

Case Study of Long-Term Patient with Stage IV Pressure Wound

Laura Moser, RN, Monica Stallworth, M.D., MPH, MM, John Hopkins University (affiliated),
Western Maryland Hospital Center, Hagerstown, MD

Introduction

We hypothesized that NPWT delivery via a gauze based wound filler would be a fiscally effective choice in reducing the wound dimensions of a patient with multiple irreversible risk factors of compromised skin integrity.

Rationale

NPWT removes exudate and slough from the wound bed, reduces interstitial edema, maintains a moist wound healing environment and decreases bacterial burden, thereby promoting rapid reduction in wound size. NPWT, with the Chariker-Jeter technique, utilizes moist antimicrobial gauze with a nonadherent contact layer in the wound bed to prevent newly formed granulation tissue from growing into the dressing.

Patient

The patient is a 42-year old female who had multiple risk factors for compromised skin integrity including quadriplegia and all extremity contractures.

- Comorbidities include – closed head injury secondary to motor vehicle accident in January of 2002, osteomyelitis right lateral malleolus, methicillin-resistant *Staphylococcus aureus* positive, quadriplegia with aphasia, hypothyroidism, flexion contractures of both upper extremities and bilateral foot drop, anemia of chronic disease, hypertension, and compromised nutritional status.
- Wound history includes- decubitus ulcer involving the sacral area, Stage IV – healed 08/03, Stage II sacral ulcer – healed 8/04, Methicillin-resistant *Staphylococcus aureus* in sacral wound – resolved 8/05, pressure ulcer to right ankle 11/07.

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Treatment

- NPWT was delivered using a gauze based filler at -80 mmHg*. The wound filler used was gauze supplied as part of the manufacturers kit and was applied using the Chariker-Jeter method of application.
- Wound dimensions were captured by direct assessment.
- Wound area and volume was calculated at baseline (when NPWT was initially prescribed) and at the end of the therapy.
- Cadexomer Iodine** placed in wound bed under non-adherent gauze to assist with completion of debridement once plastic surgeon sharp debridement performed. Dressing changes three times per week.
- Standard course of antibiotic treatment given after confirmation of MRSA by wound culture.

* VISTA and EZCARE – Smith & Nephew Wound Management Inc., St Petersburg, FL
** IODOSORB® – Smith & Nephew Wound Management Inc., St Petersburg, FL

References
Richard J. Ham, Philip D. Sloane, Gregg A. Warshaw, Marie A. Bernard, Ellen Flaherty, Primary Care Geriatrics- A Case-Based Approach, Fifth Edition, Mosby Elsevier, Pennsylvania: 2007, chapter 28, p 371-390

Dan Berlowitz, M.D., MPH, Prevention and Treatment of Pressure Ulcers (Internet), [updated 08/22/07; cited 04/30/08]. Available from: <http://www.uptodate.com/online/content/topic>



11-15-07



11-21-07



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01-23-08



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Outcome

- The reduction in wound size observed in this case indicates that gauze is a suitable wound filler material with which to deliver NPWT to the wound bed. It did not serve as reservoir for continued infection or delay closure which was a concern initially given the facility's lack of prior experience with the NPWT technology. The high level of wound in-fill observed and the relatively short length of time of seven days to reach closure of a Stage IV pressure sore was particularly impressive. This cost savings in dressing material, high cost MRSA sensitive antibiotics, and nursing personnel is a common objective in long-term care settings.
- The time taken to achieve adequate wound progression (i.e. where full wound closure could be managed with conventional advanced wound dressings) was assessed and with comparison of similar wound volumes was approximately four weeks.