

Successful management of a traumatic leg wound for a medically compromised patient using NPWT and a bacteria and fungi binding dressing.

Background

An 82 year old female patient with multiple medical co-morbidities including severe renal insufficiency suffered multiple lacerations to her lower left leg after a traumatic fall in August 2013. Figure 1 shows the wound at presentation at which point surgical intervention was considered due to the extent of local oedema and rate of necrosis development.



Figure 1. Wound presentation – 28 August 2013.

Management of wounds

The management regimen (twice weekly) after much consideration consisted of wound irrigation and debridement using a PHMB based solution (Prontosan, B Braun), a bacteria and fungi binding wound dressing (Sorbact, ABIGO Medical), and a disposable NPWT device (PICO, Smith and Nephew) under a shaped tubular bandage (20 mmHg). Both wounds consisted of undermined tissue of up to 3 cm, presence of hematoma and fragile erythematous periwound tissue.

With regard to the medical state of the patient and tissue fragility a decision was made to minimise the risk of systemic absorption or interaction by not using an advanced antimicrobial dressing. The decision was made to use Sorbact given its inert characteristics and concurrent antimicrobial effect. In this case infection prevention was just as important as infection management.

Wound management outcomes

The first wound review (Figure 2), 12 days post presentation displayed improvement that was described as simply amazing. The patient tolerated LFUD (Low Frequency Ultrasound Debridement) without issue and both the wounds showed a reduction in area of up to 50%. The general improvement and quality of surrounding tissue made the decision for continued management simple.

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Figure 2. Wound review - 10 September 2013

The third and final visit, 20 days after the initial presentation again impressed the staff involved. The improvement was profound and continued debridement using LFUD was not warranted. The wounds continued to decrease in size with the remainder of exposed tissue well granulated and well on the way to complete healing.



Figure 3. Wound review – 17 September 2013.

Discussion

The differentiating factor for this case from the standard wound care practice usually undertaken was the introduction of Sorbact. The decision to use this dressing type was based on the medical fragility of the patient and the intention to not introduce any chemical agent as part of the wound dressing.

The application of Sorbact to the wound was intended to contribute to wound healing by means of passive infection control and infection prevention. The mechanism of action is based upon the physical principle of hydrophobic interaction¹ and does not rely upon the deposition of bactericidal chemicals to the wound bed.

A randomised controlled trial (Meberg et al³) conducted using Sorbact and chlorhexidine in the prevention of umbilical cord stump infection with over 2400 neonates demonstrated equivalence between the two groups in infection prevention.

In addition to this, Sorbact demonstrated its inertness following application of the dressing to over 1200 neonates without any incidence of hypersensitivity or damage to the underlying fragile newborn skin. Additional research into DACC coated dressings (Sorbact) is suggested. Another study indicated the presence of these dressings may also induce the recruitment and proliferation of fibroblasts by up to 50% (Falk et al², 2012)

This hypothesis could help to explain the clinical effect observed when Sorbact is used in the management of inflamed yet not clinically infected wounds.

Management with a hydrophobic dressing

This case has demonstrated a couple of reasons why the management of wounds with a bacteria and fungi binding dressing such as Sorbact should be considered.

The absence of contraindications of use for Sorbact can allow this dressing type to be used at all levels of experience in wound care management. The improved wound healing times in conjunction with the affordability of the Sorbact compress makes a strong case for the ever important health economics aspect to wound management.

Conclusion

This individual case study has demonstrated quite effectively Sorbact in this specific case. The relevance of an individual case is understood when discussing clinical significance, and other contributing factors need to be appreciated when making generalisations based on one case. On the basis of this case scope exists to pursue Sorbact further in the management of traumatic wounds either alone or in conjunction with NPWT.

References

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