Endoform® helps to improve the clinical outcome in the treatment of pressure injuries

- **Endoform®**, in combination with antibacterial foam, helped lead to timely closure of stage three pressure injuries in a clinical study (63.2 % completely healed in 4 weeks).¹

- **Endoform®** treatment of a 3 month old pressure ulcer of the achillies in an 80 year-old patient helped lead to re-epithelialization after 6 weeks of treatment.²

- A clinical study showed that **Endoform®** treatment for pressure injuries helped to result in a 91.3 % surface area reduction in 12 weeks.³

**Treatment of pressure ulcer of Achilles using Endoform®**

**Endoform®** can be used at all phases of wound management

![CLINICAL EVIDENCE](Image)

**CLINICAL EVIDENCE | Pressure Injury**

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References:
Improved Healing of Stage 3 Pressure Ulcers Using Extracellular Matrix Collagen Dressings.

- Gregory Bohn, MD, FACS, ABPM/UHM, CWSP, FACHM
- Sue Champion RN, CWOCN

West Shore Center for Wound Care and Hyperbaric Medicine, Manistee, MI

Purpose:
A retrospective case review was conducted to evaluate the benefit of a combination wound dressing protocol for treating Stage 3 pressure ulcers that could be left on the wound for a week.

Introduction:
Stage 3 pressure ulcers are a major challenge for the clinician to heal. Using a combination dressing protocol may improve healing. Multiple randomized controlled trials have demonstrated the superiority of hydrocolloid dressings over plain gauze in the treatment of pressure ulcers. One RCT including 65 residents with Stage 3 pressure ulcers in long term care facilities demonstrated similar healing rates of hydrocolloid dressings vs standard collagen dressings. The benefits of collagen to modulate excess matrix metalloproteinase (MMP) activity in a wound have been documented. A low MMP level is conducive to healing rather than a high level which can delay or retard healing. When treated in the outpatient setting, using a dressing that would be effective for the weekly episode of care would be ideal. A combination dressing protocol was developed and evaluated for the treatment of Stage 3 pressure ulcers.

Methodology:
A retrospective case review of 17 patients with Stage 3 pressure ulcers from long term care facilities patients were followed on a weekly basis at the wound care center. Initial excisional debridement was performed in all cases followed by subsequent debridement as needed during the treatment phase. Pressure reduction with mattress overlays and or seat cushions were ordered as needed. As part of the overall wound care plan, the combination dressing protocol developed consisted of a ovine collagen extracellular matrix dressing (CECM) used as the primary dressing (Photo 2), a hydrogel (if needed for moisture balance), and methylene blue/gentian violet (MB/GV) polyurethane (PU) antibacterial foam** (Photo 3) for management of bioburden, which was held in place with a generic hydrocolloid cover dressing (Photo 4). Dressing changes were performed weekly. Peri-wound skin was prepped with tincture of benzoin swabs to improve adherence of the hydrocolloid cover dressing. If the dressing dislodged before the next weekly clinic visit, care givers were instructed to reapply the collagen and foam portion of the dressing with a hydrocolloid cover. Wound assessment, simple wound measurements, and wound photographs were obtained at each weekly patient visit, care givers documented on Careview, wound volume reduced 67% at 1 week.

Results:
Seventeen patients presented with 21 Stage 3 sacrococcygeal area pressure ulcers. Nineteen wounds were followed to closure. Twelve of nineteen (12/19), 63.2% of the wounds healed in 4 weeks or less. All 19 wounds healed in a mean of 5.6 weeks (range 8-25.1 weeks). Median time to healing was 2.9 weeks. Two patients did not complete the study: One patient moved out of the area, but the wound volume reduced 71% in 6.6 weeks and the other patient deceased with the wound volume reduced 67% at 1 week.

Discussion:
In a comparative randomized controlled trial of 65 residents of skilled nursing home facilities with pressure ulcers, 13 patients had Stage 3 pressure ulcers. Either a collagen dressing or a hydrocolloid dressing were used to treat the wounds. When a collagen or hydrocolloid dressing were used alone, healing at 4 weeks did not occur.

