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A prospective trial of Merocel® packs

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SUMMARY

A prospective trial, comparing Merocel® nasal packs and glove finger packs is reported. No statistically significant difference was found in symptoms of nasal obstruction or discomfort, findings of nasal crusting or adhesions, or postoperative bleeding, between nostrils packed with Merocel packs or those packed with glove fingers.

A PROSPECTIVE TRIAL OF MEROCEL PACKS

Nasal packing is known to be associated with adverse consequences in some patients. Certain forms of packing (pneumatic balloons) are associated with an increased incidence of adhesions and postoperative crusting (Watson et al., 1989). In addition nasal packing can precipitate hypoxia and obstructive sleep apnea, particularly in older patients (Wetmore et al., 1988); Eustachian tube dysfunction (Finkelstein et al., 1988); toxic shock syndrome (Toback et al., 1983); and other problems (Fairbanks, 1986).

The Merocel pack is thought to avoid some of these hazards (Doyle, 1986; Breda, 1987). These packs or tampons are constructed from a foam polymer of hydroxylated polyvinyl acetate. When the packs are moistened with secretions or aqueous solutions they swell up to about three times their original size, securing haemostasis. They are supplied in three sizes, with or without a central airway. This tube is intended to permit some nasal respiration while the pack is in situ. We thought it would be of benefit to study the effects of this packing material on the postoperative outcomes of patients undergoing nasal surgery.

PATIENTS, MATERIALS AND METHODS

40 patients undergoing nasal surgery were entered into the trial. The operations performed are shown in Table 1.

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Table 1. Operations performed (N = 40).

septoplasty	7	turbinate reduction	1
submucous resection	12	rhinoplasty	2
submucous resection and turbinate reduction	7	polypectomy	7
revision submucous resection	1	fractured nose	2
		division of adhesions	1

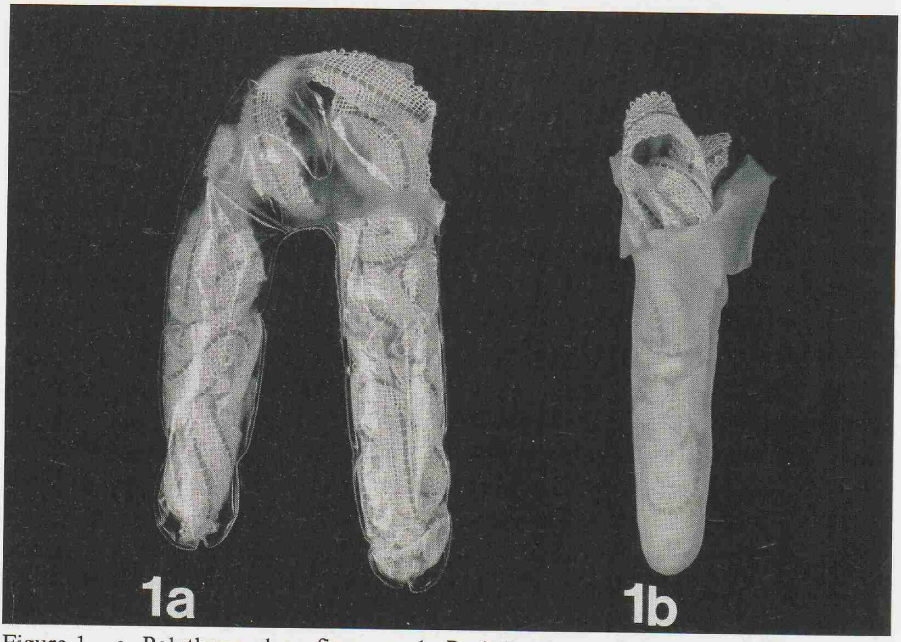

Figure 1. a. Polythene glove finger pack. Pack has been made from two fingers of a polythene glove to reduce risk of aspiration. b. surgical glove finger pack as used in the study.

A glove finger pack (Figure 1) and a Merocel pack (Figure 2) were inserted into right or left nostrils, sides being chosen at random, at the end of each operation. The Merocel pack was inserted dry in each case and then moistened with Vibrocil® nasal drops to cause them to swell up securing haemostasis. Splints were inserted wherever appropriate as we wished to examine the use of Merocel packs within the context of our normal surgical practice. These were always inserted bilaterally, and so were not considered to introduce bias into the study. Packs were kept moist overnight with Vibrocil drops applied six hourly, and were moistened just before removal.

