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Background

A 54 yr old male patient was managed surgically for his advanced peripheral artery disease with an aortobifemoral bypass. A Y-graft procedure was performed however non-healing of the surgical wound to his left anterior thigh and groin resulted. The medical history of the patient included a history of substance abuse and an above knee amputation of the left leg. The patient remained in hospital for a further 7 months as part of his inpatient recovery with the management of the non-healing wound eventually becoming the primary active medical issue (Figure 1).

Management of the wound

The patient was managed post operatively using standard protective surgical dressings, however after a couple of weeks and following excessive movement on behalf of the patient wound dehiscence occurred and the risk of infection increased. A management plan was instituted to protect the wound from infection and provide the best environment for wound healing to occur. After seven months of failed wound management interventions, including VAC assisted wound care and silver based antimicrobial dressings it was decided to transfer the patient to a non-acute facility for continued rehabilitation and wound management. Upon arrival, a bacteria and fungi binding gel dressing* (Sorbact®, ABIGO Medical, Sweden) was applied to the wound for continued wound management (Figure 2). The gel dressing was applied as a wound contact layer with additional support using standard secondary dressings. No significant changes to the patients medication regimen or diet occurred over the period of wound management.

Aim

The aim of this case study was to evaluate the effect of a bacteria and fungi binding mesh dressing in the management of a chronic non-healing post operative wound. Figure 1

Results

The use of the bacteria and fungi binding dressing delivered an immediate impact to both the treating team and the patient. After 1 week the improvement in colour and character of the wound was evident and confidence in the management plan was confirmed (Figure 3). By week 3 the wound was shallower and of nice colour. The gel dressing was successful at removing the fibrin formation with promotion of healing advanced. By week 5 (Figure 4), the upper half of the wound was almost completely healed with the wound characterised as shallow and the presence of new granulation tissue. The lower half of the wound although not as advanced in healing was considerably shallower and showing good signs of further improvement. At this point the treating team decided to use a Mepitel wound contact layer underneath the Sorbact® Gel dressing to assist in 'lifting the wound'. After six weeks both the treating team and the patient were very happy with the healing outcome of the wound (Figure 5) and the patient was transferred home for ongoing home based care.

Discussion

The bacteria and fungi binding dressing operates by facilitating an optimal wound healing environment. It achieves this by binding to wound micro-organisms to help dampen both the effect of these pathogens and the often chronic local inflammation that is associated with these types of wounds. The mechanism of action is based upon the physical principle of hydrophobic interaction¹ and does not rely upon the deposition of any bactericidal chemicals or endogenous toxins to the wound bed. (Figure 6)



Figure 6. Wound bacteria and fungi bind to bacteria and fungi binding dressing*: *Candida albicans* (orange)¹.

The circumstances surrounding the healing or non-healing state of a chronic wound can often be varying and sometimes a change to a single variable is all that is required to enable the patient to 'turn the corner' when it comes to healing. Whether the variable be linked to smoking, diet, or exercise (improvement in rehab goals) it is accepted that it can be difficult to define precisely which parameter change correlates directly to the wound healing outcomes.

Conclusion

The presence of an inert dressing such as Sorbact® in the opinion of the treating team enabled an appropriate wound environment to be achieved that resulted in improved wound healing. The results observed were ongoing and sustained and in the absence of success from previous attempts it was felt the introduction of the dressing in this case was the key to success.

References

1. Ljungh, Å, Yanagisawa, N. Wadström, T. *Using the principle of hydrophobic interaction to bind and remove wound bacteria.* Journal of Wound Care, Vol. 15, Iss. 4, 01 Apr 2006, pp 175- 180

* Sorbact® Gel, ABIGO Medical Sweden.



Figure 1. Post discharge from hospital after 7 months of wound management.



Figure 2. Wound contact layer using bacteria and fungi binding gel dressing*



Figure 3. After 1 week wound management.



Figure 4. After 5 weeks wound management.



Figure 5. After 6 weeks wound management.