

Traumatic, full thickness leg wound in an adolescent healed by secondary intention using bioresorbable polymeric matrix impregnated with ionic and metallic silver and compression.

Stacy Amer-Davis, FNP; Tyler Fedak, LVN + Scripps Coastal Medical Group

Introduction

- Wound bed preparation and choice of appropriate dressings are crucial in the wound healing process.
- Microbial colonization of wounds can delay healing in acute wounds, including traumatic wounds.
- Bioresorbable polymeric matrix contain ionic and metallic silver within the layers which are slowly released into the wound bed providing antimicrobial effect over several days.
- The bioresorbable matrix provides a scaffolding for cell migration and also allows for growth and proliferation of fibroblasts and migration of keratinocytes on the wound bed surface. It also helps support normal vascularization and granulation tissue formation in the wound bed.

Method

- A case report of a 16 year old female who was involved in a roll over crash of a golf cart. She sustained + LOC, concussion and a large defect to the right lateral ankle.
- Sharp debridement was performed in 8 out of 13 visits, wound assessment was completed at each visit and compression was done for the duration of treatment.
- Bioresorbable polymeric matrix was used on visit 1 through 10 visits and changed weekly.
- Adverse events including signs of infection were monitored.

Photos

12/02/22



12/13/22



12/20/22



01/03/22



01/13/22



01/20/22



Case Report

- 16-year-old female MVA victim sustained a large defect to her right lower leg. She was evaluated by plastic surgery in the ER, who recommended surgical repair with flap or graft in the immediate future.
- She had necrotic tissue in the wound bed as well as exposed tendon and the defect was very close to bone.
- She was referred to the wound clinic as the plastic surgeon she saw in the ER was out of network for her insurance. We started treating her 5 days post injury..
- She was sharp debrided 8 times, compression was used each visit either with compression wrap or Tubigrip
- Bioresorbable polymeric matrix was used on visit 1 through 10 and visit 11 silver foam was used.
- Patient was completely healed in 12 visits.

Conclusions

- Bioresorbable polymeric matrix impregnated with ionic and metallic silver can be considered a viable treatment in large traumatic wounds.

References

- Rustogi R, Mill J, Kimble R.M. The use of Acticoat in neonatal burns. Science Direct 2005; November;31:7 878-882.
- Manning S, Humphrey D, Shillinglaw W, Crawford E, Pranami G, Agarwal A, Schurr M. Efficacy of a Bioresorbable Matrix in Healing Complex Chronic Wounds: An Open-Label Prospective Pilot Study. Wounds 2020 November; 32(11): 309-318
- Herron M, Agarwal A, Kierski P et al. Reduction in Wound Bioburden using a Silver-Loaded Dissolvable Microfilm Construct. Adv Healthc Mater 2014 June; 3(6): 916-928