

Closed Trans Metatarsal Amputation Treated with Bovine Dermal Collagen Matrix* as Wound Healing Adjunct

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PATIENT HISTORY

83-year-old male with type 2 diabetes, polyneuropathy, hyperlipidemia, hypertension, peripheral arterial disease, seen for inpatient consult. He initially sustained a blister to the plantar left foot in January 2024, which did not heal. Outpatient arterial studies had shown that he had adequate perfusion but a repeat CTA while inpatient showed occlusion to ATA bilaterally. During admission, Interventional Cardiology performed angiogram.

PURPOSE

Trans metatarsal amputation (TMA) is commonly performed to address complications of diabetic foot ulcers, including infection and ischemia. The healing rates and associated complications following closed TMA are critical factors in determining the success of the procedure and the subsequent outcomes for patients. (1)

We present a case of closed trans metatarsal amputation utilizing a fibrillar particulate collagen matrix as a wound healing adjunct. Bovine dermal collagen matrix* is an absorbent extracellular matrix (ECM) comprised of Type I and Type III bovine collagen that closely resembles the human body’s native collagen and is designed to support the wound healing process. Fibrillar collagen derived from bovine dermis is biocompatible, biodegradable, and is used in this case as a wound healing adjunct.

RESULTS

Trans metatarsal amputation with primary closure was performed in an 83-year-old comorbid male following infected ischemic foot ulcer. Bovine dermal collagen matrix* was utilized under the surgical closure to provide a collagen scaffold to aid and maintain wound healing. Time to heal was 12 days. Surgical wound closure and strength were maintained without complications upon follow up at days 49 and 83. Wound area reduction was 91% by Day 21.



Day 0: Patient admitted with DFU that started as a plantar blister

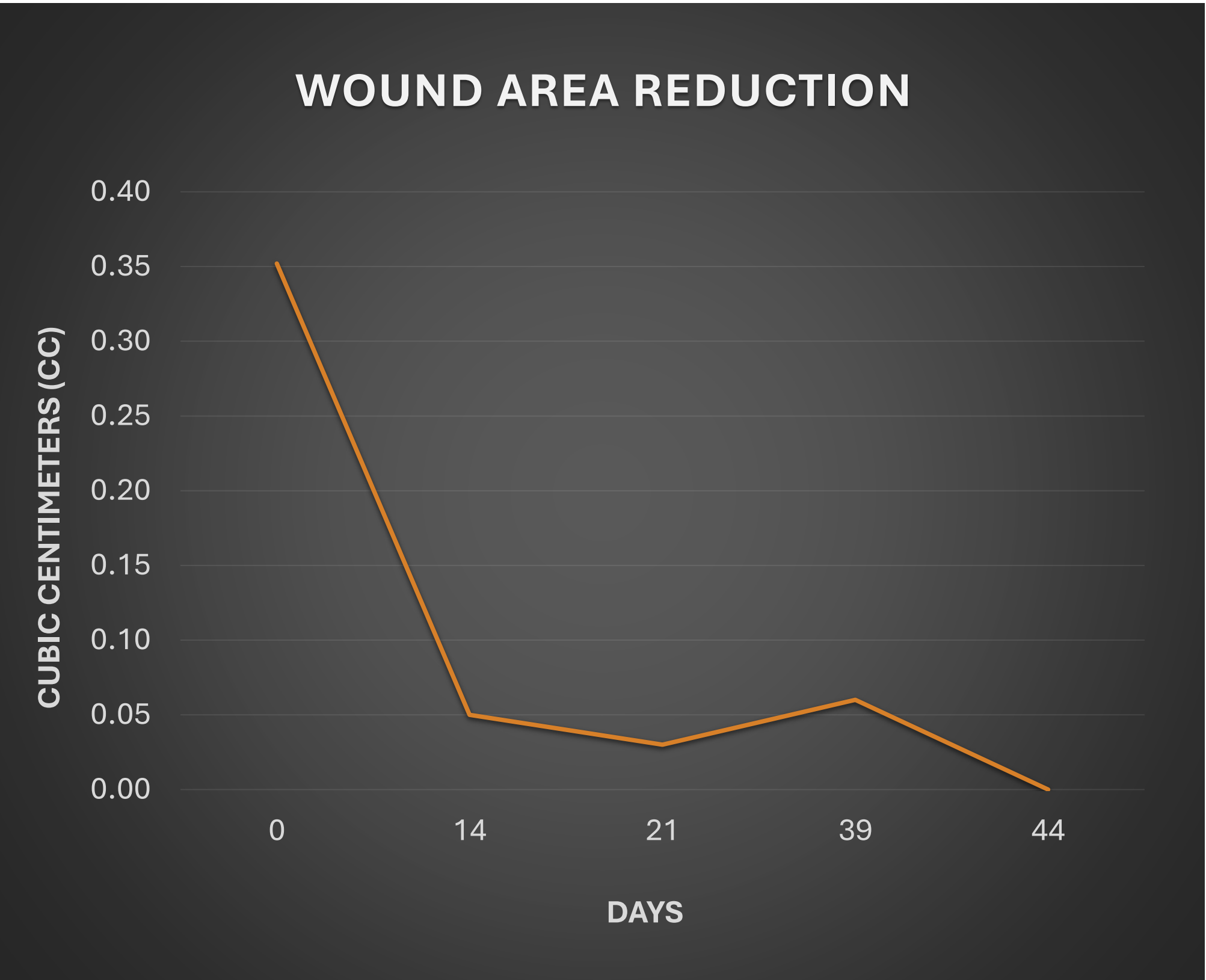


Day 14: 9/13/2024 Left foot S/P TM with implantation of antibiotic beads and BDCM* in the wound bed and to the incision line.



GOAL

Obtain wound closure in diabetic with comorbidities and previous history of neurotrophic wounds and TMA. Provide BDCM* as an ECM scaffold to support granulation tissue formation and epithelialization.



METHOD

Bovine Dermal Collagen Matrix* (BCDM) (0.5 g) hydrated with 2 mL normal saline (4:1 ratio fluid to HELIOGEN) applied with non-adherent bandage

DISCUSSION

Obtain wound closure in diabetic with comorbidities and previous history of neurotrophic wounds and TMA. Provide BDCM* as an ECM scaffold to support granulation tissue formation and epithelialization.



Day 21: S/P TMA with 91% wound area reduction



Day 26: S/P TMA- wound closed



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