

The effectiveness of an ovine collagen extracellular matrix dressing for chronic non-healing wounds

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Introduction:

Chronic wounds often stall and fail to move through the repair process in an orderly and timely manner.¹ Clients with chronic non-healing wounds often possess multiple co-morbidities as well as factors that predispose them to chronic inflammation such as bioburden or excessive production of Matrix Metalloproteinases (MMPs).² The role that bioburden plays in the delay of wound healing is often underestimated. Bioburden and the associated inflammatory response lead to an overabundance of MMPs. Excessive MMPs may damage healthy tissue and impede the body's ability for angiogenesis. This results in delayed wound healing.³ In-activating the excessive MMPs, will support the returned balance of MMPs and TIMPs (Tissue Inhibitors of MMPs) to restore the repair process.⁴ The purpose of this practice innovation is to review the effectiveness of selecting an ovine collagen extracellular matrix (CECM) dressing* composed of 90% collagen and 10% extracellular matrix for chronic non-healing wounds.

Objective:

Evaluate the effectiveness of an ovine CECM dressing in chronic wounds that have not responded to other treatments.

Method:

Clients with chronic non-healing wounds of various etiologies that were non-responsive to a variety of topical dressings and adjunctive therapies were selected. The treatment plan included an ovine CECM dressing as the primary dressing. The dressing was changed every 5 to 7 days as determined by the clinician. Wound assessments and treatments were performed by the clinician. Any adverse events were monitored and documented.

Conclusion:

Data gathered from these three cases revealed healing was complete with no adverse events. The ovine CECM dressing was effective in supporting wound closure. Our wound center is initiating this product earlier in our treatment plan as a result of these types of outcomes.

REFERENCES

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* Endoform dermal template, Hollister Incorporated, Libertyville, IL

** Restore contact layer, silver, Hollister Incorporated, Libertyville, IL

Case Study #1 - Squamous Cell Skin Cancer – Post Mohs Procedure

90-year-old female patient who underwent Mohs procedure twice on right lower leg for squamous cell skin cancer.

- Past medical history includes: Hypertension, heart disease, arthritis, deep venous thrombosis in right lower leg which resulted in pulmonary edema.
- Previous wound care treatment: Antibacterial ointment with non-adhesive dressing, calcium alginate dressing with silver moistened with normal saline, hydrogel gauze covered with 4x4 gauze.

Wound duration: Non-healing for 25 days

Wound description-treatment:

Week 1: Initiated ovine CECM dressing covered with hydrogel and a non-adherent foam dressing. Above wound treatment was preformed weekly.



Week 1: 70% granulation tissue, 30% slough, popliteal artery visualized in wound base

Wound Dimensions: 2.7 cm x 1.5 cm x 0.3 cm



Week 4: Wound healed

Case Study #2 - Venous Leg Ulcer

66-year-old female developed a full thickness venous stasis ulcer on the right lateral lower malleolus.

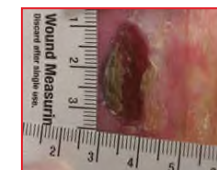
- Past medical history includes: Hypertension, venous insufficiency, bilateral lower leg edema, and neuropathy.
- Previous wound care treatment: Two failed bioengineered skin grafts, foam dressing with silver, contact layer dressing with silver, collagen dressing with silver, compression wraps.

Wound duration: Non-healing for 7 months

Wound description-treatment:

Week 1: Initiated ovine CECM dressing covered with hydrogel sheet applied twice a week with compression therapy.

Week 2: Due to excessive moisture, secondary dressing was changed to lipido-colloid contact layer with silver** covered with a silicone transfer dressing. Compression therapy continued to manage venous stasis.



Week 1: Full thickness with hypergranulation and epibole

Wound Dimensions: 2.0 cm x 1.0 cm



Week 3: Wound showed progressive improvement

Wound Dimensions: 1.4 cm x 0.5 cm



Week 15: Wound healed

Case Study #3 - Diabetic Leg Ulcer

63-year-old female presented to wound clinic post injury to scar tissue created from shaving leg.

- Past medical history includes: Type 2 Diabetes on oral hypoglycemic agent and diabetic diet. Peripheral neuropathy, hypertension, and bilateral varicose vein surgery. History of blunt trauma to the left lower extremity with evacuation of a large hematoma resulted in scar formation.
- Previous wound care treatment: Systemic antibiotic therapy for positive culture for heavy Staphylococcus aureus with resolution per repeat culture, compression wraps with following treatments for without improvement: calcium alginate with silver, silver hydrofiber, honey fiber, contact layer with silver.

Initial wound measurement: 2.8 cm x 1.5 cm x 0.3 cm

70 % granulation tissue, 30% slough and tan colored drainage

Wound duration: Non-healing for 2 months

Wound description-treatment:

Week 1: Initiated ovine CECM dressing covered with hydrogel sheet a silicone cover dressing with compression wrap. Dressings changed twice a week.

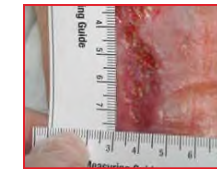
Week 2: Ovine CECM dressing covered with lipido-colloid contact layer with silver** due to concern associated with bioburden and excessive moisture.

Week 7: Epithelialization noted which separated original surface into 3 wounds. Treatment was held for 1 week due to personal commitment. Conventional dressing with compression stocking was used in the interim. Ovine CECM dressing covered with lipido-colloid contact layer with silver with dressings changed twice a week was continued on next visit.



Week 1: 100% granular

Wound Dimensions: 3.0 cm x 1.0 cm x 0.1 cm

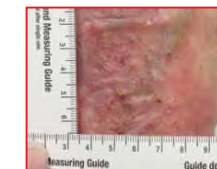


Week 7:

Wound Dimensions: 0.4 cm x 0.2 cm

0.5 cm x 0.5 cm

0.2 cm x 0.2 cm

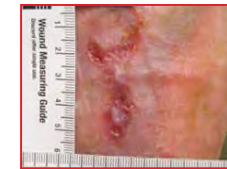


Week 15: Wound healed



Week 2: 100% granular

Wound Dimensions: 2.7 cm x 1.0 cm x 1.0 cm



Week 10: Noticeable epithelialization

Wound Dimensions: 0.2 cm x 0.2 cm