

# Pre- and Post-operative Use of Oxidized Regenerated Cellulose (ORC) Dressings in Conjunction With Negative Pressure Wound Therapy for Pressure Injury

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## Background

- Oxidized regenerated cellulose (ORC)/Collagen/Silver-ORC dressings (silver collagen ORC dressings)\* are currently used to manage chronic wounds.
- These dressings provide a moist wound environment conducive to granulation tissue formation, epithelialization, and wound healing.
- Wound bed preparation, particularly in anticipation for surgical closure and following incisional dehiscence has been managed using negative pressure wound therapy (NPWT)<sup>†</sup> with reticulated open cell foam (ROCF) dressings.<sup>‡</sup>
- Recently, the use of NPWT with ROCF dressings in combination with silver collagen ORC dressings has become available.
- This combination of therapies may allow for wound bed preparation that utilizes the benefits of both silver collagen ORC dressing use and NPWT.

## Purpose

- NPWT with ROCF dressings used in tandem with silver collagen ORC dressings in 6 patients with pressure injuries is presented.

## Methods

- Silver collagen ORC dressings were cut to fit the wound and fenestrated.
- A non-adherent layer was placed over the silver collagen ORC dressings prior to application of NPWT with ROCF dressings.
- Continuous negative pressure at -125 mmHg was utilized with ROCF dressing changes every 24-72 hours.
- At dressing changes, silver collagen ORC dressings were reapplied.

## Representative Cases

**Sacral Pressure Injury.** A 70-year-old male presented with a non-healing sacral pressure injury. Previous medical history included paraplegia, multiple sclerosis, and hypertension. NPWT with ROCF dressings was initiated. After 3 days, treatment transitioned to tandem use of silver collagen ORC dressings in combination with NPWT and ROCF dressings. After 6 days, healthy granulation tissue was observed in the wound bed. Wound healing continued without the need for further surgical intervention.



Figure 1A. Wound at presentation (Day 0)



Figure 1B. Wound after 3 days of combination therapy (Day 6)



Figure 1C. Application of silver collagen ORC dressings and NPWT with ROCF dressings (Day 6)



Figure 1D. Wound after 6 days of combination therapy (Day 9)

**Multiple Pressure Ulcers.** A 49-year-old male presented with multiple pressure ulcers of the trunk following failed flap surgery. Previous medical history included paraplegia and poor nutritional status. NPWT with ROCF dressings over silver collagen ORC dressings was initiated. After 8 weeks, the wound bed was covered with healthy granulation tissue.

