Problematic Stage IV Pressure Ulcers on Heels closed with Polymeric Membrane Dressings*

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Introduction

Pressure ulcers occur in all care settings: hospitals, rehabilitation, nursing homes and the patients home. The heel is the second most common site for the development of pressure ulcers and many of these can be prevented.

Heel pressure ulcers on extremely disabled patients tend to have poor circulation and often become infected. Even with good compliance, which is rare, many heel pressure ulcers never close. Complications associated with heel pressure ulcers include: cost of care, osteomyelitis, recurrent hospitalisation, pain, lost wages, and amputations.

This study highlights three patients who would not appropriately off-load their heels: an 85 year-old man with severe Parkinson's, a combative 80 year-old man with Alzheimer's and a severely contracted 60 year-old woman with Alzheimer's, all with 3-6 month old stage IV heel pressure ulcers. All these ulcers were acquired during hospitalisation and left to be treated at home.

Aim

It was important for us to use a dressing that could easily be changed by the relatives at home. We chose to evaluate PolyMem® in regards to ease of use, cleansing and healing.

Method

One patient's wound was sharp debrided (case 2) prior to first dressing application. Polymeric membrane cavity fillers moistened with a small amount of saline softened the slough and necrosis on the other wounds. On one of the ulcers (case 3) a silver polymeric membrane dressing was used together with a charcoal dressing due to the odour. After initial cleansing Polymeric cavity fillers covered with Polymeric membrane dressings, were placed directly on each wound and replaced daily without rinsing or any other intervention. Later, dressing changes were performed every other day or more seldom when indicated.

Polymeric membrane dressings contain components that continuously, cleanse the wound whilst in place, often eliminating the need for cleansing at dressing changes, leading to less disruption of the wound bed, less pain and time saving for the nurses. The hygroscopic glycerol and super absorbent incorporated in the matrix work together, pulling excess fluid and liquefied slough from the wound into the dressing. The glycerol also help maintain the moisture in the wound and prevents the dressing from sticking to the wound surface.

Due to how it works with the nociceptor system polymeric membrane dressings often provide dramatic drug-free pain relief which is ideal for debilitated patients. They also help protect the wound area from pressure and shear during movement and provide a cushioning effect which is extra beneficial on pressure ulcers.

Case 1

85 year-old male with severe Parkinson Disease. Mobile with assistance. Living conditions very hot and humid which could be the reason he could not tolerate the low air-loss bed and kept kicking off his heel protectors. The heel ulcer developed 3 months ago during hospitalisation for pneumonia. Initially treated with Iodine solution and petrolatum gauze in an attempt to dry out the necrosis, however, the dressings stuck like glue to the wound causing great distress at dressing change.

January 2008
Previous treatment with Iodine and gauze had partially dried up the wound leaving a thick dry necrotic area covering half the wound. Initially a hydrogel was used together with PolyMem®. After one week the necrotic area had softened so the Polymeric membrane dressing moistened with saline was used without the hydrogel.
Inserted photo shows the wound after 1 week.

April 2008
The patient no longer protested over getting his dressing changed nor did he complain about pain. The wound did not need to be cleaned during dressing changes.
Due to economical reasons he did not want to change the dressing on a daily basis. His district nurses agreed to this as the wound continued to show improvement.

August 2008
Polymeric membrane dressings were often moistened prior to application as the wound could be very dry at times. Every visit showed new signs of granulation and epithelialisation of the wound. The patient stopped complaining at dressing changes. Changing the dressing was fast and easy as it never stuck to the wound bed at all, as well as eliminated cleansing at dressing change.

October 2008
During the entire treatment the patient was without heal protectors and refused to lie on the air-loss mattress (his living conditions were very hot and humid). The nurses were amazed at the rate of healing of the wound compared to the clinical evaluation of this patient, as well as the combination of nonexisting off loading and size of the wound talked against healing.

Case 2

80 year old male with Alzheimer's Disease, immobile and very aggressive. The heel ulcer developed 4 months ago during hospitalisation. At home it deteriorated due to the patients constant banging of the heels on the bed rails. Initially treated with Iodine solution and a cream containing hyaloronic acid. Dressing changes had been very difficult to perform on this patient due to his agitation.

