Use of negative pressure to promote healing of pressure sores and chronic wounds in 75 consecutive patients

Louis C. Argenta, M.D., Michael J. Morykwas, PH.D. and Robin A. Rouchard, P.A.-C.C.
Department of Plastic and Reconstructive Surgery, Bowman Gray School of Medecine, Wake Forrest University, Winston-Salem, North Carolina, 27157-1075, United States of America.
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Patients with chronic wounds (particularly bed sores) frequently are non-surgical candidates. Current treatment options are costly, traumatic and not particularly efficacious. A new device and technology which dramatically increases the rate of healing os these wounds is presented.

The device consists of an open cell foam with connecting tube and was placed into the wound space; the device and wound sealed with an adhesive plastic sheet. Cyclical or continuous negative pressure (50 - 175mm Hg) was applied to the foam.

Initial laboratory studies of full thickness defects in pigs were conducted to determine granulation tissue formation (n=5) and reduction of bacterial colonization (n=5) in treated vs control wounds Negative pressure treated defects in pigs showed a statistically significant increase in granulation tissue formation compared to conventionally treated wounds. Bacterial colonisation was decreased by 1000x compared to non-negative pressure exposed wounds after 4 days of treatment.

The technique has been used to treat 75 human wounds to date, including pressure sores, dehisced incisions, stasis ulcers, and other chronic non-responsive wounds. Almost all cases were unacceptable surgical candidates - nutritrional problems, elderly, or with extensive wounds where previous flaps had been turned. All patients showed significant improvement during treatment with negative pressure. No significant wound or systemic complications were encountered despite the extreme debility of many patients treated.

The application of negative pressure to pressure sores and chronic wounds promotes granulation tissue formation and wounds closure, greatly decreases the amount of 'hands on' care time, and can be used on non-surgical candidate patients. This divice can be used at home or in nursing homes with equal efficacy.