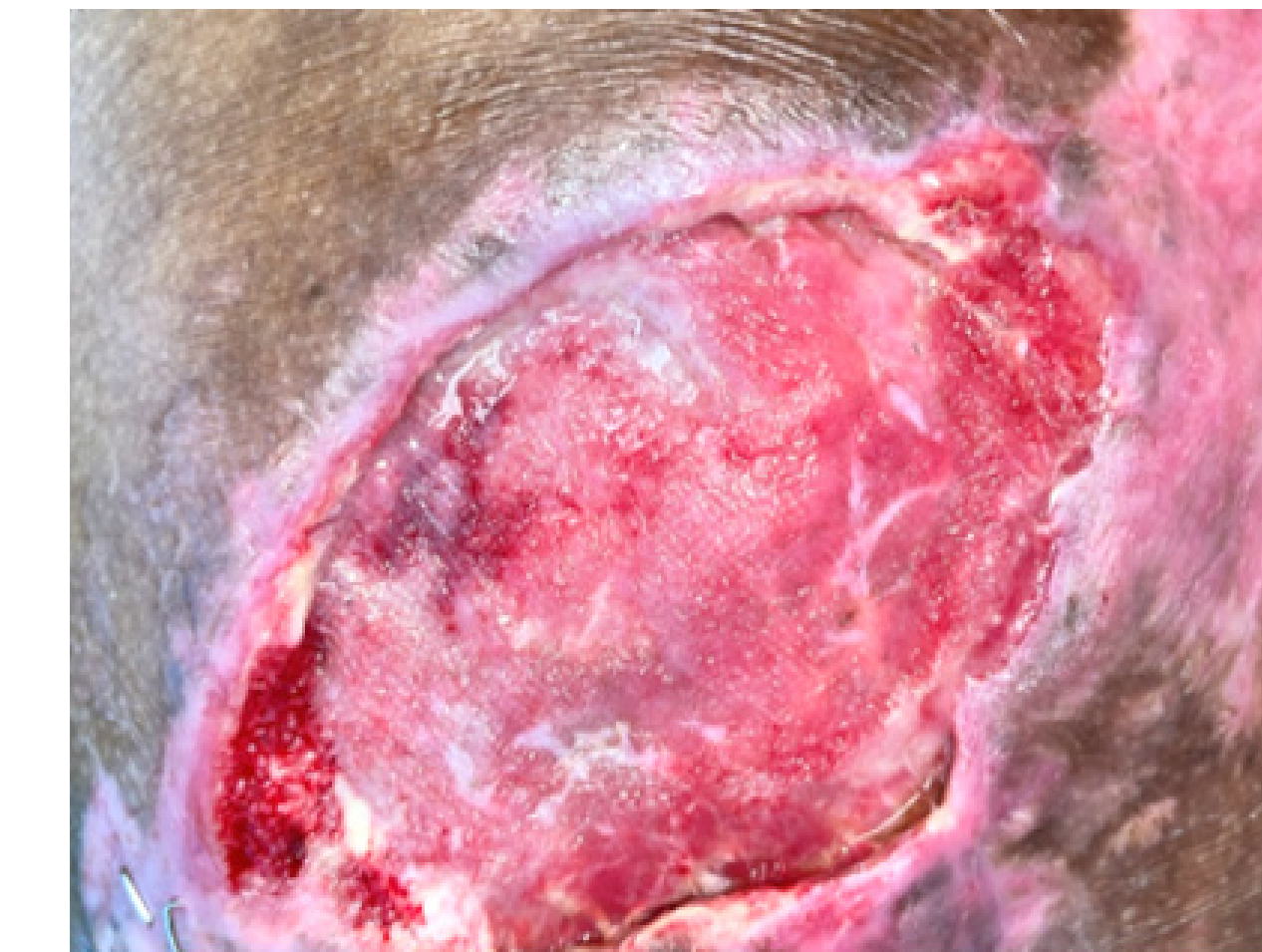


Figure 2A. Wound at presentation (Day 0)



Figure 2B. Application of silver collagen ORC dressings and NPWT with ROCF dressings (Day 0)



Figure 2C. Wound after 7 days of combination therapy (Day 7)



Figure 2D. Wound after 8 weeks of combination therapy (Day 56)

## Results

- Six patients with pressure injury and secondary ulceration presented for care.
  - Pressure injury location included right buttock (n=2), left buttock (n=2) and sacrum (n=1).
  - One patient presented with multiple ulcers.
- No complications resulting from NPWT in combination with silver collagen ORC dressing use were observed.
- In all patients, wound size reduction and granulation tissue development in the wound bed were noted.
- Wound healing was observed in 3 patients after a secondary surgery.
- Two wounds healed secondarily without the need for additional surgery.
- The remaining patient with multiple ulcers has shown some wound healing while awaiting nutritional improvement prior to surgical intervention.
- Representative cases are shown in **Figures 1 and 2.**

## Conclusions

- In these 6 patients, the combination of NPWT and silver collagen ORC dressings was safe and effective.
- This therapeutic combination helped to promote wound bed preparation in anticipation of surgical closure or wound healing through secondary intention.
- More research is needed to understand the synergy between NPWT and silver collagen ORC dressings.
- However, this therapeutic combination should be considered for patients with chronic wounds and wound healing delays.