

# WOUND HEALING PROPERTIES UNDER A HYDROCOLLOID AND A HYDROGEL IN A CONTACT BURN PIG MODEL

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Purpose: To find a animal model suitable for evaluating wound healing after deep 2<sup>nd</sup> degree burns and a proper dressing to prevent infection and scarring in burns.

Method: One dark pigmented pig was burned with a 170° Celsius brass block (7cm by 7cm). On each side of the pig, 6 equal burn wounds were made. On the right flank the burn wounds were dressed with 10cm by 10cm hydrogel sheets and on the left side 10cm by 10cm hydrocolloid wafers were used. At every dressing change all wounds were photographed. On day 7, a first biopsy was taken (1 cm by 1cm, 7 cm long) at two wounds, one from the left and one of the right flank. This was repeated every 7 days until all wounds had been biopsied. Each biopsy sample was properly prepared for microslides and the samples were histologically examined.

Results: A faster epithelialization and more contraction under the hydrocolloid dressing was found. No bacteria and a very quiet inflammation were seen under the hydrogel. A significant higher amount of granulation tissue build up was found under the hydrocolloid dressing. A better quality of healing and less signs of scarring under the hydrogel dressing were obvious.

Discussion: The amount of granulation tissue does correlate with the formation of hypertrophic scarring in human burn wounds. It is interesting to look deep into the possibilities of a dressing that is able to control the inflammation process and by doing that has a significant less build up of granulation tissue. Additional studies are required to determine if the dark pigmented pig will provide us a reliable scarring model.

Product notations:

Hydrogel: Elasto-gel, Southwest Technologies, Inc., Kansas City, MO.

Hydrocolloid: DuoDerm, Convatec Ltd.