

## Short communication

# Wound dressings for day surgery — a comparison of a conventional dressing (Mepore) with hydrocolloid (Granuflex®)

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An extra thin hydrocolloid wound dressing (Granuflex®) was compared to a conventional dry dressing (Mepore) after intermediate and minor day surgical procedures. There was no difference between the two in dressing change frequency or outcome for hernia and varicose vein surgery. Minor surgery patients had significantly less dressing changes, and more patients in both classes were able to bath without disturbing the dressing when Granuflex was used. The hydrocolloid is significantly more expensive than the conventional dressing, but its other advantages may balance this in the day surgery context.

Key words: Bandages, occlusive dressings, ambulatory surgery.

Wound dressings on inpatients are managed by nursing staff with considerable expertise, much folklore, and often strongly held views on wound management. The day surgery patient leaves the unit with a dressing in situ, but the appropriateness of the dressing is often ill-considered, and instructions for redressing are frequently absent. General practitioners, district nurses and accident and emergency departments may assist, but all too often the patient returns after 7-10 days for suture removal with a soiled and unpleasant dressing scarcely adherent to the wound site.

Hydrocolloid dressings require less frequent changing than conventional dry dressings, and permit bathing or showering as they are completely occlusive. Their suitability for day surgery was evaluated in this study.

### Patients and methods

Eighty-three patients undergoing hernia, varicose vein, and minor general surgical procedures (Table 1) were randomized to receive a conventional self-adhesive wound dressing (Mepore, Molnlycke) or a hydrocolloid dressing (Granuflex® extra thin, Convatec). A written information sheet was provided, and nursing staff recorded verbal consent to take part. Patients were provided with spare dressings of the same material, and

**Table 1.** Types of surgical procedure carried out on patients in study group

Procedure	Mepore	Granuflex®
Hernia	11	11
Varicose veins	12	11
Breast lump	5	2
Skin lesions	13	18

asked to complete a diary card recording the timing and reasons for any dressing change. They returned to the day unit on the seventh postoperative day for evaluation of the wound, and suture removal if appropriate. Patients undergoing hernia and varicose vein surgery had subcuticular absorbable skin sutures (Dexon, Davis & Geck) which were not removed. The diary card also offered the opportunity to indicate whether the dressing used was 'very comfortable', 'acceptable' or 'uncomfortable'. Nurses enquired whether or not the patient had actually bathed, and whether or not a dressing change was necessary afterwards.

### Results

There was no significant difference in the number of dressing changes between the two groups of patients undergoing intermediate surgery (Mepore mean 0.82, SD 1.01; Granuflex mean 0.41 SD 0.80), but the frequency of dressing changes was reduced in the minor surgery group. Patients with Mepore dressings had a mean 1.75 changes (SD 1.34) and Granuflex dressed patients 0.78 (SD 1.11). This was statistically significant ( $U = 76$ ,  $z = -2.45$ ,  $P < 0.05$  Mann Whitney U test). One

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**Table 2.** Comparative costs and sizes of Mepore vs Granuflex® dressings

Dressing	Size 1	Size 2	Size 3
Mepore	6 × 7 cm £0.22	9 × 10 cm £0.17	9 × 20 cm £0.32
Granuflex	7.5 × 7.5 cm £1.01	10 × 10 cm £1.25	5 × 20 cm £1.38

patient in each group had an operation on the hand, and these two were omitted in calculating the means, as the number of dressing changes ( $n = 4$ ,  $n = 6$ ) was considerably greater than for other sites.

No patient having intermediate surgery actually bathed in the first seven days in the Mepore group, compared to eight in the Granuflex group. Five of the Mepore minor surgery patients bathed, compared to 13 of the Granuflex group. Two out of five patients had to change a Mepore dressing after bathing due to discomfort or loss of adherence, compared to four of the 21 using Granuflex.

There was no difference in the incidence of bruised or indurated wounds between the groups (Mepore 8, Granuflex 10), but three patients had moist macerated and unsatisfactory wounds when a Granuflex dressing was removed on the seventh day for review.

Twenty-two of the 33 patients in the Granuflex group who indicated their opinion of the dressing considered it to be 'very comfortable', and four 'uncomfortable'. Thirteen patients considered Mepore 'very comfortable', thirteen 'acceptable' and one 'uncomfortable'.

Comparative costs of the sizes of dressing used are shown in Table 2.

## Discussion

The principal functions of a wound dressing have been discussed by Leaper<sup>1</sup> and others<sup>2</sup>. The most important of these for a clean, primarily closed surgical wound are physical protection of the wound, absorbency to remove any exudate, prevention of secondary infection and maintenance of a suitable environment to promote healing. In addition, a dressing serves to shield the patient from any psychological anxiety about the appearance of the wound<sup>3</sup>, and must be comfortable, inexpensive, and be removable without pain or damage to the healing scar.

Dressings after primary wound closure serve to absorb any exudate occurring in the first few hours, and to physically protect the wound from trauma. The relative merits of allowing the wound to dry with scab formation, against an occlusive dressing maintaining a moist

environment to promote healing, are unproven. Either should prevent secondary infection, and this is confirmed by the absence of wound infection in this study.

A dry dressing that becomes adherent to the wound has the capacity to damage it during removal, and this problem may be increased if frequent dressing changes are required. The Mepore dressing was significantly less expensive than the comparable-sized Granuflex, but more frequent dressing changes, and assistance from general practitioners, community nurses and casualty departments with such dressing changes may completely negate this benefit.

Hydrocolloid dressings combine the merit of complete occlusion to prevent secondary damage or infection of the wound, with the capacity to remove exudate. Wound exudate and heat are retained, and both have the capacity to promote wound healing<sup>4,5</sup>. Low oxygen tension and a low PH may stimulate angiogenesis and accelerate epithelial growth<sup>6</sup>.

Patients liked the Granuflex dressing and significantly more were able to bath normally without the need for a dressing change ( $X = 7.98$ ,  $P < 0.01$ ). The development of a macerated wound in our three patients could have been prevented by reducing the period of occlusive dressing, and 48–72 hours is probably adequate for most wounds.

## Conclusion

Granuflex hydrocolloid compared favourably with Mepore adhesive surgical dressings in the day surgery context. The greater cost of Granuflex is balanced by decreased need for dressing changes, improved ability to bath normally, and patient satisfaction.

## References

- 1 Leaper DJ. Surgical factors influencing infection. In Taylor E ed. *Infection in surgical practice*. Oxford: Oxford University Press 1992; 18–27
- 2 Turner TD. Recent advances in wound management products. In Turner TD, Schmidt, RJ, Harding, KG eds. *Advances in wound management*. Chichester: Wiley, 1986; 3–6
- 3 Capperauld I, Bucknall TE. Sutures and dressings. In Bucknall TE, Ellis H eds. *Wound healing for surgeons*. Eastbourne: Bailliere Tindall 1984; 89–93
- 4 Hohn DC, Ponce B, Burton RW, Hunt TK. Antimicrobial systems of the surgical wound. *Am J Surg* 1977; **133**: 597–603
- 5 Leaper DJ, Brennan SS, Simpson RA, Foster ME. Experimental infection and hydrogel dressings. *J Hosp Infect* 1984; **5**(suppl A): 69–73
- 6 Phipps A. Skin Healing. *Problems in general surgery: wound healing*. 1989; **6**: 235–48