

# Case study: First metatarsal head following amputation

## Enluxtra® Humifiber® Wound Dressing Clinical Results

### CASE 6

#### Patient:

A 75-year-old male presented with a diabetic wound of the left foot first metatarsal head following toe amputation performed prior to presentation at our clinic. Patient's past medical history significant for insulin-dependent diabetes, hypertension, neuropathy, and mild chronic obstructive pulmonary disease treated with prednisone.

#### Wound Description:

The patient was referred to our clinic with a dehiscent incision over the first metatarsal head. The wound was edematous with copious drainage and maceration to the periwound area. Initial goals in this case were to reduce wound drainage and edema.

#### Initial Wound Treatment:

Culture-specific topical antibiotics, as well as numerous dressings and grafts were applied to this amputation wound during the first 7 months of treatment. Dressings applied to the wound included hydropolymer foam and oxidized regenerated cellulose/collagen matrix. Human fibroblast-derived dermal substitute was applied 5 times, and tissue-engineered skin was applied 6 times. Despite the wide array of advanced wound care products used, the ulcer continued to drain on to the peri-wound area, causing severe maceration of wound edges and loss of surrounding tissue. After 7 months of care, the wound had a foul odor and was covered with a thin biofilm layer (Fig. A). A decision was made to apply Enluxtra® Humifiber wound dressing to contain the drainage and maintain moisture balance throughout the wound and peri-wound.

#### Application of Enluxtra:

Prior to the first application of Enluxtra® Humifiber wound dressing, following debridement, the ulcer measured 5.0 x 3.0 x 0.5 cm. A topical, culture-specific antibiotic solution was applied, then Enluxtra was placed over the debrided area, overlapping 2 to 3 cm onto intact skin, and secured with a gauze wrap.

#### Wound Progression with Enluxtra:

After 3 weeks of 3-times weekly dressing changes with Enluxtra, peri-wound maceration was greatly reduced. Wound odor and signs of biofilm in the wound bed were no longer present. The wound bed was healthy, beefy red and epithelializing (Fig. B).



Diabetic foot ulcer with severe peri-wound maceration after 7 months of advanced wound care and prior to Enluxtra application



Three weeks following initial use of Enluxtra, maceration is considerably decreased, and the wound odor and signs of biofilm are no longer present.



After 6 weeks of Enluxtra, ulcer area was reduced by greater than 60% with minimal drainage.

A sheet of tissue-engineered skin was applied to the ulcer, over which the Enluxtra dressing was applied. Dressing change frequency was reduced from 3 times to 1 time per week.

After 6 weeks of Enluxtra dressings, the wound was considerably smaller and re-epithelializing normally (Fig. C). Tissue-engineered skin and Enluxtra were re-applied. At 8 weeks, skin islands were visible within the wound bed, indicating that the tissue-engineered skin graft was successful (Fig. D). Wound edges appeared moist, even over calloused skin of the patient who refused to offload or wear a boot.

After 12 weeks of Enluxtra dressings and tissue-engineered skin grafts, the wound bed remained optimally moist, and was 100% granulated. The wound size had been reduced to 1.5 x 1.5 x 0.25 cm (Fig. E). Use of Enluxtra was discontinued due to the 12-week time limit for the clinical evaluation. The patient subsequently lost home health services due to non-compliance and was lost to follow-up.

#### **User Experience:**

Patient preferred the Enluxtra dressing over all previously used dressings due to the dramatically decreased peri-wound maceration and reduction in dressing change frequency facilitated by the dressing. Clinicians reported excellent moisture control with Enluxtra, as the wound remained optimally moist without peri-wound maceration or leakage. Patient was also able to change his own dressing and provider care was cancelled.

#### **Clinical Outcomes/Conclusion:**

During use of Enluxtra, this previously stalled diabetic wound progressed to a clean, well-granulated wound that showed consistent size reduction at each weekly visit. The dressing maintained good contact with the wound and peri-wound areas, facilitating moisture control throughout, despite the patient's refusal to off-load his foot. Reduction in dressing change frequency with Enluxtra also led to cost savings and increased patient satisfaction.

Compared to all dressings previously used in this wound, Enluxtra provided the most optimal moist wound healing environment needed to progress the wound and maximize the effectiveness of tissue-engineered grafts.

#### **Reference:**

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After 8 weeks of Enluxtra and two tissue-engineered skin grafts, skin islands are visible within the wound bed. Wound edges appear moist, even over calloused skin.



Following a regimen of 12 weeks of Enluxtra and 3 tissue-engineered grafts, the wound bed remains optimally moist and 100% granulated.