

BACKGROUND

A considerable amount of research has been conducted in recent decades to identify methods to speed up wound healing initiation in stalled chronic wounds; in particular, energy-based therapies. Due to the absence of the electrical current of injury in chronic wounds and the mimicking of that current through electrical stimulation, the application of exogenous electrical stimulation restarts the chronic wound repair process and plays a vital role in wound healing (1).

METHODS

A microcurrent generating wound device* was used to evaluate chronic wound healing outcomes at a wound healing center. Unique in its mode of action (2), the effects of the device are thought to promote wound healing initiation in chronic wounds through the presence of its low-level microcurrents. In the presence of a conductive fluid, the device generates approximately 2-10 microAmperes on its surface and has been observed to facilitate healing in acute wounds and stalled wounds of various etiologies (3-5). The device was used on five patients presenting with chronic ulcerations of various etiologies, including surgical wound dehiscence, traumatic ulceration and venous insufficiency. Wounds were treated per standard protocol with the device used as a primary contact layer, changed 1-2 times per week.

RESULTS

Significant reduction in wound size was noted at follow-up clinic visits, following application of the microcurrent generating wound device, with improved patient comfort and satisfaction. All wounds significantly reduced in size and achieved full closure. Cases 1 and 4, both surgical dehiscence wounds, completely closed following application of MCD. The non-healing ulcerations in cases 2,3 and 5 all responded positively to the MCD and showed rapid improvement.

CONCLUSION

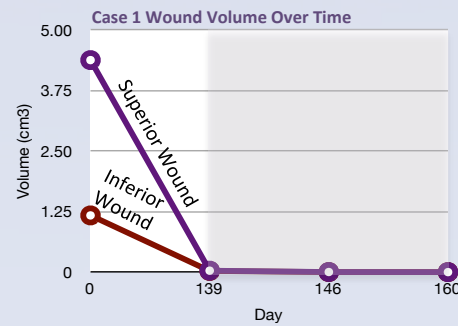
Four of the five presented cases began treatment with traditional SOC, including Ag dressings, creams and super-absorbent dressings, but initiated the MCD following slow healing rates with SOC and a more rapid healing response was observed when in contact with the MCD. Modalities that hasten the resolution of long-standing chronic wounds play an invaluable role in improving clinical outcomes, reducing costs for advanced therapies, and enhancing patient quality of life.

REFERENCES

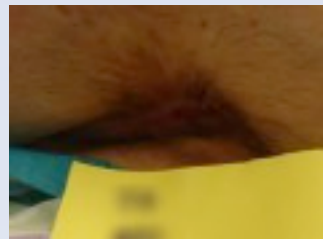
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Case 1: Surgical Dehiscence

65 yo male patient presented with surgical wound dehiscence following recent appendectomy. PMH: Ventricular tachycardia, left foot osteomyelitis, bladder cancer, ureter resection, CAD s/p triple bypass, bladder removal w/ ileal conduit, right heel surgery, diabetic.
Past tx: Silver alginate, gel adhesive hydrocellular foam dressing with border
Approach: MCD, hydrogel, steri-strip, gel adhesive hydrocellular foam dressing with border, dressing change every 3 days.



Initial



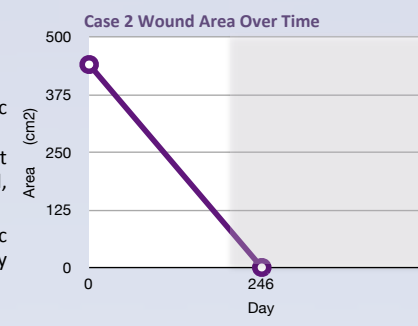
Dec 2012



5 Months

Case 2: Chronic Ulceration

67 yo male presented with bilateral chronic leg wounds
Past tx: barrier cream, silver non adherent dressing, superabsorbent dressing, abd, gauze roll
Approach: saline gel, ABD, viscoelastic paste, multi-layer compression, weekly changes



