



Usage of a fully synthetic bioresorbable antimicrobial matrix containing ionic and metallic silver to treat difficult-to-heal leg ulcers suspected of biofilms



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Introduction

Leg ulcers can be difficult to heal even with adequate compression and advanced dressings. Leg ulcer etiology and comorbidities confound the healing process. There are many antimicrobial dressings on the market and several matrices but a cost-effective option that combines the benefits of both to combat wound bed contamination/colonization while providing a healing environment remains elusive. Three recalcitrant wounds were treated with a fully-synthetic wound matrix* composed primarily of bioresorbable polyvinyl alcohol, with a polymeric surface coating containing ionic and metallic silver.



Case 1

68 y.o AAF with 5 year history of a right lateral calf wound colonized with *Candida parapsilosis* by culture and has copious malodorous lymph drainage.
PMH: phlebotymphedema with myxedema, HTN, IDDM2, HLD, CKD-stage IV, CHF, CAD, hypothyroidism, obesity



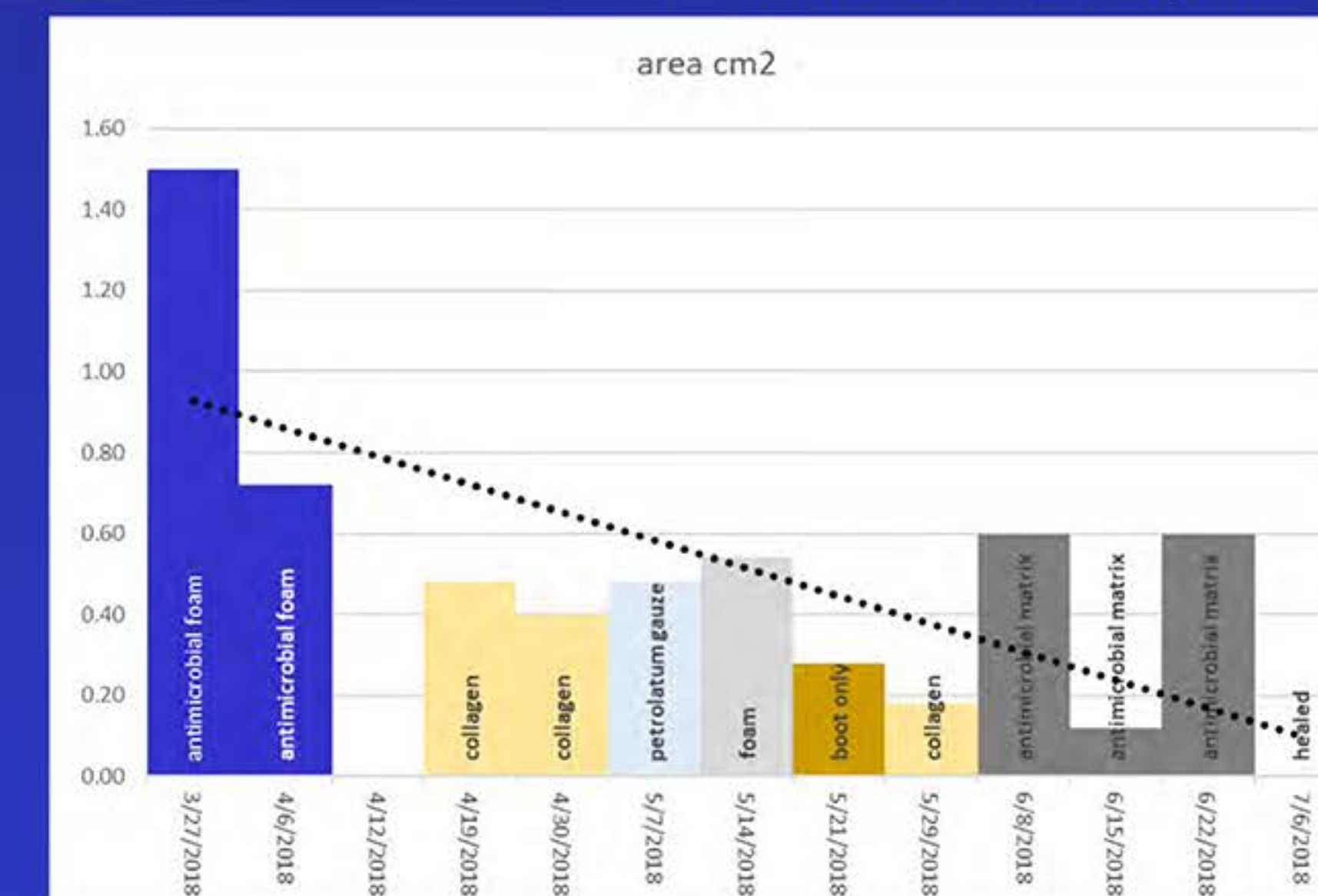
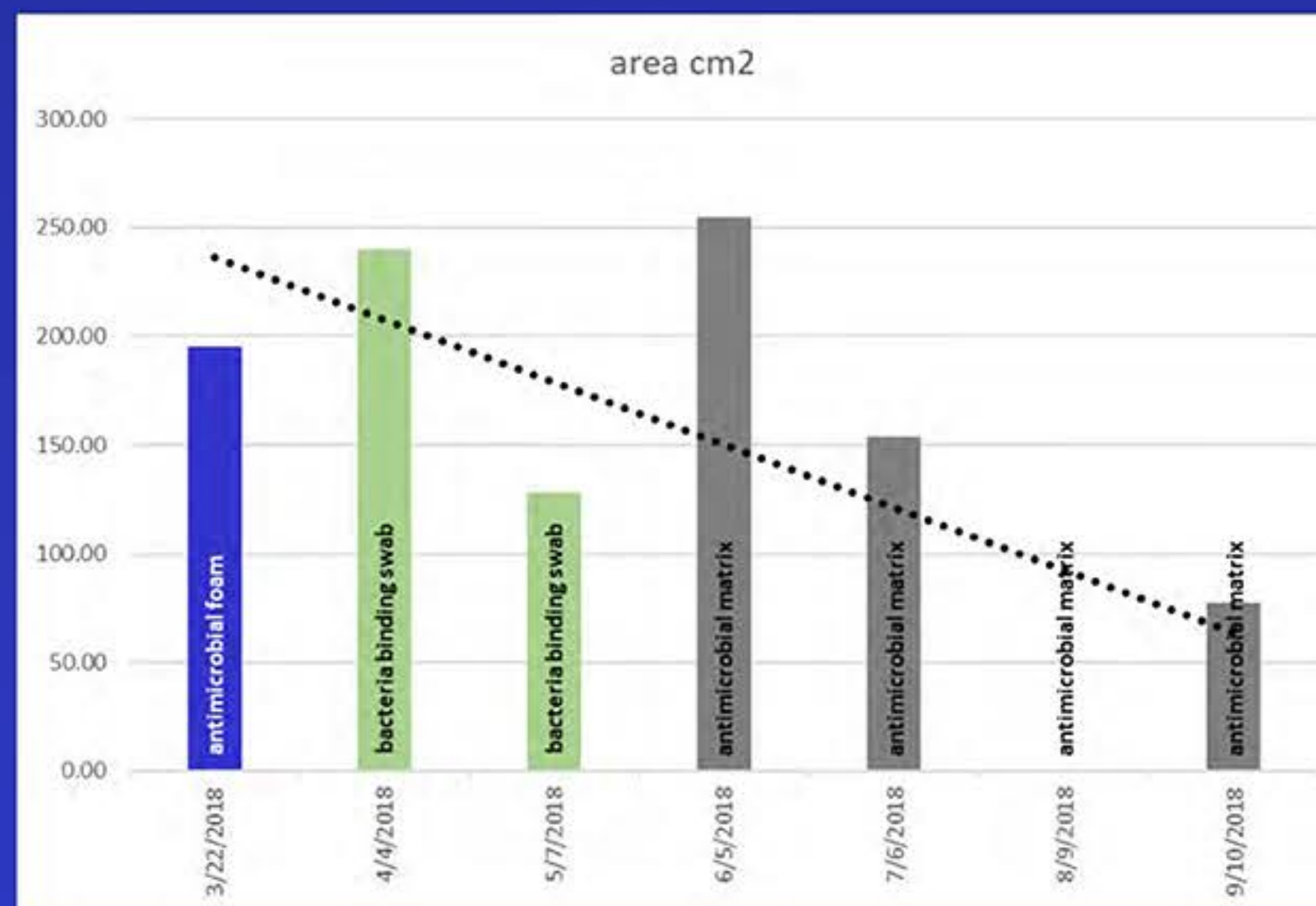
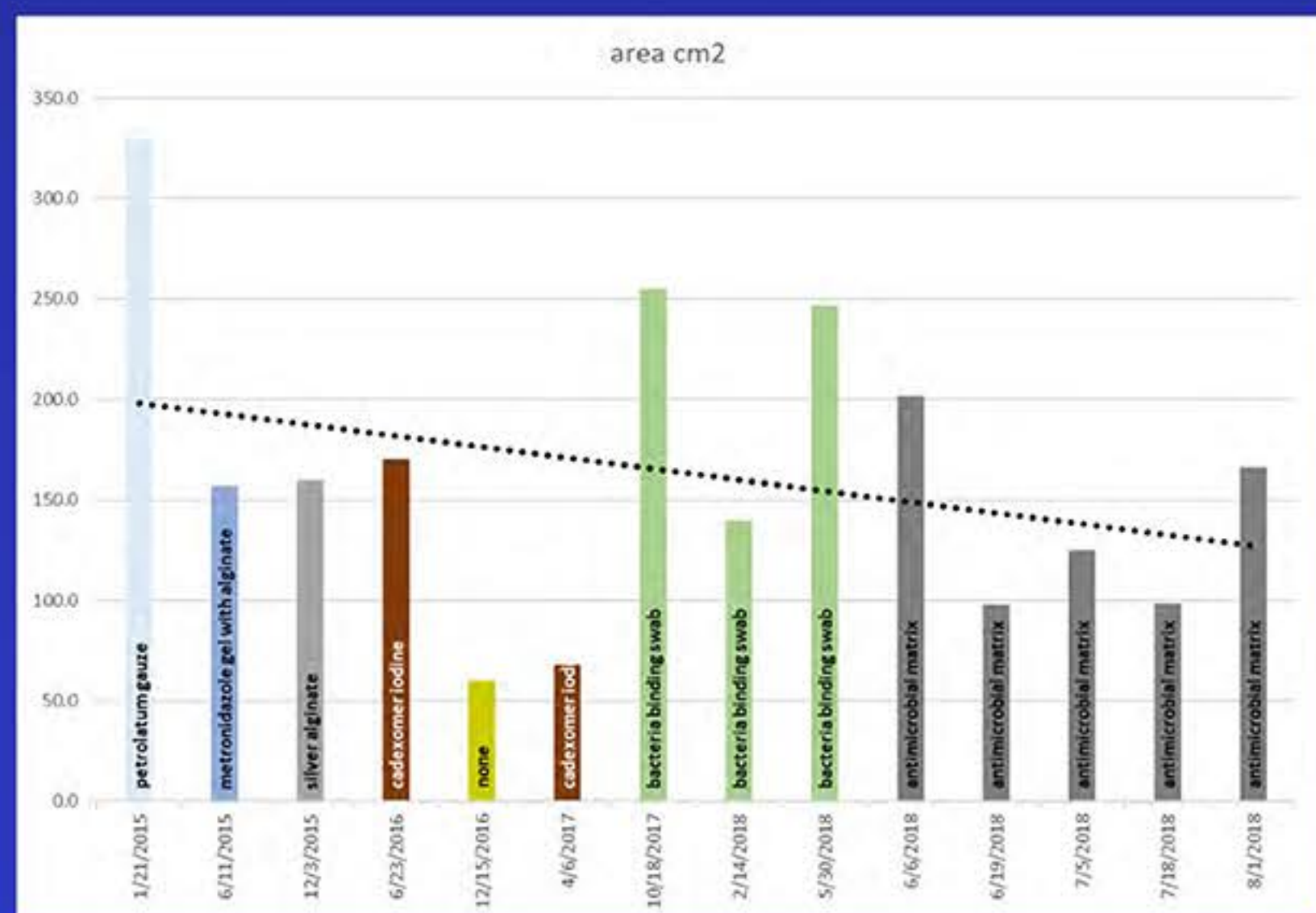
Case 2

