

# Use of Oxidized Regenerated Cellulose (ORC)/Collagen/Silver-ORC Dressings With Negative Pressure Wound Therapy in Dehisced Surgical Wounds

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## Background

- Postoperative dehiscence is estimated to occur in 0.5-3.4% of patients undergoing abdominopelvic surgeries and can carry up to a 40% mortality rate.<sup>1</sup>
- Patient risk factors for dehiscence include advanced age, obesity, surgical infection, and diabetes.<sup>1</sup>
- Synthetic mesh, negative pressure wound therapy (NPWT), or advanced wound dressings have been typically utilized to manage abdominal wound dehiscence.
- Recently, use of NPWT\* in combination with oxidized regenerated cellulose (ORC)/Collagen/silver-ORC (ORC/C/Ag-ORC) dressings † has become available.

## Purpose

- The use of ORC/C/Ag-ORC dressings in tandem with NPWT and reticulated open cell foam (ROCF) dressings ‡ in 3 patients with surgical wound dehiscence is examined.

## Methods

- Antibiotics were initiated as necessary.
- In all patients, the abdominal fascia remained closed.
- ORC/C/Ag-ORC dressings were fenestrated and applied to the wound bed, followed by ROCF dressing application and NPWT placement.
- ROCF dressings were changed every 2-3 days.
- ORC/C/Ag-ORC dressings were applied during NPWT dressing changes.
- ORC/C/Ag-ORC dressing use in tandem with NPWT was utilized until healthy granulation tissue covered the wound bed (up to 30 days).
- Patients were transitioned to ORC/C/Ag-ORC dressings with secondary hydrofiber (n=1) or foam (n=2) dressings once NPWT was discontinued.

## Cases

**Case 1.** A 51-year-old female underwent open ventral hernia repair with mesh, omentectomy, and panniculectomy for an incarcerated ventral hernia. The patient developed a wound infection. An incision and drainage procedure was performed followed by surgical debridement. After 30 days, NPWT was discontinued and use of ORC/C/Ag-ORC dressings with a secondary hydrofiber dressing was initiated.



Figure 1A. Wound at presentation (7.0 cm x 34.5 cm x 5.0 cm)



Figure 1B. Wound after 12 days (6.0 cm x 32.5 cm x 5.0 cm)



Figure 1C. Wound after 18 days (6.0 cm x 32.5 cm x 4.5 cm)



Figure 1D. Wound after 30 days (3.0 cm x 29.0 cm x 2.0 cm)

**Case 2.** A 51-year-old female presented surgical wound dehiscence following an abdominoplasty and liposuction. At day 20, wound care was transitioned to ORC/C/Ag-ORC dressings with a secondary foam dressing.



Figure 2A. At presentation (2.2 cm x 8.0 cm x 1.2 cm, tunneling [9 o'clock] 12.8 cm, undermining [5 o'clock] 4.6 cm)



Figure 2B. After 8 days (4.0 cm x 2.0 cm x 4.5 cm, tunneling [5-7 o'clock] 4.5 cm, tunneling [9 o'clock] 9.5 cm)



Figure 2C. After 20 days (4.0 cm x 1.5 cm x 0.2 cm, tunneling [5-7 o'clock] 4.5 cm)



Figure 2D. After 14 days of advanced wound dressings (2.0 cm x 1.0 cm x 0.2 cm, no tunneling)

**Case 3.** A 53-year-old female presented with a wound dehiscence following a 360-degree tummy tuck. After 11 days, wound care was transitioned to ORC/C/Ag-ORC dressings with secondary foam dressing.



Figure 3A. Left flank at presentation (2.0 cm x 9.5 cm x 2.0 cm)



Figure 3B. Left flank after 3 days (1.8 cm x 10.2 cm x 1.1 cm)

