

Use of Oxidized Regenerated Cellulose (ORC)/Collagen/Silver-ORC Dressing in Four Patients with Complex Wounds

Emily Greenstein, APRN, CNP, CWON-AP, FACCWS; Comprehensive Wound Care, Sanford Health, Fargo, ND

Background

- Complex and chronic wounds can be difficult to treat.
- However, a number of advanced wound dressings are available to help optimize the wound for healing.
- Oxidized regenerated cellulose (ORC)/collagen (C)/silver (Ag)-ORC dressings* have been reported to help optimize the wound environment.¹⁻³

Purpose

- ORC/C/Ag-ORC dressing use was examined in 4 patients with complex wounds.

Methods

- Antibiotics were given as needed.
- ORC/C/Ag-ORC dressings were applied to the wound bed followed by a non-adherent, hydrofiber, or foam dressings.
 - Two patients received additional wound coverage:
 - One patient received dry gauze.
 - One patient received a two-layer compression wrap.
- ORC/C/Ag-ORC dressings were reapplied every 2 days to twice per week along with secondary dressing and wound coverage changes.

Results

- Four patients (age range 67-84 years) presented for care (Table 1).
- Patient previous medical history included hernia, obesity, diabetes, hypertension, coronary artery disease, and cancer.
- Wound types included pressure injury, trauma, and graft failure.
- Two wounds had been present for 1-2 months prior to presentation for care.

Representative Cases

Case 1. A 71-year-old female presented with a 3-week old stage 3 pressure injury on the underside of her pannus. ORC/C/Ag-ORC dressings were applied every other day and covered with a bordered foam dressing. The wound was fully healed 42 days after presentation.



Figure 1A. Wound at presentation (Day 0, 4.5 x 2.5 x 0.2 cm³)
Figure 1B. Wound after 14 days of ORC/C/Ag-ORC dressings (Day 14, 3.0 x 2.0 x 0.1 cm³)
Figure 1C. Wound after 28 days of ORC/C/Ag-ORC dressings (Day 28, 2.0 x 1.0 x 0.1 cm³)
Figure 1E. Wound after 42 days of ORC/C/Ag-ORC dressings (Day 42, 2.0 x 1.0 x 0.1 cm³)

Case 2. An 84-year-old male presented with degloving injury of the left anterior hand after a fall. ORC/C/Ag-ORC dressings were applied twice a week and covered with a non-adherent dressing and dry gauze. The wound was fully healed 26 days after presentation.



Figure 2A. Wound at presentation (Day 0, 6.0 x 5.0 x 0.2 cm³)
Figure 2B. Wound after 7 days of ORC/C/Ag-ORC dressings (Day 7, 2.0 x 2.5 x 0.2 cm³)
Figure 2C. Wound healed 26 days after presentation (Day 26)

Case 3. A 67-year-old male presented with 2-month old traumatic injury of the left ankle. ORC/C/Ag-ORC dressings were applied every other day and covered with a hydrofiber dressing and foam border dressing. The wound was 95% closed 21 days after presentation.



Figure 3A. Wound at presentation (Day 0, 6.0 x 0.5 x 0.8 cm³)
Figure 3B. Wound after 14 days of ORC/C/Ag-ORC dressings (Day 14, 1.0 x 0.2 x 0.7 cm³)
Figure 3C. Wound after 21 days of ORC/C/Ag-ORC dressings (Day 21, 1.0 x 0.2 x 0.5 cm³)

Case 4. A 70-year-old male presented with cellulitis and graft failure of the left lower leg donor site. An amniotic graft was applied weekly, followed by ORC/C/Ag-ORC dressings, non-adherent contact layer, superabsorbent dressing, and 2-layer venous compression wrap. The compression wrap was changed twice a week due to drainage and edema. At 32 days after presentation, the wound area continued to reduce.



Figure 4A. Wound at presentation (Day 0, 10.0 x 10.0 x 0.2 cm³)
Figure 4B. Wound after 7 days of ORC/C/Ag-ORC dressings (Day 7, 7.0 x 4.8 x 0.2 cm³)
Figure 4C. Wound after 28 days of ORC/C/Ag-ORC dressings (Day 28, 3.5 x 2.5 x 0.2 cm³)
Figure 4D. Wound after 32 days of ORC/C/Ag-ORC dressings (Day 32, 2.0 x 1.0 x 0.1 cm³)

Results (Cont'd)

Table 1. Patient demographics

Case	Age	Sex	Medical History	Wound Type
1	71	Female	Obesity; Diabetes, Hypertension; Abdominal Wall Hernia	Stage 3 Pressure Injury
2	84	Male	Hypertension; Diabetes; Liver Cirrhosis; Arthritis; CAD	Traumatic Wound
3	67	Male	Diabetes; Hypertension; Gout; Prostate Cancer	Traumatic Wound
4	70	Male	Oral Cancer	Graft Failure of Donor Site

CAD= Coronary artery disease

- Wound area reduction was observed in all 4 patients.
- Decreased inflammation was also observed with ORC/C/Ag-ORC dressing use.
- The pressure injury showed 95% closure by day 42 (Figure 1).
- One traumatic wound was closed within 26 days of presentation; the remaining traumatic wound showed 95% closure 21 days after presentation (Figures 2-3).
- The remaining wound showed continued wound area reduction by 32 days after presentation (Figure 4).

Conclusions

- Use of ORC/C/Ag-ORC dressings contributed to wound area reduction in all 4 patients and complete wound closure in 2 patients.

References

1. Wu S, Applewhite AJ, Niezgoda J, et al. *Adv Skin Wound Care*. 2017;30(11S):S1-S18.
2. Gottrup F, Cullen BM, Karlsmark T, et al. *Wound Repair Regen*. 2013;21(2):216-225.
3. Chowdhry SA, Nieves Malloure Y, Camardo M, et al. *Int Wound J*. 2022;19(2):241-252.