

Improving Outcomes of 2nd Degree Facial Burns Using Polymeric Membrane Dressing* Masks

Josef Haik MD, Oren Weissman MD, Stavarou Demetris MD, Department Of Plastic & Reconstructive Surgery, Sheba Medical Center, Israel

INTRODUCTION

In our practice we have used polymeric membrane dressing* (PMDs) on donor sites for more than 6 years and in more than 1,200 patients with good clinical results measured in terms of pain relief, rapid healing and good scarring in the long term follow up. In facial burns, early intervention is critical to reduce continuing burn injury and initiate the wound healing process. The formation of edema and inflammation develops quickly and is an ongoing source of pain for the burn patient. Traditionally in our practice, wet dressings activated by Ringer Solution are applied to the burn site for the first 24 hours followed by an ointment of chloramphenicol with 0.1% steroid which is applied on a daily basis.

RATIONALE

Multifunctional, drug-free, PMDs help to reduce the spread of inflammation, swelling and pain into surrounding areas of undamaged tissue. This helps to prevent further continuing burn injury and allows the body to initiate the healing process in the primary areas of damaged tissue. The dressings inhibit the nociceptor activity at the injury site.

CASE STUDY 1 Superficial face burn.



▲ DAY 1

Immediate application of polymeric membrane dressings. The dressings are applied in a mask fashion and secured with stretch gauze.

The patient had immediate pain relief within minutes after application of the polymeric membrane dressings.



▲ DAY 4

After the application of polymeric membrane dressings.

Note the rapid healing. The polymeric membrane dressings were able to manage the exudate and provide an optimal healing environment.



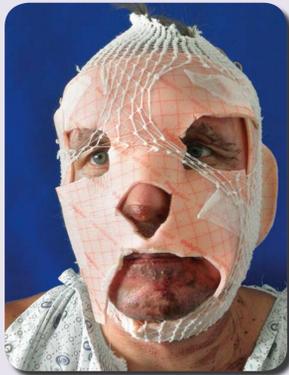
CASE STUDY 2 Second Degree Facial Flash Burn



▲ DAY 1

Second Degree Facial Flash Burn, extending to the neck and left ear. A debridement was performed and polymeric membrane dressings applied.

Polymeric membrane dressings covering the affected areas in a mask fashion and secured with stretch gauze. The polymeric membrane dressings decreased inflammation and swelling, while providing significant pain reduction.



▲ DAY 5

The Polymeric membrane dressings are able to manage the exudate, and continue to provide significant pain management.



▲ DAY 10

The patient is exhibiting excellent healing.



▲ DAY 15

Scant areas of burn wounds on the patient's ear. The patient's wounds are almost completely closed!



▲ DAY 17

The burn wounds on the patient's facial area and neck have closed. The polymeric membrane dressings have minimized scarring.

CASE STUDY 3 Deep facial burn extending to the neck



▲ DAY 9

After the initial application of polymeric membrane dressings, the burn wounds are rapidly healing.



◀ DAY 1

Start of polymeric membrane dressings, applied in pieces to create a mask of polymeric membrane dressings and secured with stretch gauze. The patient had dramatic pain reduction and the dressings were able to absorb the exudate.



METHODS

Applying our past experience, five facial burns, of both superficial and deep second degree, were treated with masks made, on site, from PMDs. These dressings have been shown to manage excess fluid and reduce edema while cleansing the wound and decreasing or eliminating wound pain. The dressings were applied within one hour after the burn injury occurred and after initial wound cleansing. The dressing masks were held in place with stretch gauze and changed every 2 to 3 days unless overload of secretion was seen.

RESULTS

Compared to our common practice, the PMDs provided an improved healing outcome; decreased edema and inflammation; and reduced wound pain. It is our impression that a rapid application of the dressings reduced the extent and severity of this type of burn. In 6 days, the burns were exhibiting excellent and rapid healing. Compared to the traditional approach, the patients and nursing staff found the dressings were very easy to use and decreased the number of dressing changes required while improving the patients' quality of life. The dressings seem to provide a better cosmetic outcome and patient satisfaction.

CONCLUSION

Polymeric membrane dressings are effective for wound care management of superficial and second degree facial burns. The dressings quickly reduced inflammation, edema and pain while providing an optimal healing environment.

Bibliography

1. Johnson M. Physiology of pain. In: Trauma and pain in wound care. Trowbridge, Witshire: Cromwell Press; 2006.
2. Moss LS. Treatment of the burn patient in primary care. *Advances In Skin & Wound Care*. 2010;23(11):517-524.
3. Pavoni V, Giancesello L, Paparella L, Buoninsegni LT, Barboni E. Outcome predictors and quality of life of severe burn patients admitted to intensive care unit. *Scand J Trauma Resusc Emerg Med*. 2010 Apr 27;18:24.