Combination of High-Voltage Electrical Stimulation* and Acoustic Pressure Wound Therapy** for Treatment of Pressure Ulcers: A Case Series

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**Case Series**

Three patients with Stage III pressure ulcers and substantial slough/eschar were treated with a combination of twice-weekly HVES (100 pps, ≈70-105 V based on patient tolerance, 40 min) and LIFU (5-6 min), with conservative sharp selective or enzymatic debridement as the wound bed indicated.

**Conclusions**

This combination of HVES and LIFU as adjuncts to conventional pressure ulcer care seems consistent with previous studies demonstrating faster granulation formation and promotion of a healthy wound bed with utilization of these individual modalities. Further evidence-based studies are warranted to evaluate this combination of wound healing modalities.

**References**


**Dy** Low-intensity/frequency ultrasound (MIST Therapy System, Celleration, Inc., Eden Prairie, Minnesota) natron 950 Plus, Dynatronics, Salt Lake City, Utah

Disclosures: The author received no financial support for this study. Funding for poster production was provided by Celleration.

**Introduction**

High-voltage electrical stimulation (HVES)* is recognized as an effective adjunct to standard care for expediting healing of chronic pressure ulcers. Acoustic pressure wound therapy, a low-intensity/frequency ultrasound (LIFU)** has been shown to increase proportion of chronic wounds healed, promote faster wound volume reduction, and improve overall wound healing rates relative to conventional wound care alone. LIFU is administered to increase microbial load in a colonized wound bed, to decrease the inflammatory state, and promote granulation tissue in the wound bed.

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**Patient: 65-year-old paraplegic woman with type 2 diabetes**

**Wound:** Sacral pressure ulcer with slough and deep tissue injury (DTI); > 6 months duration prior to treatment at our facility.

**Dressings and Support:** Hydrofiber and foam; high-profile wheelchair cushion.

**Outcome:** 95% granulation and 98% closure in 10.5 weeks (Jan. 18 –Mar. 31).

**Patient: 15-year-old male with no pertinent medical history**

**Wound:** Unstageable pressure ulcer on left heel resulting from casting of a tibia fracture. Baseline (Apr. 30): area 12.3 cm², 5% slough, 95% eschar.

**Dressings:** Collagenase and gauze; changed to collagen with hydrofiber and foam Jun. 10.

**Outcome:** 98% granulation by 4.5 weeks (May 13 –Jun. 13); 97% closure at 11 weeks (May 13 – Jul. 30).

**Patient: 38-year-old woman with a traumatic degloving injury of the left heel**

**Wound:** Pressure ulcer on right heel developed after incision and drainage of degloving injury with loss of plantar fat pad on calcaneus. Baseline (Dec. 28): 5 cm², 60% slough, 40% granular.

**Dressings:** Gauze, collagenase, compression wrap; changed to hydrofiber and composites Jan. 23; changed to nonadherent petrolatum and gauze composite Feb. 20.

**Outcome:** 100% granulation in 2 weeks (Jan. 10–23); 95% closure in 8 weeks (Jan. 10 –Mar. 7); 99% epithelialized Mar. 12.