The management of stagnating wounds with a collagen dressing*

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Introduction:

Chronic or stagnating wounds are becoming a growing entity in wound management. In the treatment of a chronic wound, which is described as being stagnant in one of the wound-healing stages (usually the inflammatory stage). (1) The focus will be on debridement and modern wound-healing products. Studies have shown that high levels of proteolytic activity and low levels of MMP inhibitors are detrimental to healing.(1-3) The target for new wound dressings is to correct this imbalance by diminishing the amount of MMPs. This can be achieved by collagen based wound dressings, due to their binding capacity of MMPs.(2,3) It has been suggested that bovine collagen dressing (*SC) decreased MMP levels thereby help to restore a physiological balance between MMP s and TIMP s. (2,3)

We conducted a series of 20 case studies to evaluate the clinical efficacy of an aseptic produced bovine collagen dressing (*SC) in patients with stagnating wounds of various aetiologies.

Material and Methods:

*SC has shown a positive effect on wound closure and therefore reduces healing time.(3,4) The patients (N=20) had stagnating wounds of various etiologies that were free of necrotic tissue. The wounds did not respond to standard treatment, which entailed debridement where appropriate and the application of moist wound healing dressings. *SC was applied to the wound bed a **foam dressing was used as a secondary dressing. Patients were treated in both an in and out-patient setting. Dressing changes on average were twice weekly and took place at the discretion of the clinician according to exudate production. Wounds were cleansed with saline using the wet to dry phase.

Results:

In all 20 cases we observed a quick response to the collagen dressing*. The dressing was easy to handle and comfortable for the patients. Four different cases are presented to illustrate the results.

Conclusion:

The use of collagen not only improves clinical outcomes but also was shown to reduce pain during treatment and at dressing changes. In the 20 cases we observed *SC to stimulate wound healing in stagnating wounds.

Case 1:

The 55 year-old female patient had a large abdominal wound after bowel surgery. Fig. 1 shows the condition after NPWT was discontinued. The wound was cleansed with saline, *SC was applied to the wound bed and covered with a foam dressing. After 10 weeks of treatment the wound was almost closed. Fig.2.

Fig 1: Situation at the start of The treatment with *SC

Fig 2: Situation after 10 weeks of treatment, the wound is almost closed

Case 2:

The 83 year-old female status after a fall injury, a large hematoma developed. Fig. 3. The open head wound showed extensive undermining. The wound was cleansed with saline, after which *SC was applied covered with a foam. After 38 weeks of treatment the wound was closed. Fig 7.

References:

1. Mast, B. A.; Schulz, G.S.: Interactions of cytokines, growth factors and proteases in acute and chronic wounds. Wound Rep Reg 1996; 4: 411-420
2. Metzmacher I, Ruth P, Abel M, Friess W, In vitro binding of matrix metalloproteinase-2 (MMP-2), MMP-9, and bacterial collagenase on collagenous wound dressings. Wound Rep Reg (2007) 15 549–555
3. Wiegand C, Schönfelder U, Abel M, Ruth P, Kaatz M, Hipler UC. Protease and pro-inflammatory cytokine concentrations are elevated in chronic compared to acute wounds and can be modulated by collagen type I in vitro. Arch Dermatol Res. 2009 Dec 22. [Epub ahead of print]
4. Andriessen A, Polignano R, Abel M. Development and implementation of a clinical pathway to improve venous leg ulcer treatment. WOUNDS 2009;21(5):127-133

Fig 3: Situation at the start of The treatment with *SC

Fig 4: Granulation is showing

Fig 5: A healthy looking wound

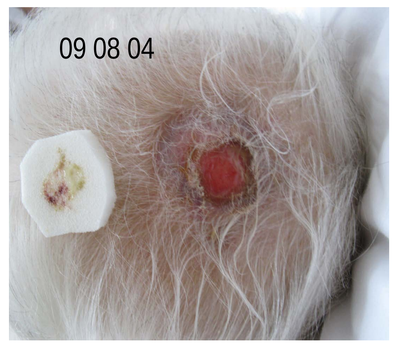

Fig 6: *SC after removal

Fig 7: The wound is closed

Case 3:

68 year-old female has hypertension (since 2003), an enhanced cardiac risk profile (since 2006) and a ruptured aortic aneurysm (2006). Her medication exists of: Ascal (calcium carbasalate), Nifedipine, Lithium and Fosinopril. Injury after falling down concrete stairs. Fig. 8. After debridement treatment is started with ***silver alginate and compression with short stretch bandages**** After one month (fig.9) treatment with *SC is started, covered with a foam. The wound is now rapidly closing.

Fig 8: Status on injury

Fig 9: *SC treatment is started

Fig 10: Epithelialization

Case 4:

52 Year-old male status after multiple bowel surgeries. After NPWT was discontinued (fig. 11) treatment with *SC covered with a foam was started. When the wound was almost closed (fig 15), the wound became critically colonized. At this time the patient was admitted for abdominal wall correction. Fig 11 – 16.

Fig 11: Situation after NPWT

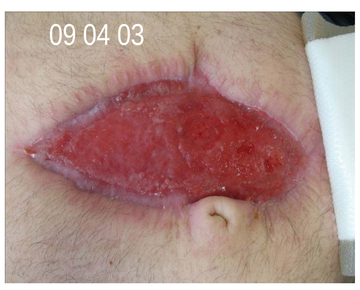

Fig 12: Healthy wound bed

Fig 13: Epithelialization

Fig 14: The wound is almost Closed.

Fig 15: Situation before abdominal wall correction

Fig 16: Post surgical status

*Suprasorb® C, **Suprasorb® P, ***Suprasorb® A +Ag, ****Rosidal® K, Lohmann & Rauscher GmbH^& Co KG, Rengsdorf, Germany