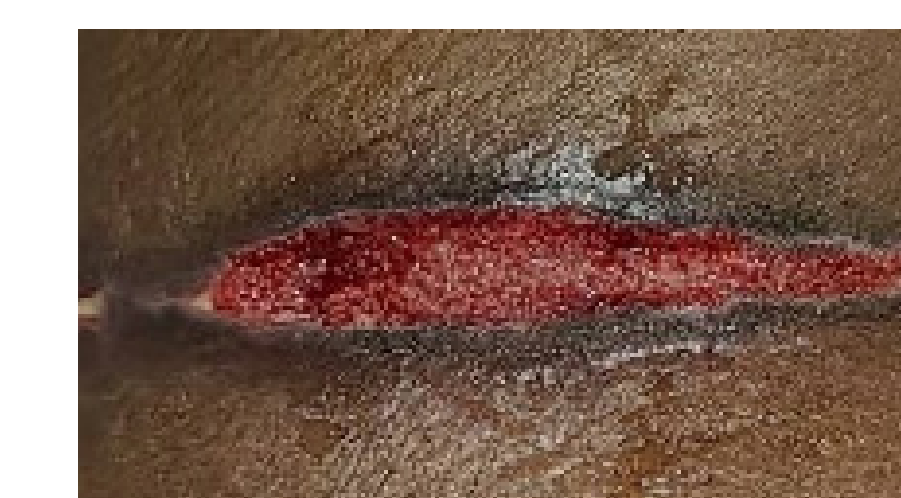


Figure 3C. Left flank after 7 days (1.5 cm x 9.5 cm x 0.8 cm)



Figure 3D. Left flank after 11 days (1.5 cm x 9.0 cm x 0.2 cm)



Figure 3E. Left flank after 7 days of advanced wound dressings (0.5 cm x 3.0 cm x 0.1 cm)



Figure 3F. Right flank at presentation (2.0 cm x 8.0 cm x 1.5 cm)



Figure 3G. Right flank after 3 days (1.0 cm x 8.2 cm x 1.4 cm)



Figure 3H. Right flank after 7 days (1.7 cm x 7.9 cm x 0.6 cm)



Figure 3I. Right flank after 11 days (1.2 cm x 6.5 cm x 0.2 cm)

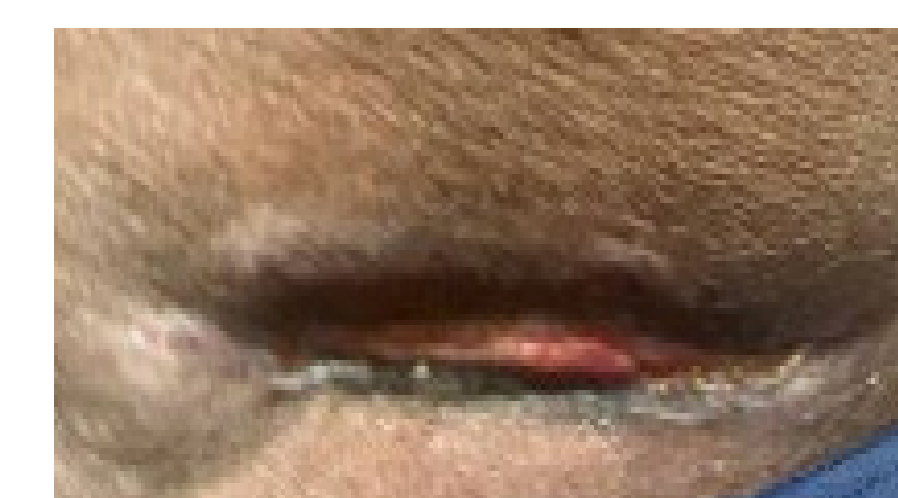


Figure 3J. Right flank after 7 days of advanced wound dressings (0.2 cm x 1.5 cm x 0.1 cm)

## Results

- Three patients (age range: 51-58 years) presented for care with abdominal surgical wound dehiscence (Figures 1-3).
- One patient had a history of diabetes; the remaining patients had no prior patient comorbidities.
- ORC/C/Ag-ORC dressings with NPWT and ROCF dressings were used for an average of 20.3 days (range 11-30 days).
- Wound tunneling in one patient was closed after 20 days of ORC/C/Ag-ORC dressing with NPWT and ROCF dressing use.
- In all 3 patients, use of ORC/C/Ag-ORC dressings with NPWT and ROCF dressings resulted in wound area and volume reduction along with development of granulation tissue.

## Conclusions

- In these 3 patients, use of fenestrated ORC/C/Ag-ORC dressings with NPWT and ROCF dressings resulted in decreased wound area and volume and increased development of healthy granulation tissue.

## References

1. Shanmugam VK, Fernandez SJ, Evans KK, et al. Postoperative wound dehiscence: predictors and associations. *Wound Repair Regen.* 2015;23(2):184-190.