

# Use of a Collagen ECM Dressing for the Treatment of a Recurrent Venous Ulcer in a 52-year-old Patient

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## Purpose

The purpose of this case study is to evaluate and review the use of a collagen ECM dressing for the treatment of a recurrent venous ulcer (left, medial ankle) in a 52-year-old patient. The dressing used for patient care was formulated with a collagen extracellular matrix compound to address deficiencies in the skin surface and promote faster healing. The results demonstrate the efficacy of a collagen ECM dressing for recurrent venous ulcer.

## Background

Deficiencies in the extracellular matrix of the skin are common in recurrent and hard-to-heal wounds. Although compression therapy is the standard of treatment for venous ulcers, dressings which include ECM material provide a template for ordering cellular structure at the wound site. This template promotes and supports the natural ability of the body to effectively heal, resulting in complete wound resolution in a shorter amount of time. The product used for this case included a 90 percent collagen base with 10 percent ECM components.

The dressing used for the treatment of the patient was selected based on the unique issues facing the patient. These include:

- Recurrent venous ulcer with initial venous ulcer requiring 100 days for healing.
- Compromised immune system due to uncontrolled diabetes.
- Comorbid health conditions impacting vascular health including: diabetes, hypertension and hyperlipidemia.

The collagen ECM dressing was utilized to help promote the body's natural defenses to promote wound healing.

## Case History

Case involves a 52-year-old male that was initially treated for a venous ulcer on the left, medial ankle between November 6, 2003 and February 9, 2004. Treatment included:

- Saline-based wound cleanser with a polyurethane foam with silver dressing.
- Expandable netting/gauze w/Unna Boot.

Patient lives at home with his wife is AAOx3, able to ambulate without assist and independent with all ADLs intact. Patient has a current history of hyperlipidemia, hypertension and type 2 diabetes. Current medications include: metformin, Lasix, simvastatin, losartan and Norvasc. Patient does not monitor blood glucose and denies alcohol, substance and tobacco use. Patient has a past history of C-3 fracture from a workplace accident which occurred in 1990.

## Current Treatment

Patient presented for treatment on August 5, 2013. At the time of admission to the wound care service, the patient had a three week-old venous ulcer. Initial measurements for the wound were: Length: (cm) 4.0, Width: (cm) 4.5, and Depth: (cm) 0.1. Treatment included:

- Application of primary dressing (collagen ECM) twice weekly or as needed.
- Application of secondary dressing (4x4 gauze).
- Expandable netting or gauze.

Patient wound was evaluated on August 29, 2013 and demonstrated 98 percent resolution. The patient was not seen in practice again until September 23, 2013 due to a lack of authorization for wound care services. At this time, wound resolution was noted.

## Discussion

Recurrent venous ulcers take, on average, 117 days to heal. This time is considerably longer than the healing time for an initial venous ulcer: 80 days. The initial venous ulcer in the patient required 10 weeks or 100 days to heal, suggesting that the recurrent venous ulcer would take longer. Through the use of a collagen ECM dressing the healing time of the recurrent venous ulcer was reduced to seven weeks or 49 days. This is well below the average and faster than healing for the patient's initial venous ulcer.

## Conclusions

The case illustrates the benefits of using a collagen ECM dressing for the treatment of recurrent venous ulcers. Even with efforts in place to prevent venous ulcer recurrence, the condition is likely to re-develop. Initiating treatment with bandages that improve the extracellular matrix at the wound site may be a viable approach to reducing healing time for patients with this condition.

## References

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## Wound Healing Process

Figure 1



Patient wound on August 5, 2013. Wound was three weeks old. Initial measurements for the wound were: Length: (cm) 4.0, Width: (cm) 4.5, and Depth: (cm) 0.1.

Patient wound on August 19, 2013. Wound was treated for two weeks. Measurements for the wound were: Length: (cm) 3.4, Width: (cm) 3.3, and Depth: (cm) 0.1.



Figure 2

Figure 3



Patient wound on September 23, 2013 Wound had been treated for seven weeks and was completely resolved at this time.