71 y.o. WF with a 2 year history of a large left calf ulcer that has some healing and subsequent 'sloughing' of new skin related to bullous diabeticorum.
PMH: CAD, Chronic back pain, IDDM2, DJD, GERD, HL, HTN, Hypothyroidism, Obesity, Pulmonary fibrosis, RLS



Case 3

72 y.o. WF with a 3 year history of non-healing surgical ankle wound for which split thickness skin grafting and negative pressure wound therapy has failed. The persistent slough covered bed was routinely treated with a soft fiber debridement pad to remove biofilm.
PMH: GERD, HL, Osteoporosis



When the patient was adherent to the weekly dressing changes and daily use of the lymphedema pump, the wound measurements and images show marked improvement in healing.



With four months of synthetic bioresorbable antimicrobial matrix dressing with Duke Boot, and while the patient continued to struggle with BD and required more frequent dressing changes due to drainage, the ulcer has maintained an overall healing trajectory.



After 33 months from original ankle surgery and subsequent readmission with split thickness skin grafting, mechanical debridement, compression and multiple advanced dressings, this patient healed after 3 applications of a synthetic bioresorbable antimicrobial matrix as the primary dressing,

Conclusion

After cleansing each wound with hypochlorous acid wound cleanser, use of the gold standard multilayer compression wrap (Duke Boot), the synthetic bioresorbable antimicrobial matrix dressing was applied to the wound bed, covered with a secondary dressing for moisture control and underwent either weekly or twice weekly dressing changes. All wounds have demonstrated improved progress towards healing indicating that this easy-to-use antimicrobial matrix can both combat stubborn biofilm and provide healing scaffolding to a wound bed that otherwise was not healing. Matrices are a valuable adjunct to compression for treatment of leg ulcers. But without effective management of the bioburden in the wound bed, healing may not occur.

Compression therapy combined synthetic antimicrobial matrix is an economical and effective approach for managing difficult to heal leg ulcers.

*MicroLyte Ag Antimicrobial Matrix was provided for this study by the manufacturer, Imbed Biosciences, Madison, WI