The management of complex wounds with the use of a bioelectric, antimicrobial dressing

**Exposed Bone**

- 69 y.o. male with wound secondary to excision of squamous cell carcinoma. Previous treatment was non-adherent dressing with vaseline gauze. Participant reported significant pain reduction with the use of the bioelectric dressing.

**Infected Wound**

- 38 y.o. female with type 1 diabetes presented with soft tissue infections and osteomyelitis on the lateral aspect of the right foot. Previous tx: 40 days NPWT, bioelectric dressing, followed with calcium alginates. 3 months later, bioelectric dressing was applied as an interface between NPWT sponge and wound site to obtain final epithelialization.

**Exposed Tendon**

- 43 y.o. male with history of diabetes presented with exposed tendon on the lateral aspect of the left foot. Wound treated with NPWT**. 3 interfaces were utilized under the NPWT device and compared: polyurethane foam dressing, vaseline gauze, and the bioelectric dressing.

**Exposed Cartilage**

- 65 y.o. male presented with wound secondary to excision of squamous cell carcinoma. Original tx: non-adherent dressing with vaseline gauze. Bioelectric dressing was easy to apply and served as a barrier to nasal secretion. Epithelialization event been observed at 2 months.

**Infected Wound**

- 58 y.o. male presented with wound secondary to excision of squamous cell carcinoma. Previous tx: calcium alginate. 3 months later, bioelectric dressing was applied. Better outcome was observed using the bioelectric dressing as an interface with NPWT.

**Infected Wound**

- 69 y.o. female with wound secondary to excision of squamous cell carcinoma. Previous tx: calcium alginate, NPWT used to prepare wound bed. Bioelectric dressing and vaseline gauze were both used and compared as an interface under the NPWT device. When granulation tissue was obtained, an acellular xenograph implant™ and skin graft was applied. Better outcome was observed using the bioelectric dressing as an interface with NPWT.

**Exposed Wound**

- 36 y.o. male with wound secondary to excision of squamous cell carcinoma. Previous treatment was non-adherent dressing with vaseline gauze. Participant reported significant pain reduction with the use of the bioelectric dressing.

**Trumatic Lesion**

- 58 y.o. physician with vascular insufficiency presented with a traumatic lesion. Previous tx: hydrocollide alginates, NPWT used to prepare wound bed. Bioelectric dressing and vaseline gauze were both used and compared as an interface under NPWT device. When granulation tissue was obtained, an acellular xenograph implant™ and skin graft was applied. Better outcome was observed using the bioelectric dressing as an interface with NPWT.

**Dehisced wound**

- 58 y.o. male presented with abdominal aortic aneurysm secondary to Peritoneal carcinomatosis. Previous tx: calcium alginate, NPWT. The use of the bioelectric dressing as an adjunct to NPWT better prepared the wound bed for healing.

**Wound Dehiscence**

- 58 y.o. male presented with abdominal aortic aneurysm secondary to Peritoneal carcinomatosis. Previous tx: calcium alginate, NPWT. The use of the bioelectric dressing as an adjunct to NPWT better prepared the wound bed for healing.

**Conclusion:**

Based on the results from the presented clinical case study observations, it appears that the application of an antimicrobial, close-proximity electrically active wound dressing may be effective in facilitating healing of severe, complex wounds. Future studies are needed to determine if the bioelectric dressing is applicable other acute and chronic wound settings.

**References:**

2. Sheftel SN. The role of a bio-electric, antimicrobial dressing in the healing of acute and chronic wounds [abstract]. Clinical Symposium on Advances in Skin and Wound Care, Las Vegas, NV, October 2008; (suppl) 217.