

Treatment of a Venous Leg Ulcer using DermACELL®, a Human Acellular Dermal Matrix (ADM)

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CASE STUDY

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Diabetes is a group of metabolic disorders characterized by poor insulin secretion or impaired insulin function, with both leading to hyperglycemia. One of the long-term complications of this disease process is neuropathy. Neuropathy, particularly in the extremities, leads to poor sensation, which contributes to the occurrence of ulcers typically observed on the feet or legs of diabetic patients.¹⁻² Current treatments for diabetic ulcers include wound dressing, hyperbaric oxygen therapy, negative pressure therapy³⁻⁵, and, in advanced cases, amputation of the limb.

An alternative treatment for venous leg or foot ulcers related to diabetes involves the use of an Acellular Dermal Matrix (ADM), which has demonstrated application in a variety of medical procedures, including wound healing, soft tissue reconstruction, and sports medicine applications.⁶⁻⁹ These dermal matrices have been demonstrated to support cellular and vascular in-growth in vitro and in vivo.¹⁰⁻¹² One particular human allograft ADM, Dermacell®, is uniquely prepared, resulting in at least 97% DNA removal, and provided sterile at room temperature, ready to use.

The following case presentation involves treatment of a venous leg ulcer using this novel human ADM allograft, Dermacell AWM.

Patient

- 65 year-old male, Diabetes Mellitus; chronic venous insufficiency

Diagnosis

- Chronic venous ulcer along medial side of left leg not responding to standard treatment

Treatment

- Ulcer thoroughly debrided (Fig. 1)
- Non-meshed 4x4 Dermacell AWM placed and fixed using staples (Fig. 2)
- A non-adherent dressing was placed, changed four days later, then changed weekly

Outcome

- Uneventful post-operative course with no swelling or major exudates (Figs. 3, 4)
- Wound closed by three months post-operative (Fig. 5)
- Use of Dermacell AWM, was successful in treating chronic diabetic foot ulcer

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Figures 1. Pre-operative Wound



Figures 2. Surgical Application of Dermacell



Figures 3. One Week Post-Op



Figures 4. Four Week Post-Op Healing



Figures 5. Complete Wound Healing at 3 Months

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