Introduction

Patients with complicated wounds often undergo a long period of wound treatment. Mobile patients with compromised wounds would benefit from a wound therapy conducive to the home. Utilizing an ultra-portable personal Negative Pressure Wound Therapy (NPWT) device** easily initiated in any care setting would greatly benefit mobile patients. We proceeded to question if a new portable NPWT device** could safely and efficiently be applied to treat complicated wounds in the home healthcare setting.

Methods

The device was recently shown to be successful in supporting wound healing in a case series from Europe. Together with a polyurethane* or gauze wound dressing, the ultra-portable NPWT device** was given to the patients for home care use where a wound care specialist changed the dressing three times per week. None of the patients presented with contraindications such as:

- Malalignment of the wound
- Non-intact and unexploded fists
- Exposed vasculature
- Exposed anastomotic site of blood vessels or bypasses
- Unhealed osteomyelitis
- Necrotic tissue with septic present
- Exposed nerves
- Exposed organs

Case Description: Patient 1

62 year old fully mobile female patient was admitted for wound treatment at the Sparrow Wound Clinic on the 21st of January 2013. The patient was presented with a non-infected post-surgical wound dehiscence in the chest area which was treated with NPWT for 11 days. Comorbidities include heart valve replacement surgery 1 month prior to admission and development of a post surgical infection dehisced wound. NPWT device** was used in the home environment and dressed by a wound specialist in home. NPWT was indicated for granulation tissue formation and removal of exudate and infectious material. Upon patient admission, the wound measured 5.5 cm in length, 3.5 cm in width and 0.8 cm in depth, with light exudate. Wound debridement was necessary. The wound status after 11 days of NPWT was observed to be improved, and it is noted that the wound reduced in size to 1.8 cm in length, 1.8 cm in width and 0.3 cm in depth. During the 24 day treatment period, the NPWT device setting was –100 mmHg, a foam-based** NPWT dressing was changed 5 times and the device canister was changed 3 times.

Case Description: Patient 2

25 year old fully mobile male patient was admitted for wound treatment at the Frankfort Regional Medical Center-Wound Care on the 28th of January 2013. The patient presented with a non-infected hernia repair dehisced surgical wound which was treated with NPWT for 14 days (previous treatment with Aquacel and gauze dressings). Comorbidities include a history of smoking. The NPWT device** was used in the home environment and dressed by a wound specialist at the wound clinic. NPWT was indicated for granulation tissue formation and removal of exudate and infectious material. Upon patient admission, the wound measured 5.0 cm in length, 3.6 cm in width and 1.0 cm in depth, with moderate exudate. Tunnel 1.2 cm and 0.9 cm. Wound debridement was necessary. The wound status after 14 days of NPWT was observed to be greatly improved, with the wound reduced in size to 0.5 cm in diameter, 0.5 cm in width and 0.5 cm in depth, and no exudate. The patient’s wound completely healed after 2 weeks of NPWT**. During the 14 day treatment period, the NPWT device setting was –80 mmHg, a foam-based** NPWT dressing, without a contact layer, changed 4 times and the device canister was changed 4 times.

Case Description: Patient 3

50 year old fully mobile female patient was admitted for wound treatment at the Russell County-Wound Care Clinic on the 30th of January 2013. The patient was admitted with diabetic foot ulcer at the 5th digit on the 9th of January 2013. The patient presented with an infected diabetic foot ulcer at the 5th digit on the 9th of January 2013, for treatment at the Russell County-Wound Care Clinic on the 30th of January 2013. The patient was admitted with diabetic foot ulcer at the 5th digit on the 9th of January 2013. Upon admission, the wound measured 4.8 cm in length, 3.6 cm in width, with moderate exudate and a non-adherent wound contact layer** was used to cover exposed bone, and 10% granulated tissue, 74% slough and 15% eschar. Wound depth was not measured due to the presence of necrotic tissue. Wound debridement was necessary. The wound status after 28 days of NPWT was observed to be improved, even though the wound size remained the same measuring 4.8 cm in length, 3.2 cm in width and the depth was hard to determine, the granulation tissue greatly increased to 40%. During the 28 day treatment period, the NPWT device setting was –125 to –150 mmHg, a gauze-based** NPWT dressing with wound contact layer was changed 12 times and the device canister was changed 10 times.

Results

This case series demonstrates that a new ultra-portable NPWT device** enables wounds to progress to healthier conditions rapidly. Moreover, the new ultra-portable NPWT device** helped facilitate wound care as it allowed patients to be fully mobile and continue with normal daily activities during the course of treatment.

Conclusions

This case series demonstrates that a new ultra-portable device** can be used effectively on the majority of wounds for which NPWT is indicated and in all care settings. In addition, a new device that promotes freedom and mobility helps patients resume normal daily activities which in turn improves patient care. Patients found the system to be light, portable, easy to use and comfortable. They were very satisfied with the outcomes of this new solution.

Notes

- ** Product notation:
  - Avance® NPWT System (Mölnlycke Health Care AB, Gothenburg, Sweden)
  - InViva™ NPWT System (Medela Healthcare AG, Baar, Switzerland)
  - Marjo® NPWT System (Medela Healthcare AG, Baar, Switzerland)
  - Medela® NPWT System (Medela Healthcare AG, Baar, Switzerland)

- Literature

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- Presentations
  - Presented at the 27th Annual Symposium on Advanced Wound Care and Wound Healing Society (SAWC/WHS), Spring, April 23–27, 2014, Orlando, FL, USA

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