

# Diabetic Patient with Pressure Ulcer

A case study by Michael K. Bednarz, DPM, AACFAS, Atlanta, GA

## CASE STUDY: SUCCESSFUL USE OF UNITE® BIOMATRIX ADVANCED COLLAGEN DRESSING IN THE MANAGEMENT OF A DIABETIC PATIENT WITH A PRESSURE ULCER AND EXPOSED ANTERIOR TIBIALIS TENDON

The Unite® Biomatrix from Synovis Orthopedic & Woundcare, Inc. is a highly organized, non-reconstituted collagen dressing for the management of wounds. A variety of factors contribute to the nature of a chronic wound bed, including elevated levels of matrix metalloproteinases (MMPs) which inhibit normal healing. Flexibly crosslinked and sterilized\* using proprietary technologies, the Unite® Biomatrix is able to resist premature degradation caused by these elevated levels of MMPs. Clinical results suggest that this collagen dressing helps maintain the wound bed in the healing phase to allow for healthy granulation tissue and wound closure. The Unite® Biomatrix is safe, biocompatible, allows for reliable fixation to the wound perimeter, and has a 3 year room temperature shelf-life.

### ABSTRACT

A 59 year old female presented with a Grade III pressure ulcer to the left anterior leg secondary to a tight compression dressing resulting in exposed anterior tibialis tendon for two months. The patient was evaluated and instructed that a below the knee amputation was her most likely prognosis. She was referred to a wound care center for an attempt at limb salvage. After one application of the Unite® Biomatrix collagen wound dressing, in conjunction with Negative Pressure Wound Therapy (NPWT), the wound healed in 12 weeks with no recurrent ulceration at the site at the time of this publication.

### PATIENT HISTORY

The patient's medical history included: insulin-dependent diabetes mellitus, endstage renal disease, coronary artery disease, and peripheral vascular disease.

### PHYSICAL EXAM

Vascular: +2/4 pedal pulses and femoral pulses b/l  
Neurologic: Sensation absent to level of ankle joint b/l per monofilament testing  
Musculoskeletal: Within normal limits

### PROCEDURE

The patient was taken to the OR where the left leg was scrubbed, prepped, and draped in the normal sterile manner. Debridement of all nonviable tissue was performed. The exposed anterior tibialis was salvaged post-debridement and full ankle motion was present at the time of surgery. Pulse-lavage irrigation with bacitracin was employed prior to application of Unite® Biomatrix.

The non-fenestrated Unite® Biomatrix was meshed at a 1.0 cm to 1.5 cm ratio to increase the surface area of the collagen dressing. Care was taken to position the Unite® Biomatrix directly on the granular base of the wound and over the exposed tendon. Surgical staples were used to circumferentially anchor the collagen dressing in place, taking care to intimately contour it to the wound bed. Excess collagen dressing was trimmed to allow a 2-4 mm border beyond the wound margins.



Figure 1. Initial presentation of wound with exposed anterior tibialis tendon.



Figure 2. Debridement and wound preparation.



Figure 3. Application of Unite® Biomatrix.



Figure 4. Application of non-adherent dressing.

# Diabetic Patient with Pressure Ulcer

A case study by Michael K. Bednarz, DPM, AACFAS, Atlanta, GA

Unite® Biomatrix was then covered with an application of non-adherent Adaptic® followed by a sterile Jones compression dressing.

## POST APPLICATION MANAGEMENT

The initial dressing change was made three days after surgery. At that time it was determined that the patient would also be treated with NPWT. To prevent direct contact between the NPWT sponge and collagen dressing, one layer of Profore® Wound Contact Layer was applied on top of the Unite® Biomatrix. NPWT was set at a continuous rate of 150 mmHg and was discontinued after two weeks when the collagen dressing was observed to be adhered to the underlying wound.

When NPWT was discontinued, the Unite® Biomatrix was covered with Mepilex® Ag (Mölnlycke) and subsequent dressing changes were performed every seven days until complete healing was achieved. At six weeks post-op, all the surgical staples were removed. The collagen dressing that remained on the wound was allowed to dissociate on its own.

As healing occurred, edges of the collagen dressing were trimmed as needed. Complete re-epithelialization was noted at 12 weeks post-application. It should be noted that the patient was allowed to bear weight in a fracture/CAM boot throughout the entire post-op period.

## RESULTS

- The combination of NPWT to enhance granulation and one application of the Unite® Biomatrix to support an environment for wound healing and re-epithelialization resulted in the healing of the two month diabetic pressure ulcer.
- At 23 months post-treatment, the patient has not experienced re-ulceration at the wound site. The patient has full ROM of the ankle joint with no adhesions of the anterior tibialis. She is back to her normal active lifestyle including walking and golfing.

## DISCUSSION

Synovis Orthopedic and Woundcare's novel stabilization and sterilization technologies are new to advanced wound management. The Unite® Biomatrix collagen wound dressing easily conforms to the wound bed and resists premature enzymatic breakdown. This case study demonstrates successful limb salvage using Unite® Biomatrix in combination with traditional therapies.

A case study by Michael K. Bednarz, DPM, AACFAS, Atlanta, GA



Figure 5. Two weeks post-op.



Figure 6. Six weeks post-op.



Figure 7. Nine weeks post-op.

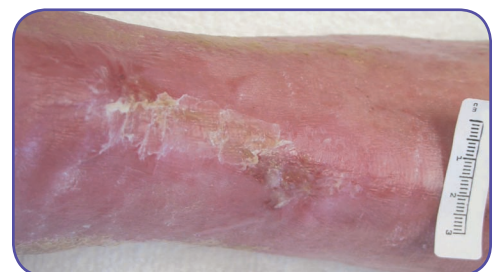


Figure 8. Final follow-up. Five months post-op.

For additional information and/or product support, please contact your local Synovis Orthopedic & Woundcare representative or Customer Service at 1-800-650-1816.

\*Passes USP Sterility Testing. Data on file.

Refer to the Synovis Orthopedic & Woundcare, Inc. Instructions for Use for the proper use, precautions, warnings, approved indications and labeling of the Unite® Biomatrix. CAUTION: Federal law restricts this product to sale by or on the order of a physician. Unite® is a registered trademark of Synovis Orthopedic & Woundcare, Inc. Mepilex® is a registered trademark of Mölnlycke Health Care. Profore® is a registered trademark of Smith & Nephew. Adaptic® is a registered trademark of Johnson and Johnson.

©2009 Synovis Orthopedic & Woundcare, Inc. All rights reserved. SAM0138 Rev B (09/09)

# Synovis®

Orthopedic and Woundcare, Inc.

6 Jenner, Suite 150, Irvine, CA 92618 USA  
Phone: 800.650.1816 Fax: 949.502.3245  
www.synovisorthowound.com



Authorized Representative  
in the European Community:  
AR-MED  
Runnymede Malthouse  
Egham TW20 9BD  
United Kingdom

