Clinical Case Report

Bunion Ulcer - Diabetic

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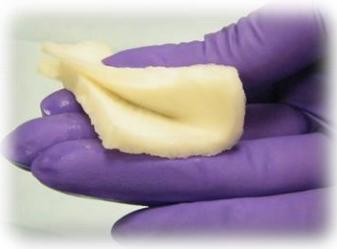

bio-ConneKt®

Wound Matrix

MLM Biologics Inc.

bio-ConneKt® Wound Matrix

Bunion Ulcer - Diabetic

A Case Report

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ABSTRACT

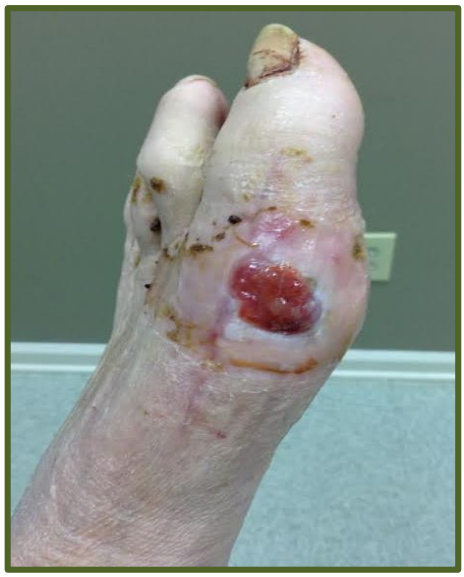
A 64 year-old male was presented for a surgical consultation to repair a bunion that was causing recurrent ulceration on the medial side of the first metatarsal. Further to bunion surgery, the area proximal became necrotic due to lack of perfusion and resulted in an ulceration. Although under strict control with insulin, the diabetic background of this patient warranted extraordinary care to help close the ulcer to prevent potential infectious complications.

Use of bioengineered skin products in the physiological setting of this wound proved unsuccessful. As an alternate, the **bio-ConneKt® Wound Matrix**, a FDA–cleared ECM-based advanced wound care dressing, was used as a treatment option. The biochemical stability of collagen in the **bio-ConneKt® Wound Matrix** enables minimizing repeat applications, and offers structural robustness to maintain continued contact with the wound bed in challenging circumstances. The combination of the above two features were preferred features in this patient, and with a single application of the product was able to effect complete wound closure in 6 weeks.

HISTORY

Past Medical History: Medical history was positive for Insulin Dependent Diabetes Mellitus and HTN. Patient is a non smoker and diabetes under strict control. Recurrent ulcerations due to bunion deformity not correctable with pressure relieving shoes for several years.

PE: General physical examination was unremarkable. Vascular examination demonstrates intact pedal pulses. Neurological exam shows complete loss of protective sensation to b/l lower extremities to the level of ankle joint. Medial 1st metatarsal exhibited atrophic tissue and noticeable scarring. Patient also had a bunion deformity that placed extra pressure to the medial first metatarsal and made shoe gear impossible to wear. Having suffered multiple previous ulceration to this site, the goal was to correct bunion deformity and prevent future ulcerations.



Initial Wound Presentation

TREATMENT

Surgical procedure: Bunion correction surgery went through without complications. Approximately 2 weeks post surgery, patient developed an area of non-viable skin on the medial metatarsal head, which ulcerated full thickness down to the capsule. Wound measured 2.5 x 2 x 0.4 cm.

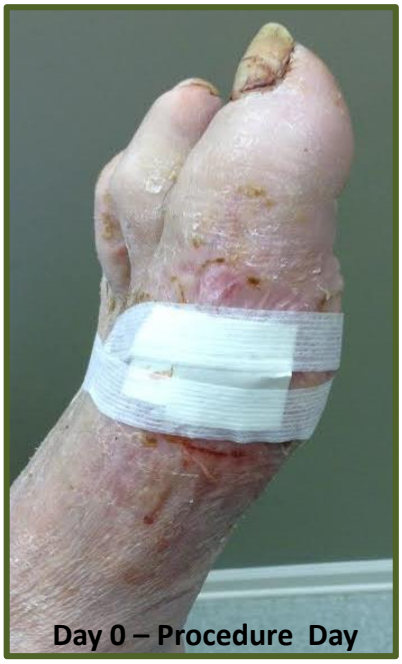
After excisional debridement, wound closure was attempted with a bioengineered skin graft. Following no change in wound quality or dimensions after a week, treatment was discontinued.

