Use of Silver Collagen Dressings with Outpatient Negative Pressure Wound Therapy

Ralph J. Napolitano, Jr., DPM, CWSP, FACFAS

OrthoNeuro, Columbus, OH; Heritage College of Osteopathic Medicine, Ohio University, Athens, OH

Introduction

- Negative pressure wound therapy (NPWT) has been well documented in the management of a variety of wound types.
- Traditionally, negative pressure is delivered via foam dressings directly to the wound bed.
- Recently, we have begun implementing oxidized regenerated cellulose (ORC)/collagen/silver-ORC (OCSO) dressing as a fenestrated contact layer underneath NPWT dressings.
- In the presence of wound exudate, the collagen dressing transforms into a biodegradable gel that supports granulation and epithelialization,[1] without impeding negative pressure to the wound.[2]
- This allows the benefits of both NPWT and OCSO dressings to be delivered simultaneously.

Purpose

- The aim of this study is to describe the outcomes of this combined therapy in 7 patients with lower extremity wounds.

Methods

- Deidentified data were collected after obtaining informed patient consent and stored in accordance with federal regulations.
- Patients had foot, ankle, or lower leg wounds and received NPWT* at -125 mmHg.
- At the wound interface, a fenestrated OCSO† dressing was placed, as determined by medical necessity. This was covered with NPWT foam dressing and drape.
- NPWT dressings were changed every 2-3 days.

Representative Cases

Figure 1. A 73-year-old diabetic male with venous insufficiency presented with foot swelling and shoe gear decubiti involving the left foot and ankle. He underwent initial debridement with seroma decompression and initiated basic packing with compression bandaging. Three weeks after initial presentation, NPWT with OCSO dressing was initiated. After 4 weeks, the wounds had reduced in area and depth, and NPWT was discontinued. Applications of advanced wound dressings and compression were continued until closure.

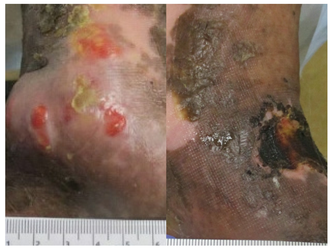

Fig 1A. Wound appearance at presentation. Pressure ulcers on the medial (left) and dorsal (right) aspects of the left ankle.

Fig 1B. Wound appearance after debridement and compression therapy, at initiation of NPWT with OCSO dressings.

Fig 1C. Wounds at Week 3, with red granulation tissue in the wound beds.

Fig 1D. Wounds after 4 weeks of NPWT with OCSO dressings. Treatment was then transitioned to advanced wound dressings.

Figure 2. A 63-year-old female presented for advanced wound care of a 2-week-old abrasion/contusion work injury to the right lower leg. Previously, basic wound care was inititated, but she developed cellulitis, necessitating hospitalization for intravenous antibiotics and supportive care. The wound was initially managed with NPWT with instillation and dwelling‡ of saline, followed by NPWT with OCSO dressings. The wound was closed after 4.5 months of wound care.

Fig 2A. Wound after surgical debridement and 9 days of NPWT with instillation and dwelling of saline.

Fig 2B. Wound after 2 weeks of NPWT with OCSO dressings.

Fig 2C. Wound after 1 month of NPWT with OCSO dressings.

Fig 2D. Wound after application of skin substitutes and advanced wound dressings.

Results

- The patients were 3 males and 4 females, aged 23 to 79 years old.
- Wound etiologies included chronic ulcers, a pressure injury, and a non-healing wound.
- Representative cases are shown in **Figures 1** and **2**.
- NPWT with OCSO dressings was applied for 3-4 weeks.
- Patients were then continued on the silver-collagen dressing regimen or transitioned to other advanced wound dressing protocols if indicated.

Conclusions

- In these patients, NPWT with OCSO dressings effectively managed the wound, resulting in positive healing outcomes.
- No patients experienced significant wound complications, including infection, while receiving this combined therapy.
- In our observations, healing time while utilizing this combined therapy was decreased, compared to our prior experience using NPWT with foam dressings alone.

References

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2. Morabito JA. *K210135 3M™ Promogran Prisma™ 510(k)*. U.S. Food & Drug Administration; 2022. Accessed April 15, 2024. https://www.accessdata.fda.gov/cdrh_docs/pdf21/K210135.pdf

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