

Treatment of deep foot wounds when negative pressure is not feasible: retrospective case series using porcine urinary bladder matrix



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INTRODUCTION

Deep podiatric wounds with necrotizing soft tissue infections pose significant challenges in podiatric limb salvage, particularly when wound geometry, exposed structures, or anatomical location preclude the use of negative pressure wound therapy (NPWT). Porcine urinary bladder matrix (UBM) (Figure 1) is an extracellular matrix scaffold with demonstrated success in managing complex wounds with exposed structures, acute and chronic wounds in the lower extremity.



Figure 1. Micronized urinary bladder matrix (UBM) (MicroMatrix) Integra LifeSciences Corporation, Princeton, NJ

OBJECTIVE Investigate the efficacy of micronized UBM to support management deep foot wounds, complicated with a necrotizing soft tissue infection without the use of adjuvant NPWT via small case series.

METHODS

A retrospective chart review was conducted of two patients with necrotizing soft tissue infections of the foot managed surgically by a single podiatric surgeon, where micronized porcine UBM was used to manage the patient's wound. Following thorough debridement, micronized porcine UBM was hydrated with saline and applied as a paste to fill deep tissue defects involving exposed tendon, periosteum, and soft tissue. NPWT was not feasible due to wound configuration and challenging anatomical location constraints. After UBM was utilized, wounds were covered with standard wound dressing protocol. Time to healing was the primary endpoint analyzed.

R E S U L T S

CASE 1

49-year old white female, BMI 22.6

Comorbidities – Diabetes Mellitus, fibromyalgia, chronic migraine
Case Presentation - 2 week-old traumatic wound (stepped on glass)
Labs – CRP 30, Lactate 4.8, WBC 12, Hemoglobin 11; CRP + Lactate = necrotizing fascial infection. Cultures MSSA+, underlying osteomyelitis



CASE 2

26-year old white male, BMI 36

No comorbidities
Case Presentation - brown recluse spider bite
Labs – Cultures MRSA+



DISCUSSION / CONCLUSION

Porcine urinary bladder matrix may be a useful adjunct for podiatric surgeons managing deep foot wounds, particularly when complicated with necrotizing soft tissue infection, when NPWT is not feasible, or exposed bone and tendon. In this limited series, Case 1 closed within 9 weeks, and Case 2 closed within 7 weeks both without the need for a skin graft. This case series demonstrates UBM's utility in complex wounds.

References

- McRobert et al. 2024 Wounds UK
- Valerio et al. 2015 Regen Med
- Behrens et al. 2018 PRS Global Open
- Cotler et al. 2023 Wounds

Disclosure:
TZ is a consultant for Integra LifeSciences