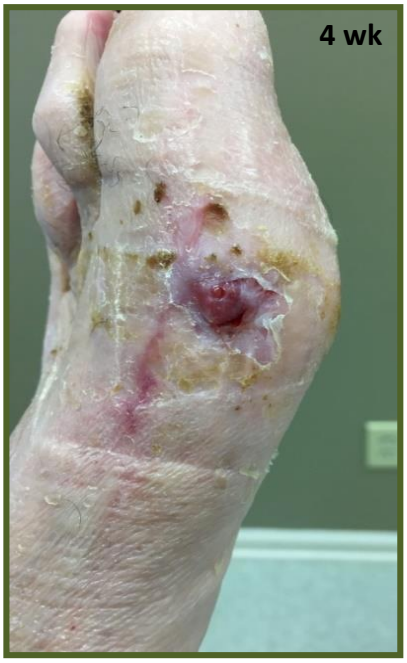
Procedure Day: Additional debridement was done prior to placing a hydrated bio-ConneKt® Wound Matrix to the wound bed. The product was contoured and secured to wound bed with Steri-Strips. An Unna Boot was applied to relieve pressure.

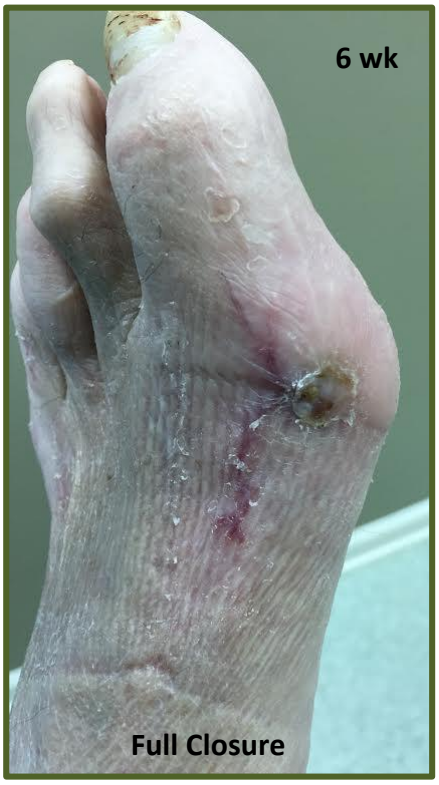
Follow-Up: Weekly dressing changes were performed with reapplication of silver dressing and continued Unna Boot use. The product and Steri-Strips were left intact, and changes only involved outer dressings.

Week 4: Steri-Strips were removed, and wound evaluation revealed significant decrease in size. Silver foam and Unna Boot was applied.

Week 6: Complete healing seen at follow-up visit.







Dr. Bednarz's concluding remarks:

" Recurrent bunion wounds due to a prominent medial metatarsal bone was unresponsive with palliative care and pressure relieving shoes. The tissue necrosis ulcer following corrective surgery to the metatarsal head was further complicated by his diabetic background. Use of the ***bio-ConneKt® Wound Matrix*** *helped in successful healing preventing additional complications."*

bio-ConneKt® Wound Matrix

5 Differentiating Features

The bio-ConneKt® Wound Matrix is a next generation, all biologic, FDA 510(k) cleared wound dressing. It is comprised of reconstituted Type I collagen that is stabilized, sterilized to SAL 10^{-6}, and stored at room temperature.

- **Hydrophilic scaffold to facilitate rapid fluid absorption (0.5cc per sq. cm. of surface area)**
- **Stabilized collagen to prevent premature digestion in wound bed**
- **Porous matrix to enable optimal host cell infiltration**
- **Easily conformable to ensure maximum contact with wound bed**
- **Material designed to minimize repeat applications**

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