

## THE USE OF LYOFOAM AS A DRESSING FOR SPLIT SKIN GRAFT DONOR SITES

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### SUMMARY

*Experiences with LYOFOAM (Polyurethane Foam Sheets) as a dressing for split skin graft donor sites have been described. Complete absence of pain and discomfort post-operatively with LYOFOAM gives it a distinct edge over the conventional dressings.*

The conventional method of doing dressings of the donor areas from where split thickness skin graft has been obtained by using paraffin gauze, cotton wool pads and bandages is widely practiced. However the frequent complaint of pain at the donor site on slightest movement post-operatively necessitated the search for some other dressing material.

The use of polyurethane in the form of semipermeable membrane as a dressing for split skin graft donor sites was first described by James and Watson in 1975 and is being widely used in Western medical centres and also in India for the last few years. However the "LYOFOAM" is an opaque Polyurethane sheet modified on one side to provide a smooth hydrophilic absorbent layer. The outer layer of the foam is hydrophobic and nonabsorbent. The smooth hydrophilic wound contact surface of LYOFOAM absorbs excess exudate and allows smooth epithelization.

### Material

This study was carried out on 50 patients admitted and treated in the Burns and Plastic Surgery Department of L. A. Hospital, Ahmedabad from November 1987 to May 1988. All these cases required split skin grafts to cover wounds of various aetiology.

### Method

The patients were randomly assigned to two groups of 25 each. Group A had their donor

sites covered with a conventional dressing made up of a single layer of paraffin gauze, cotton wool pads and bandages. Group B had their donor sites covered with LYOFOAM and bandages. The Lyofoam sheets are available in various sizes.

After removing the split skin grafts with dermatome, haemostasis was achieved with saline-adrenaline swabs. Dressing was done by conventional method in Group A cases. In Group B cases the donor area was covered with suitable sized LYOFOAM sheet keeping its smooth surface in contact with the donor area. The LYOFOAM sheet was retained by applying firm bandage. The dressing was inspected daily. In the event of soakage through the pads, the dressing was reinforced with additional pads. It is a well known fact that split skin graft donor sites heal in 8-15 days time depending on their thickness. Hence from 8th day onwards it was specifically seen if the dressing has become loose indicating the completion of the healing process.

The results were analysed subjectively for pain and discomfort and objectively for the rate

**Table**

No. of Patients	Days to heal							
	8	9	10	11	12	13	14	15
Group A	—	—	1	1	8	9	6	—
Group B	1	4	5	8	7	—	—	—

of healing, incidence of infection and the cost factor.

### Observations

*Pain* : All the patients of Group A complained of burning pain over the donor site. This pain was enhanced with even the slightest movement of the donor site. In contrast to this the patients of Group B reported complete absence of pain and discomfort over their donor sites. Because of absence of pain, the patients of Group B were ambulant very early post-operatively.

*Wound healing* : In Group A healing took place from 10 to 14 days whereas in Group B healing took place from 8th to 12th days. This indicates that the healing took place at a much faster rate in the patients of Group B.

*Infection* : There was no infection in any of the patient of either Group.

*Cost* : The cost of "LYOFOAM DRESSING" works out to be slightly higher initially as compared to the conventional dressing. But taking into consideration the frequent additions (and some times changes) to conventional dressing due to soakage, the cost of "LYOFOAM" dressing works out to be ultimately cheaper to the conventional dressing.

*Systemic Reaction* : We observed no local or systemic reactions to dressing in any of the patients in Group A and Group B.

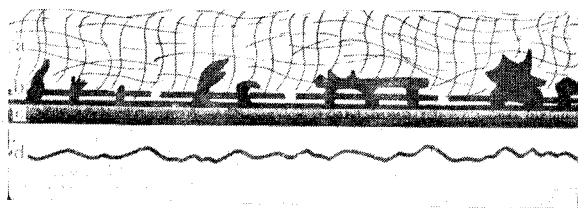


Fig. 1. Showing the conventional dressing.  
a-Dressing pad, b-Vaseline gauze, c-Blood clot  
d-Skin surface (Donor site)

### Discussion

The pain in the patients of Group A was because the serous exudate and blood from the wound permeated into the pores of the dressing and got dried there, thus making a complete scab-dressing complex as shown in Fig. 1. Hence any movement of the donor site caused this scab-dressing complex to shift, abrading the raw area causing pain and discomfort. In contrast to this in the patients of Group B, the smooth undersurface of Lyofoam does not allow the dressing and scab to become one complex (Fig. 2) and hence with movement of donor area, the dressing alone moves over the scab without causing pain.

The shift of scab-dressing complex in conventional dressing probably caused disruption of the delicate growing epithelium thereby delaying the healing process. Besides this, it is well known that the conventional dressing does not allow moisture retention and hence drying of the wound takes place which is not good for growing epithelium. In contrast to this the LYOFOAM, though permeable to oxygen, does not allow water evaporation to take place from the wound thereby keeping wound surface moist.

The LYOFOAM dressing works out to be a cheap dressing because it is one stage donor site dressing.

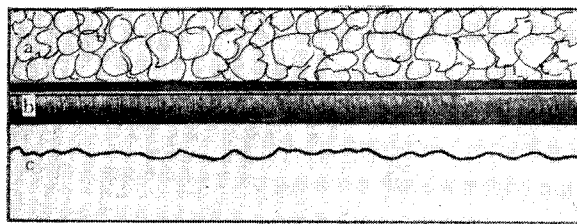


Fig. 2. Showing the Lyofoam dressing.  
a-Lyofoam, b-Blood clot  
c-Donor site

### Acknowledgement

We wish to thank MESSRS. MEDICELL, International Ltd. London who through their distributors in India MEDICELL (INDIA) Pvt. Ltd. made available to us enough stock of LYOFOAM for carrying out this study.

## REFERENCE

1. JAMES, J. H. AND WATSON, A. C. E. : The use of Opsite, a vapour permeable dressing on skin graft donor site. *British Journal of Plastic Surgery*, 1975; 28 : 107-110.

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