Taking Shape with Polymeric Membrane Dressings

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AIMS

A variety of dressings are used to manage heel pressure ulcers. Foam dressings are often selected by clinicians. However, if there is little to no exudate, traditional foam dressings can lead to further drying of the wound. If the wound bed is dry, dressings can adhere to the wound surface, and cause pain and tissue destruction upon removal. Improved outcomes are often observed if moist wound healing conditions are maintained, and if dressings that do not adhere to the wound bed are selected.

OBJECTIVES

This report will discuss the unanticipated, dramatic improvement in healing achieved when polymeric membrane dressings were implemented.

METHODS

A 69 year old male patient with diabetes, cancer, hypertension, vascular disease and dementia developed a heel ulcer. The immobile patient suffered from musculoskeletal pain, poor nutritional status and on the Waterlow scale, was a very high risk for skin breakdown. The patient received analgesia for conditions not related to the heel ulcer. Foam dressings had been applied for 43 days but the heel ulcer continued to deteriorate.

Multifunctional polymeric membrane dressings replaced the foam dressings used on this dry necrotic and slough covered heel ulcer. To soften and moisten the necrotic tissue, 2 drops of sodium chloride 0.9% was applied to the polymeric membrane dressing to activate the wound healing components of the dressing in order to "jump start" the autolytic debridement of the necrotic tissue.

Multifunctional polymeric membrane dressings have components that work together to provide an optimal healing environment. The dressings help to reduce pain, swelling and inflammation in the wound and surrounding tissue by modulating the nociceptor response in and below the tissues in contact with the wound dressing.

The standard polymeric membrane dressings have an outer semipermeable membrane which facilitates optimal moisture balance by promoting an ideal moisture vapor transmission rate between oxygen and carbon dioxide.The standard polymeric membrane dressings have an outer semipermeable membrane which facilitates optimal moisture balance by promoting an ideal moisture vapor transmission rate between oxygen and carbon dioxide. The semipermeable backing provides an ideal bacterial barrier to protect the wound from external contamination. The glycerol in the dressing helps prevent adherence by adding moisture to dry wounds, minimizing pain and trauma to the wound bed during dressing removal. The dressing is able to fill in the wound space and make good contact with the wound bed.

Polymeric membrane dressings contain a nontoxic, nonirritating wound cleanser. The built-in wound cleanser facilitates autolytic debridement directly by loosening the bonds between the slough and wound bed. During autolytic debridement the slough is drawn into the dressing and is discarded with the dressing. No manual cleansing was needed which eliminated the disruption of new tissue growth in the wound bed which is often associated with dressing change activities. The variables compared between both dressing approaches were: moisture balance, conformability, cleansing/debridement needs at dressing changes, pain, adherence, ease of use and healing time.

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Initial application of Polymeric membrane dressings.

- Heel ulcer with 50% necrotic tissue and 50% slough.
- Exudate is scant, purulent light yellow with a perceptible odor.
- The wound edges are rolled

Periwound skin is weeping.

Wound Measurements:
3cm x 1 cm x 1 cm

25 Days Later

- The heel ulcer is 90% granulated.
- Pain, Odor and erythema is decreased.
- Exudate is serous.
- The wound edges are no longer rolled.

Periwound skin is dry and intact.

Wound Measurements:
2.5 cm x 0.8 cm x 0.1 cm

17 Days Later (Day 42)

Wound Closed.

The apparent scabbed area in reality is dry skin.

RESULTS AND CONCLUSIONS

Compared to the traditional dressings, the polymeric membrane dressings provided dramatically improved results. In 42 days the wound closed, compared to the previous approach of using foam dressings for 43 days which resulted in continuing deterioration of the heel ulcer. Polymeric membrane dressings maintain optimal moisture levels and facilitate autolytic debridement. The dressing conformed completely to the shape of the wound, creating excellent contact between the wound and dressing. Polymeric membrane dressings reduced the patient's pain significantly. The patient's pain previously was 5 on the 0-5 pain scale in spite of being treated with pain medication; after initiation of the drug-free multifunctional polymeric membrane dressings his pains decreased to 3. The new dressings did not adhere to the wound bed and did not disrupt new tissue growth during dressing changes. The dressing was easy to use and provided dramatically faster healing time. Polymeric membrane dressings decreased the amount of cleansing needed and therefore decreased the amount of time required to change a dressing and decreased the use ancillary supplies, which further reduced costs of managing this wound. Polymeric membrane dressings optimized healing outcomes to a wound that was deteriorating. The true cost savings was that the wound closed rather than having to be maintained in a chronic painful state.

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*PolyMem® wound dressings are made by
Ferris Mfg. Corp., Burr Ridge, IL 60527 USA
www.PolyMem.com

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