The use of the Versatile 1 Wound Vacuum System to treat a patient with a challenging grade 3 pressure ulcer in continuing care

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Normal dermal healing in healthy subjects restores the functional integrity of the skin. However, in some patients, the healing process may be compromised by factors such as comorbidity, concomitant medication, poor nutrition and ageing (Moore, 2005). Topical negative pressure (TNP) therapy has been in common use in the acute care setting for at least 10 years, but is used less often in the community and continuing care settings for the treatment of challenging acute and chronic wounds (Beldon, 2006).

The Versatile 1 (V1) Wound Vaccuum System (Talley Medical, Romsey) has recently been introduced to the UK as an alternative to Vacuum Assisted Closure (VAC: KCI Medical, Oxford) and this case study will now describe its use on a patient with a challenging pressure ulcer in a continuing care setting.

The patient

A 101-year-old woman with type 2 diabetes and a history of ischaemic heart disease and chronic obstructive pulmonary disease sustained a fractured right distal femur, which was manipulated under anaesthetic. During the post-operative period, she developed a grade three pressure ulcer. Currently, she is an inpatient in a care of the elderly continuing care unit; she has very limited mobility, and is only able to transfer from bed to chair with assistance.

The wound was debrided using conservative sharp debridement and larvae therapy for four weeks before topical negative pressure therapy using the V1 Wound Vacuum System was initiated. In addition to the use of the V1 pump, the patient was managed in accordance with the *Scottish Best Practice Statement for the Treatment and Management of Pressure Ulcers* (NHS Quality Improvement Scotland, 2005) which included the use of a pressure-reducing cushion and mattress, repositioning, appropriate skin care and nutritional supplementation.

On day one of treatment, the wound measured 6cm wide x 4cm long x 4cm deep (*Figure 1*). On examination, the wound showed no signs of clinical infection and the wound bed was covered with a mixture of granulation tissue and slough, which was adhered to the base and filled the cavity. The V1 pump was applied at a setting of 80mmHg and left on continuous suction, with dressing changes taking place every 3–4 days. By Day 8 (*Figure 2*) of treatment, the wound measured 5cm x 4cm x 3.5cm with no evidence of infection. The wound had undergone a reduction in the amount of slough present, and there was evidence of contraction at the wound margins. On Day 24 (*Figure 3*) of V1 therapy, the wound measured 4cm x 4cm x 2.5cm. The wound bed consisted of 100% granulation tissue with no signs of clinical infection. At review on Day 50, the wound had made sufficient progress to healing so treatment with the V1 Pump was discontinued (*Figure 4*). The wound dimensions were 2cm x 1.5cm x 1.5cm; with 100% granulation tissue noted on the wound bed, and no evidence of clinical infection.

Conclusion

In this case, the patient was elderly, had significant co-morbidity and poor nutritional status and thus presented with a challenging post-operative pressure injury. As part of an overall care package in line with local best practice, the V1 therapy contributed to an improvement in the condition of the wound bed. This case suggests that further investigation is required into the use of TNP therapy in the elderly population with chronic disease. WUK

NHS Quality Improvement Scotland (2005) *Best Practice Statement for the Treatment and Management of Pressure Ulcers*. NHS Quality Improvement Scotland www.nhsquality.org

Beldon P (2006) Topical negative pressure dressings and vacuum-assisted closure. *Wound Essentials* **1:** 110–114

Moore K (2005) VAC therapy: interactions in the healing process. *Wounds UK* **1(1):** 86–90

Figure 1. The grade 3 pressure ulcer on day one of the V1 therapy.

Figure 2. By Day 8 of treatment a reduction in wound dimensions and amount of slough is evident.

Figure 3. By Day 24, the wound bed was covered in 100% granulation tissue.

Figure 4. On Day 50, the wound had suitably progressed to healing, so V1 therapy was discontinued.