Outcomes were assessed by a combination of patient symptoms and findings on examination. Subjects were asked to give their subjective impressions of comfort and discomfort. Comfort was scored as "comfortable" or "uncomfortable". Surgeons assessed the noses for adhesions and crusting. Assessments were made

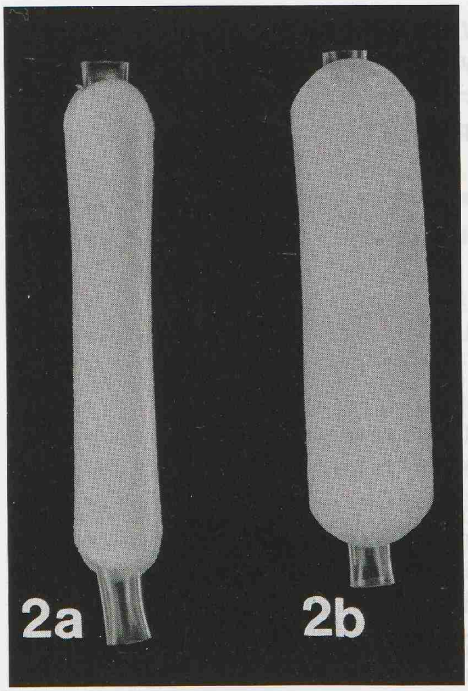

Figure 2.
a. Dry Merocel pack (with airway).
b. Merocel pack after moistening with water, showing increase in size.

Table 2. Subjective comfort.

	24 hours		7 days		42 days	
	Merocel	GF	Merocel	GF	Merocel	GF
comfort	11	15	31	30	39	38
discomfort	29	25	9	10	1	2

Table 3. Nasal crusting.

	24 hours		7 days		42 days	
	Merocel	GF	Merocel	GF	Merocel	GF
crusting+debris	9	10	10	12	3	6
clean	31	30	30	28	37	34

immediately after pack removal (24 hours), between seven and ten days, and at six weeks.

RESULTS

A comparison of the relative incidence of postoperative comfort, crusting and complications was made between nostrils packed with Merocel packing or glove finger packing after nasal surgery. The results of the comparisons are shown in Tables 2 and 3. There is no difference ($p<0.10$) in nasal discomfort between

Merocel and glove finger packing. There is no difference ($p < 0.10$) in occurrence of nasal crusting between Merocel and glove finger packing.
No adhesions were found in any cases, however bilateral silastic splints were placed in all cases where both nasal septum and lateral nasal wall were operated on simultaneously.
No patient in either group required repacking because of postoperative bleeding through the pack, or after pack removal.

DISCUSSION AND CONCLUSIONS

The slight increase in postoperative crusting in the glove finger group may be due to the use of starch containing gloves to make the packs rather than polythene (Watson et al., 1989) or Biogel® gloves.
Initially we found the Merocel packs difficult to remove, but discussions with other surgeons resolved this problem. It is important to leave approximately 1 cm of pack protruding from the anterior nares to facilitate its removal. As mentioned in the Materials section the packs were kept moist with Vibrocil drops, to facilitate removal.
The advantages and disadvantages of Merocel packs and glove finger packs are listed in Tables 4 and 5. Merocel packs showed no statistically significant improvement in the outcome measures studied, compared with glove finger packs.
It would be of interest to study the comfort of these packs while they were still in place in the nose, however the design of our study made examination of the perceptions of overall comfort, interference with sleep, difficulty of removal, and nasal respiration impossible. A study focussing on the benefits of Merocel packs in the early postoperative care would be of value.

Table 4. Advantages and disadvantages of Merocel packs.

advantages	disadvantages
easier insertion	more difficult to remove
reduced risk of toxic shock	more expensive (£ 9.00 UK)
decreased risk of aspiration	necessity for moistening overnight
adequate controll of bleeding	unequal pressure on nasal septum
reduced risk of aspiration?	
nasal respiration permitted	

Table 5. Advantages and disadvantages of glove finger packs.

advantages	disadvantages
easy to remove	difficult to insert
cheap (approx £ 0.50 UK)	unequal pressure on septum
reduced risk of aspiration if used bilateraly	risk of aspiration if used unilaterally, see text and illustration
adequate control of bleeding	
reduced incidence of crusting and adhesions (Watson et al. 1989)	nasal respiration not permitted

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