In this retrospective case review, it appeared that using this combination dressing protocol with the CECM collagen dressing in conjunction with MB/GV PU antibacterial foam and a hydrocolloid, complete healing was observed in 12 of 19 (63.2%) of stage 3 pressure ulcers at 4 weeks.

Conclusion:
Given that wound closure occurred in the majority of these Stage 3 pressure ulcers within 4 weeks, in this retrospective case review it appears to suggest that this dressing protocol did show effective wound closure on a timely basis.

References:

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Tendons are anatomical structures that connect muscle to bone. They are composed of parallel bundles of collagen fiber and appear as striated white or cream-yellow structures in wound beds. Tendons are nourished by blood vessels and by diffusion of nutrients from synovial fluid. Because nourishment is disrupted when the tendon is exposed, meticulous care must be provided to prevent infection and desiccation. Either of these two may result in loss of tendon viability.

Tendons may be exposed in trauma wounds, stage IV pressure wounds, diabetic wounds, and contaminated or infected surgical wounds. Chronic wounds represent a failure in the normal order and sequence of wound healing. Changes in local pH, temperature, and amounts of chemical reactants are all factors influencing wound healing.

The three main components of local wound management include debridement, infection/inflammation, and moisture balance. Bioburden, or bacterial colonization, leads to persistently high levels of matrix metalloproteinases (MMP) being released from inflammatory cells that digest the normal collagen scaffold in the base of a healing wound. Addressing these key barriers to wound healing with use of advanced wound care products may assist in achieving tendon coverage and promote wound healing.

OBJECTIVE:
To describe the use of an ovine collagen with an intact ECM (CECM) and gentian violet and methylene blue (GV/MB) polyurethane (PU) and/or polyvinyl alcohol (PVA) antibacterial foam*** in wounds with exposed tendons.

METHODS AND MATERIALS:
Patients were selected with wounds containing either partial or complete tendon exposure. The CECM dressing and GV/MB foams were changed according to product instructions. Assessments and measurements were performed by the clinician weekly.

CONCLUSION:
The use of the CECM dressing with GV/MB antibacterial foams in this case series were helpful in the management of these complex wounds. Complete tendon coverage and resolution of wounds were without complication.

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Zilberman, I. and N. Zolfaghari (2016). Innovative solutions in the management of wounds with exposed tendons utilizing ovine collagen extracellular matrix and gentian violet and methylene blue antibacterial foams. Symposium on Advanced Wound Care - Atlanta, GA

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Use of Oxine-based Collagen Extracellular Matrix and Gentian Violet/Methylene Blue Antibacterial Foam Dressings to Help Improve Clinical Outcomes in Lower Extremity Wounds: A Retrospective Cohort Study.

Abstract

Dressings that provide broad spectrum antimicrobial protection along with inherent aspects of an extracellular matrix may contribute to improved wound healing outcomes and shorter treatment times.

OBJECTIVE: The authors performed a retrospective case series analysis to determine the clinical outcomes of regular treatment with the use of oxine-based collagen extracellular matrix dressings and gentian violet/methylene blue polychloro antibacterial foam dressings in treating 50 patients with 53 chronic lower extremity wounds: diabetic foot ulcers (DFUs), venous leg ulcers, and foot pressure ulcers.

MATERIALS AND METHODS: Patients were treated twice weekly in an outpatient clinic for the first 4 weeks and then every other week until closure.

RESULTS: Average body mass index (BMI) for the study population was 28.3, and the average patient age was 75.9 years. Overall percent wound surface area reduction at 4, 8, and 12 weeks was 96.7%, 73.9%, and 91.3%, respectively. Average time to closure for all wounds was 16.6 weeks (range, 5-24 weeks). All wounds were 100% epithelialized by week 20 except 1 wound that epithelialized at week 24. The average cost of care for a single wound episode from presentation to closure was $2788.49.

CONCLUSIONS: Results of this analysis showed that the healing of chronic wounds in this series could be achieved at a reasonable cost with regular debridement and a collagen matrix dressing regimen in patients of advanced age and above average BMI as well as in wounds that did not achieve 40% wound surface area reduction at 4 weeks.

Related information

NCBI
PubChem Compound (MeSH Keywords)

Recent activity

Use of Oxine-based Collagen Extracellular