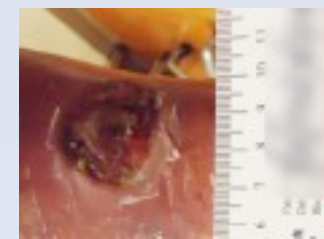
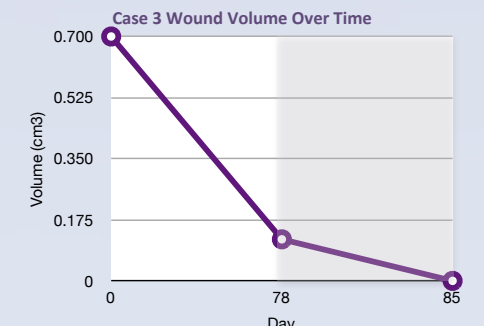
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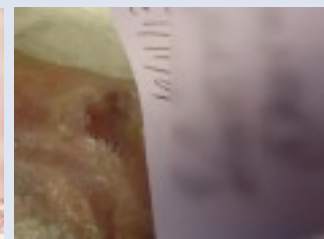
Day 246

Case 3: Traumatic Ulceration

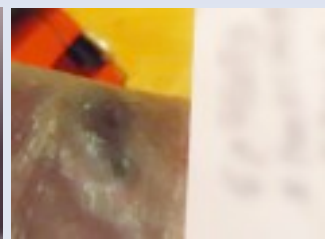
72 yo male presented with ulcer of traumatic etiology on posterior aspect of right calf for 2 months duration. 50% necrotic devitalized tissue. PMH: unremarkable
Past tx: silver nonadherent dressing, unna boot
Approach: MCD applied, hydrogel, abd, unna



Initial



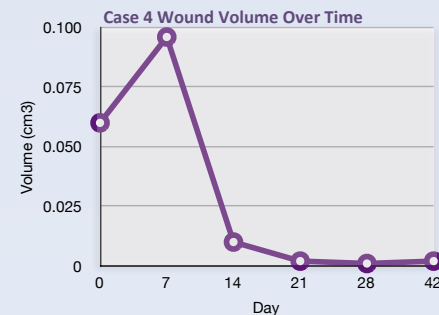
Day 77



Day 84

Case 4: Surgical Dehiscence

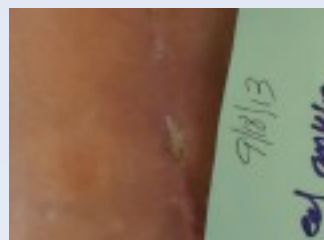
76 yo male with non infected full thickness ulceration on right medial ankle from wound dehiscence after surgery for peroneal nerve disease. Immunocompromised on chronic steroids. Complicating factors: Chronic use of corticosteroid & Clopidogrel, history of scleroderma.
Approach: MCD applied with hydrogel, super absorbent dressing, multilayer compression.



Initial



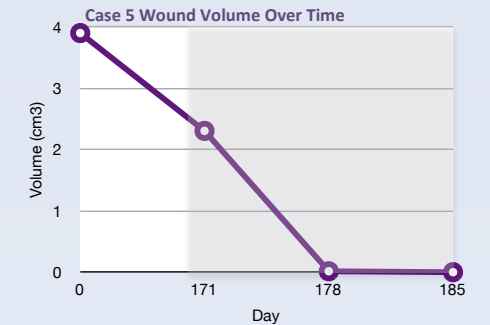
Day 28



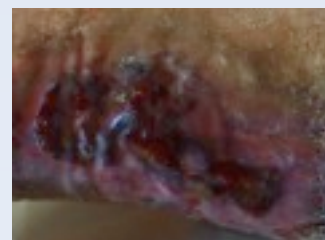
Day 42

Case 5: Venous Stasis Ulceration

48 yo male with painful venous stasis ulcers on the right medial leg. PMH: DVT, VSU, inferior vena cava clot
Past tx: collagenase ointment, bacteriostatic foam dressing, zinc ointment, super-absorbent dressing, abd pad, self-adherent wrap.
Approach: MCD, super-absorbent dressing, gauze roll, elastic tubular bandage, hydrogel, non-adhering dressing.



Initial



Day 170



Day 177



Day 184