992) compared Merocel,® finger stall packs and hydrocortisone–terramycine gauze and interestingly found no significant difference in the discomfort on removal. In this study the Merocel® and the gauze packs were also found to become adherent to the nasal mucosa making them more difficult to remove and resulting in more bleeding than the finger stalls. Watson *et al.* (1989) evaluated balloons, paraffin gauze and glove fingers, finding more post-operative discomfort with paraffin gauze which was attributed to mucosal abrasions.

To overcome the problems of Merocel® surgical sponge adhering to the mucosa Leek (1985) advocated wrapping saline-soaked Gel-film around it before insertion into the nose and hydration. This enabled the plug to slip out easily so that it could even be done by the patient at home.

There have been many complications of nasal packing described in the literature (Cvetnic *et al.*, 1976; Fairbanks,

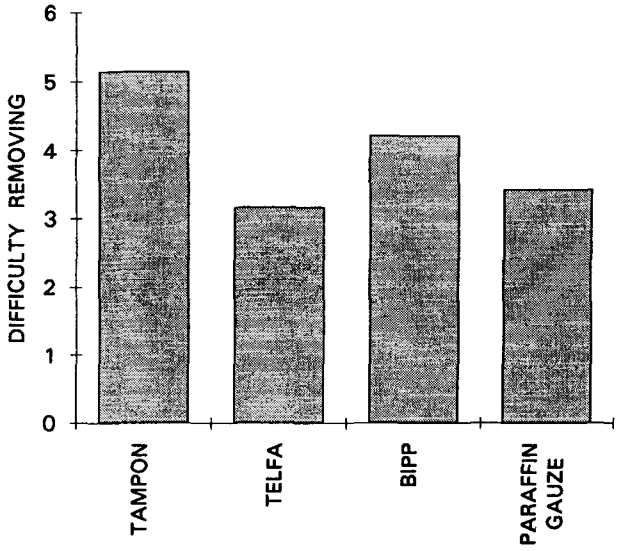

FIG. 5

Difficulty in removing the nasal packs (NS).

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1986; de Vries and van der Baan, 1989) which need not be discussed here, other than those specifically concerning the materials in this trial. It is worth noting the significant incidence of septal perforation with Merocel® in the study by Illum *et al.* (1992) where three perforations occurred in 26 patients. Paraffin granulomata are occasionally recorded following packing with paraffin gauze (Nunez and Martin, 1991) though this is rarely a major problem. BIPP is occasionally associated with sensitivity, though this is not common in the context of nasal packing.

Some authors (Nunez and Martin, 1991; Samad *et al.*, 1992) feel that there is no need for packing post-operatively on the grounds that it does not influence results and is unpleasant for the patient. Although this may be the case, most surgeons in the UK use nasal packs, especially following turbinate surgery. It could be argued that the pack at least controls the haemorrhage until the patient has recovered from the general anaesthetic and can protect his airway.

Conclusion

For routine packing following nasal surgery this study suggests that Telfa® or paraffin gauze are the most acceptable of the materials assessed. The former is the authors' choice as it is effective and free from the potential complication of granuloma formation.

Acknowledgement

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