Case Study Report

MicroMatrix® and Cytal® Wound Matrix 2-Layer devices facilitate closure of venous stasis ulcer

Age: 58 **Sex:** Female **BMI:** 44.5

Location of Wound: Left foot.

Comorbidities: Peripheral vascular disease, venous stasis, peripheral edema, morbid obesity, peripheral neuropathy, mental retardation.

Length of Stay: 4 days.

ACell Product(s) Used: MicroMatrix, Cytal Wound Matrix 2-Layer device.

Outcome: Patient discharged 3 days post-ACell wound device application; full closure achieved in 47 days with minimal scarring in a group home setting, despite significant patient comorbidities.

Clinical Presentation and Case Background

A 58-year-old female with a history of venous stasis dermatitis of the left foot was brought to the outpatient wound clinic with symptoms of swelling, pain, and drainage from a chronic dorsal wound that started as a severe dermatitis that was scratched open, and has remained open for ten months.

Examination showed a large edematous draining ulcer with some granulation tissue extending from the toes to the midfoot, with cellulitis extending from the foot into the lower leg. The patient was admitted to the hospital for IV antibiotics and surgical debridement. The patient has significant comorbidities and resides in a group home.

Prior to admission, the wound was initially managed by a skilled visiting nurse using Dakin's solution and a hydrofiber dressing, with dressing changes every other day. However, the leg could not be elevated consistently due to a malfunctioning bed. The patient was brought into the wound clinic once a month for debridement and dressing application and was unsuccessfully treated with various wound management options including: a cellulose, collagen, and silver matrix dressing; Negative Pressure Wound Therapy (NPWT); and medical-grade honey. The treatment goal was to obtain wound closure with a product or device and protocol that was easy to maintain in the group home setting.

Management of Venous Ulcer

One day following admission and initiation of IV antibiotics, the wound was surgically debrided using the VersaJet (Smith & Nephew) hydrosurgery system, creating a full-thickness wound exposing the underlying muscle (Figures 1 and 2). The debrided wound measured approximately 7.0 cm long x 8.0 cm wide x 0.2 cm deep. No undermining or tunneling was present.

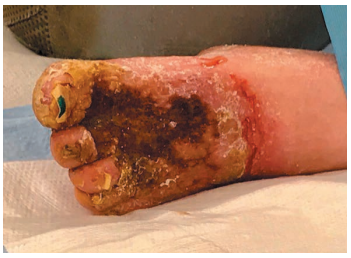

Figure 1. Initial wound presentation prior to debridement application.

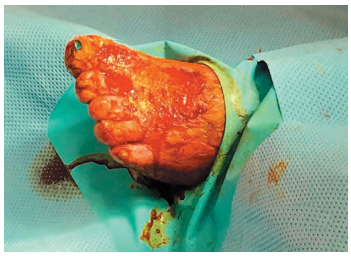

Figure 2. Wound debridement performed prior to MicroMatrix and Cytal Wound Matrix application. Wound dimensions following debridement were 7.0 cm x 8.0 cm x 0.2 cm.

Approximately 1,000 mg of MicroMatrix particulate was applied to the wound (Figure 3) followed by a single 7 cm x 10 cm Cytal Wound Matrix 2-Layer device (Figure 4). The ACell wound devices were covered with a nonadherent dressing and hydrogel, followed by a bulky gauze bandage and a self-adhering compression wrap bandage. The patient's foot and ankle were also immobilized.

Figure 3. Initial application of MicroMatrix.

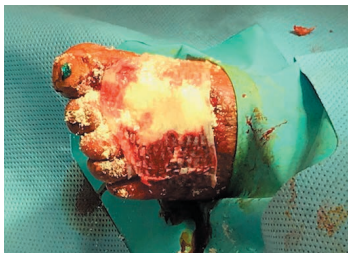

Figure 4. Initial application of Cytal Wound Matrix.

Outcome of Management and Follow-up

The patient was discharged to the group home three days following MicroMatrix and Cytal Wound Matrix 2-Layer application, with the leg remaining elevated and dressed with compressive dressings. A visiting nurse changed the dressings and compression wrap every four days and the patient was brought to the outpatient wound care clinic for follow-up.

