



STAGNATION IN WOUND HEALING : WHAT NOW ?



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INTRODUCTION

In ulceration of the lower limbs it is necessary above all to take the aetiology of the wounds into account. In cases of simple venous insufficiency, conservative treatment with a minimum of intervention can lead to relatively speedy wound healing. Depending on the patient's mobility, short or long stretch bandages will be used to support venous circulation. Local treatment mainly seeks to promote the wound healing process, seeking to remove all fibrin and necrotic material from the bed of the wound as quickly as possible. If the wound is at a granulating and epithelialising stage, an optimal environment for the wound is maintained using moisture-regulating dressings. By constantly paying attention to the evolution of the wound we can correct the treatment of the wound, thus guiding the healing process in the right direction.

In addition to the aetiological problem, the effect of micro-organisms in the wound is also an important factor in wound healing. By maintaining adequate wound care, in which cleaning and debriding the wound are very important, the microbial treatment of the wound can be managed and infection of the wound can usually be prevented. If clinical signs of infection are confirmed by a bacteriological test, a systematic antibiotic treatment will be introduced, with the help of the antibiogram. The wound will also be temporarily treated with a 'cell-friendly' antiseptic.

Once we have taken all possible underlying factors into account and the wound is being treated in the optimum conditions, we still sometimes find that our wound treatment fails. Sometimes we find that the wound healing process stagnates.

THE ROLE OF PROMOGRAN IN STAGNATING WOUNDS

Thanks to a great deal of research in the area of wound healing, the company Johnson & Johnson has developed a new wound care product which is aimed at neutralising the harmful factors present in the exudate from chronic wounds. Exudate from chronic wounds contains an excess of matrix metalloproteinases, giving rise to a catabolic wound environment. These MMPs block, as it were, the action of growth factors, so that healing of the wound ceases or stagnates.

Promogran is a sterile, freeze-dried matrix, made of cellulose and collagen. Promogran binds the MMPs so that they lose their catabolic effect and the wound can be returned to a granulating stage again.

This dressing can be used in all types of chronic wounds where there is no necrotic tissue and/or no clinical signs of infection.

The wound bed is completely covered with Promogran, which can easily be cut to size. In dry wounds, Promogran is moistened using physiological solution or a Ringer solution. Depending on the amount of exudate being produced, a hydroregulatory secondary dressing is applied.

In moderately exuding wounds Promogran can remain in situ for 2 to 3 days. In strongly exuding wounds, the dressing is changed every day.

CASE

A sixty-eight year old man has already been treated for three years for two chronic venous ulcers, using compression therapy with short stretch bandages combined with hydroregulating local wound treatment. Initially the wounds regenerated, but after a few months the wounds seemed to be expanding more and more. After a wound culture was taken, a peroral antibiotic was administered for 14 days. The wounds were also treated with a povidone-iodine ointment. After a few days we observed that the area of the wound was no longer increasing. After the antibiotic

and the local antiseptic therapy were stopped, the wounds appeared quiet. Once again high-tech dressings were used in combination with compression therapy. For more than two months the wounds showed no necrotic or fibrinous material, but granulation and epithelialisation seemed to have ground to a halt, as it were.

On 06/04 we began the Promogran treatment (see photograph 1). Although the base of the wound gives a granulating impression, the jagged outlines of the edge of the wound indicate that the epithelialisation stage is not active. Since the wounds were exuding quite a lot, it was not necessary to moisten the Promogran with physiological solution (see photograph 2)

A secondary absorbent dressing and a bandage hold the Promogran in place for two days.

Removal of the dressing and cleaning of the wound can be done easily by rinsing with a physiological solution. After the dressing is changed a few more times it is evident that the base of the wound has a more vital appearance and the edges of the wound are less clearly delineated.

When we see that the wound is exuding less, the Promogran dressing is left in situ for three days.

We observe a very clear reduction in the surface area of the wound.

Less than three weeks after starting the Promogran treatment, both surfaces of the wound have been halved in comparison with day 0, and we note that the wound has a pinkish epithelialising edge (see photograph 3).

We continue the same treatment for a further five weeks and note a slow but steady reduction in the surface area of the wound (see photograph 4). From this moment onwards we did not see any progress worthy of note. The wound seemed to be stagnating once again. Although no clinical signs of infection were evident, apart from a slight increase in pain during wound care, we took a wound culture which showed us that *Pseudomonas aerogenosa* was present in both wounds.

We suspected that this might be an explanation for the new stagnating phase (see photograph 5). We treated the wounds for about two weeks with a silver-carbon dressing: Actisorb 220 Silver (see photograph 6). After only four days the patient noticed that the pain was significantly reduced. What is more, the wound had a more encouraging, vital appearance. After two weeks we started Promogran again, with the aim of encouraging wound healing as far as possible.

... weeks later, both wounds were completely closed.



photograph 1



photograph 2



photograph 3



photograph 4



photograph 5



photograph 6

DISCUSSION AND CONCLUSION

When the healing of a wound is problematic we must try to trace and adjust all intrinsic and local factors which are inhibiting healing. If the underlying pathology is given maximum support and wound healing is encouraged by creating a moist healing environment and through an appropriate wound cleaning technique, most chronic wounds will heal without many problems within the expected period of time.

A number of wounds that do not follow this pattern of expectations can be treated with Promogran. Growth factors that play an important role in the wound healing process are blocked by MMPs in chronic wound exudate. This gives rise to stagnation of the wound healing process, and a breakthrough can be achieved by using Promogran.

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