

INTRODUCTION

This poster represents a retrospective review of two case studies whereby wounds were treated with ActivHeal® Hydrogel and ActivHeal® Film. This review was conducted to show that these two products work together affectively to debride necrotic tissue.

The review also considers the differences in healing times between the two wounds and explains the differences through a discussion of factors that delay wound healing.

Whilst a number of debridement options are available to the clinician, as Pudner¹ states: "Amorphous hydrogels are ideally suited for necrotic and sloughy wounds". ActivHeal® Hydrogel is a 'First Line'² amorphous hydrogel intended for use on basic necrotic or sloughy wounds. The gel has high fluid donation properties³ to aid autolytic debridement of the necrosis or slough.

As with all amorphous hydrogels, to prevent loss of moisture⁴, ActivHeal® Hydrogel must be covered with a semi-permeable dressing, such as ActivHeal® Film. This film has a higher moisture vapour transmission rate (MVTR) than the UK market leader⁵, thus preventing maceration of the periwound area under the film.

Case Study 1: Mr X

Past Medical History:

Mr X is a 56yr old gentleman with a history of ulcerative colitis. Whilst on holiday in Egypt he developed an acute onset of abdominal pain which was treated initially with antibiotics and analgesia. On return to England he was admitted to the A&E department at the Great Western Hospital, Swindon, for assessment. Clinical examination and diagnostic imaging found Mr X to have a perforated bowel with faecal contamination. An urgent bowel resection was performed and Mr X was subsequently transferred to ITU for management. During his stay in ITU Mr X required high levels of inotropic support which resulted in the developing peripheral tissue necrosis.

Wound Assessment:

Wound assessment was performed by the Vascular Nurse Specialist and found Mr X to have a competent vascular system with palpable pulses. He had necrotic areas to both feet which were isolated to the lateral side and full tissue depth.

Treatment Decision:

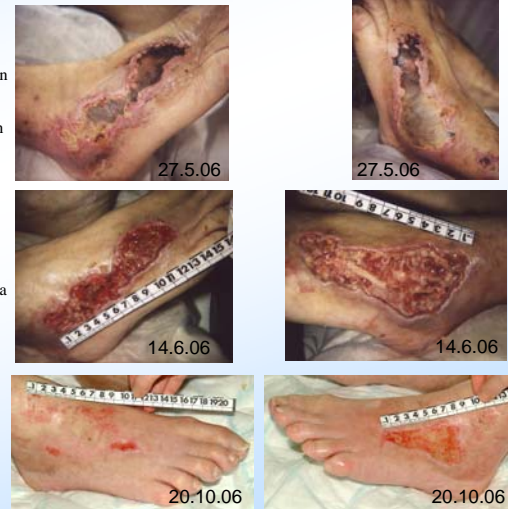
After a full assessment the treatment selected to promote autolytic debridement was ActivHeal® Hydrogel covered by ActivHeal® Film as a secondary dressing. This dressing was changed every 48hrs.

Outcome:

Following 5 treatments both wounds were showing considerable improvement. Wound 1 now had 100% granulation tissue present and Wound 2 had 60% granulation tissue, 40% slough with visible tendons.

At this point the wound was reassessed and the dressing regime was changed to a colloid based product to promote further granulation and epithelialisation.

The wound has subsequently gone on to heal. No further photographs available as patient transferred to tertiary care.



Case Study 2: Mr P

Past Medical History:

Mr P is an 80yr old gentleman with a history of type 2, insulin dependent diabetes with peripheral neuropathy and peripheral vascular disease (PVD). He has previously undergone a left below knee amputation and is partially wheelchair dependent, but can mobilise short distances with a prosthesis. Mr P was admitted to the Great Western Hospital in Swindon with elevated blood sugar levels secondary to wound infection.

Wound Assessment:

When admitted to hospital his wound was assessed by the vascular nurse specialist. He had an infected necrotic wound on his right heel which had developed secondary to pressure injury (Photo 1).

The foot was x-rayed and was found to have a degree of osteomyelitis isolated to the heel. Following this a duplex scan showed Mr P to have a patent post tibial artery and he underwent surgical debridement and removal of the osteomyelitic portion of the heel.

At the post-surgical dressing change there was still necrotic tissue and slough evident in the wound (Photo 2). In view of the duplex scan results the decision was made to try to auto-debride the remaining necrotic and sloughy tissue from the wound as opposed to further surgical debridement.

Treatment Decision:

After a full assessment the treatment selected to promote autolytic debridement was ActivHeal® Hydrogel covered by ActivHeal® Film as a secondary dressing.

Outcome:

After 3 times weekly dressing changes, debridement was achieved and some granulation tissue was present in the wound (Photo 3). At this point the wound was reassessed and the dressing regime was changed to alginate and foam as wound exudate had increased. Patient was discharged and later died.



CONCLUSION

This review of these wound case studies has shown that the time taken to debride Mr X's wound was 23 days compared to 10 weeks for Mr P. The difference in healing rates found in these two cases can be explained through their PMH/co-morbidities. Firstly Mr P is known to have PVD which reduces tissue perfusion and oxygenation which will impair wound healing because oxygen fuels the cellular functions to the repair process⁶.

Mr P also has diabetes, which is also associated with delayed healing⁷ the most commonly cited reason for which is infection⁸. Other contributing factors may have been Mr P's nutritional status and age, as deficiencies in the amount and quality of nutrients that a person ingests will prolong the healing process⁶ and, all phases of wound healing are effected by the ageing process⁶.

Mr X is known to have Chrons Disease and if he was taking steroids as part of his treatment these would suppress inflammatory and immune responses and hence delay wound healing and reduce resistance to infection. Mr X was not taking steroids during the treatment of this wound as he had undergone a bowel resection.

This brief look at the patient's different co-morbidities shows that Mr P had a number of conditions that are known to delay wound healing whilst comparatively Mr X had very few risk factors for delayed wound healing. This could be an explanation for the difference in wound debriding times. It must be remembered that this is not an exhaustive list of factors affecting wound healing that these patients may have been affected by.

In summary this retrospective review of Mr X's and Mr P's has shown that ActivHeal® Hydrogel used in conjunction with ActivHeal® Film works well to debride necrotic tissue from wounds. It has also highlighted some factors which can adversely affect wound healing.

REFERENCES

- 1 Pudner R, 2001 "Amorphous hydrogels in wound management" *Journal of Community Nursing* 15 (6)
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- 3 *Surgical Material Testing Laboratory Analysis Report 04/1722/2* (copies Downloadable from www.activheal.com)
- 4 Pudner R, 2001, "Amorphous hydrogels in wound management" *Journal of Community Nursing* 15 (6)
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- 6 Bryant R A, 2000, "Acute & Chronic Wounds. Nursing Management" 2nd Ed. Mosby: London p36, 43
- 7 Dealey C, 2005, "The Care of Wounds. A Guide for Nurses" Blackwell: Oxford p25
- 8 King L, 2001, "Impaired wound healing in patients with diabetes." *Nursing Standard* 15 (38) p39-45