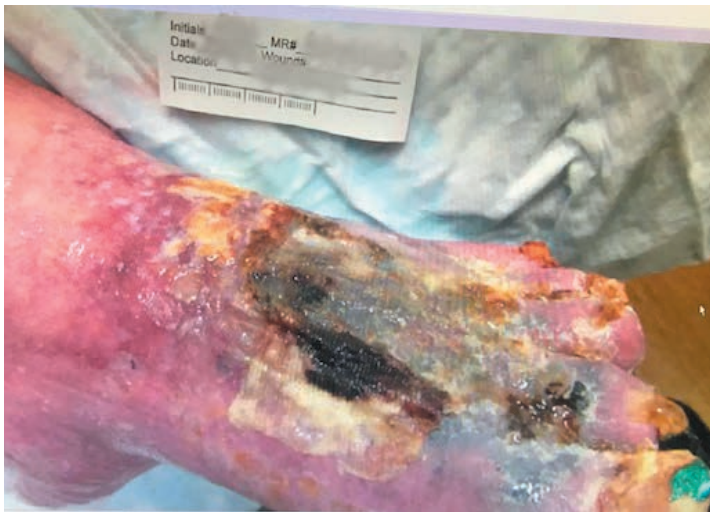

Figure 5. Follow-up at day 27, demonstrating progress of wound closure.

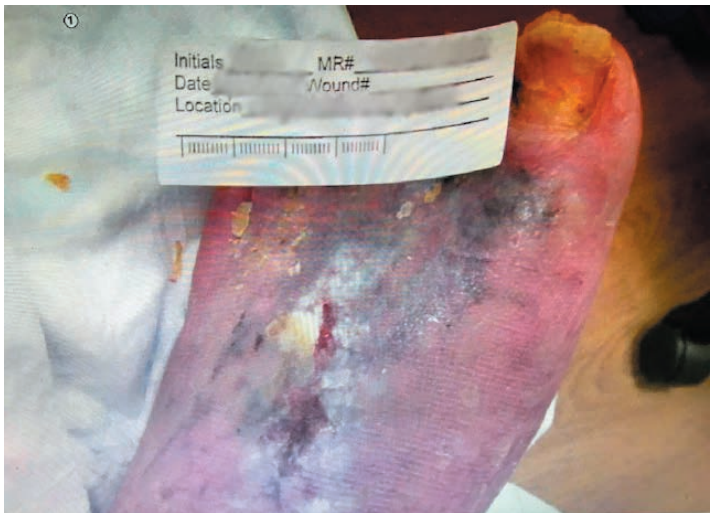

Figure 6. Follow-up at day 47, demonstrating final wound closure.

The wound showed positive signs of healing at day 27 (Figure 5).

Full closure of the wound was achieved 47 days post-ACell wound device application (Figure 6). The treating physician noted a healing response that displayed minimal signs of scarring. There were no complications within 30 days of ACell device application.

Why this Patient was a Candidate for ACell Product

Due to the patient's limited access to care, there was a need for a large graft that would keep the wound moist and be easy to maintain with a simple dressing change protocol. Wound management with MicroMatrix and Cytal Wound Matrix 2-Layer allowed for timely discharge to outpatient treatment, dressing changes at the group home, and ultimately, wound closure.

ACell Product Summary

Approximately 1,000 mg of MicroMatrix particulate and a single 7 cm x 10 cm Cytal Wound Matrix 2-Layer sheet were applied directly to the wound following debridement. No subsequent re-application of ACell wound product was required.

Source

This case was managed by Dr. James Vavra, DPM at a foot and ankle wound care clinic in Waukesha, Wisconsin, USA. Dr. Vavra is Board Certified in podiatric surgery.

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Note: The data presented here contain the opinions of and personal techniques practiced by the treating physician(s). The techniques presented herein are for informational purposes only. The decision of which techniques to use in a particular clinical application lies with the treating physician(s) based on patient profile, particular circumstances surrounding the procedure, and previous clinical experiences.

Note: In this case, the underlying use of the ACell wound device to manage wounds falls within the current indications for use of this device.

Note: MicroMatrix and Cytal Wound Matrix are composed of a porcine-derived extracellular matrix, also known as Urinary Bladder Matrix (UBM). The device is supplied in a particulate (MicroMatrix) and multi-layer sheet (Cytal Wound Matrix) configuration (including 1-Layer, 2-Layer, 3-Layer, & 6-Layer) in sizes up to 10 cm x 15 cm. These devices are intended for the management of wounds including: partial and full-thickness wounds, pressure ulcers, venous ulcers, diabetic ulcers, chronic vascular ulcers, tunnel/undermined wounds, surgical wounds (donor sites/grafts, post-Mohs surgery, post-laser surgery, podiatric, wound dehiscence), trauma wounds (abrasions, lacerations, second-degree burns, and skin tears), and draining wounds. The device is intended for one-time use.

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