October 2007
The 4 month old pressure ulcer underwent sharp debridement followed by application of a hydrogel and Polymeric membrane dressings. After a couple of weeks only polymeric membrane dressings moistened with a few drops of saline was used. Daily dressing changes the first 3 weeks, after that it was sufficient with changes every other day. No additional wound cleansing was performed.

December 2007
The patient is still very aggressive and banging his heels on the rails of the bed. In spite of that the wound is cleaning up nicely.
The possibility of changing the dressing without having to cleanse the wound simplified the dressing changes as the entire procedure took so little time and caused no agitation for the patient.

March 2008
Despite the lack of off-loading and continuous new trauma due to kicking his heel on the rails the wound is filling up with new granulation tissue.
Every other day the patients' 78 year old wife changed the dressings herself whilst the district nurses only came once a week to inspect the wound.

June 2008
Eight months after the first application of polymeric membrane dressings, the stage IV pressure ulcer has closed. The combination of an optimal, undisturbed wound environment and the extra cushioning and protection from polymeric membrane dressings made this possible.
Not once during these 8 months did the wound show any signs of infection.

Case 3

A 60 year old woman with Alzheimer's Disease and reduced mobility. Contracted her heel ulcer during hospitalisation for dehydration. She was in great pain (9 on a scale of 10) and was taking several different types of analgesics to try control it. The local GP had treated it with Hyaloronic acid for 4 months but the ulcer kept on deteriorating. The family asked for help in the home when the wound odour became too unbearable to be in the same room.

April 2007
The ulcer was extremely wet and mal-odourous. The smell was making it impossible for the family to be in the same room. It was too painful to perform any sharp debridement. A silver polymeric membrane cavity filler was used together with silver polymeric membrane dressings and covered with a charcoal dressing. Dressing changes twice daily.
Inserted photo shows wound after 2 days.

May 2007
The pain level has gradually diminished from a 9 to no pain at all. The odour is under control and the charcoal dressing is no longer used. No debridement has been performed nor has the wound been cleaned between dressing changes. The cleansing effect seen is due to the polymeric membrane dressings.

June 2007
The standard polymeric membrane cavity filler is now being used as the silver version is no longer needed. We cut strips that we inserted into the hole and covered with polymeric membrane dressings. New granulation tissue is filling up the cavity very fast. The dressings are now changed every other day.

July 2007
It only took 3,5 months for this deep ulcer to close. Prior to polymeric membrane dressings the ulcer had been deteriorating steadily for 4 months.
The wound was free from necrotic tissue and almost pain free after two weeks of polymeric membrane dressing use.

Results

The patient with Parkinson's did not tolerate a low air-loss bed. He would not wear heel protectors, perhaps due to the heat (no air conditioning). His previous dressings stuck painfully to his wound bed, but the polymeric membrane dressings were non-adherent and promoted steady wound healing. The 80 year old man with Alzheimer's was extremely aggressive when he became impatient, banging his heels on the bed rail. Dressing changes were quick, atraumatic and easy to perform, so his wife was able to do them without irritating him, allowing community nursing visits to decrease from daily to weekly. The 60 year old lady with Alzheimer's showed an improvement already after 2 days, after 2 weeks she no longer needed the silver version of the dressing. Her large cavity closed after 3,5 months. Both the other ulcers closed within nine months.

Discussion

Polymeric membrane dressings debrided and kept all the wounds clean and infection-free throughout the healing process. They protected the wounds by providing cushioning and promoted a moist environment which led to complete wound closure. Because these multifunctional dressings are safe, non-adherent and manual wound bed cleansing was unnecessary, all families participated in care by performing many of the dressing changes, greatly saving nursing costs.

*PolyMem®, PolyMem® WIC Cavity and PolyMem® MAX Wound dressings Manufactured by Ferris Mfg Corp, Burr Ridge, IL 60527 USA. This case study was unsponsored. Ferris Mfg. Corp. contributed to this poster design and presentation.

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