

Dermal Matrix and Its Potential in Orthopaedic Trauma

Micah Christenson, BA; Sydney C. Boike, BS; Gennadiy Busel, MD; Haley Puckett, MD; Rebekah Kleinsmith; Daniel Sullivan; Sandy Vang, BA; Mehek Jahan; Brian P. Cunningham, MD

Purpose: This study's intent was to evaluate outcomes of patients treated by orthopaedic surgeons with dermal matrix (DM) for wound management.

Methods: Data collection in a multicenter retrospective chart review of patients with non-closable wounds treated with DM was completed for demographics and comorbidities, alongside origin, treatment, and wound healing. Exclusion criteria were lost to follow up and ongoing treatment.

Results: DM was applied to 55 wounds in 54 patients; four patients were lost to follow up, seven had ongoing treatment, and three died. The final cohort consisted of 40 patients, with 41 wounds. There were 22 males and 18 females, (average age 59 ± 20.1 years). Wound origins were from postoperative ($n = 12$), traumatic ($n = 16$), and infectious ($n = 13$) etiologies. The average number of washouts prior to application was 2.2 ± 1.0 . One patient required salvage plastic surgery involving the sural flap. One wound had failure of a skin graft after DM with subsequent treatment by secondary healing. In 32 of 41 (78.0%) wounds with DM, healing occurred without subsequent skin graft. Average documented time to healing was 163.5 ± 138.8 days, which was inflated because of lost follow up and reappearance well after healing. Multiple patients in the study had wounds with exposed bone, tendon, or hardware at the time of DM application (see figure).

Conclusion: DM is a reliable alternative for wound management that does not require subspecialty training.



Time from presentation to our hospital to complete healing after dermal matrix application (R Image) was 102 days