Negative Pressure Wound Therapy With Instillation and Silicone Hybrid Drape Use in Complex Wounds: A Small Case Series

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Introduction

- Traditionally, negative pressure wound therapy with instillation and dwell time (NPWTi-d*) is applied to the wound using foam dressings and an acrylic adhesive drape.
- However, the traditional drape is unable to be repositioned following initial placement and can be painful to remove at dressing changes.
- A new hybrid polyurethane drape with acrylic adhesive and a silicone perforated layer (hybrid drape†) has been developed for use.

Purpose

- This 3-patient case series describes our initial use of NPWTi-d with hybrid drape.

Methods

- Three patients presented for care.
- Sharp debridement was performed and intravenous antibiotics were given, as necessary.
- Delicate structures were protected prior to NPWTi-d with hybrid drape application.
- NPWTi-d dressings‡ were applied followed by hybrid drape application.
- Acetic acid (0.25%) or normal saline solution was instilled into the wound bed with a dwell time of 5-10 minutes, followed by 3 hours of negative pressure (-100 mmHg to -125 mmHg).
- Dressings were changed every 2-3 days.
- Wound healing and periwound skin condition were monitored.

Results

- The patients presented with exploratory laparotomy for necrotizing pancreatitis, trans-metatarsal amputation wound dehiscence, or necrotizing fasciitis (**Table 1**).
- The hybrid drape was able to be repositioned following the initial placement.
- No negative pressure or instillation solution leaks were observed with hybrid drape usage.
- Hybrid drape removal was easy with no patient-reported pain at dressing changes compared to previous experience with traditional drape.
- Increased development of healthy granulation tissue was observed in the wound beds of all 3 patients.
- No periwound skin irritation was observed in any patient (**Figures 1-3**).

Table 1. Patient demographics

Case	Age	Sex	Wound Type
1	65	Male	Exploratory laparotomy for necrotizing pancreatitis
2	29	Male	Transmetatarsal amputation wound dehiscence
3	56	Female	Necrotizing fasciitis

Cases

Case 1. A 65-year-old male presented for care following an exploratory laparotomy for necrotizing pancreatitis. The fascia was intact. NPWTi-d was initiated with instillation of 60 mL of 0.25% acetic acid for a dwell time of 5 minutes, followed by 3 hours of negative pressure at -100 mmHg.

Figure 1a. Wound at presentation

Figure 1b. Wound at day 3

Figure 1c. Wound at day 6

Case 2. A 29-year-old male presented for care with post transmetatarsal amputation with wound dehiscence. No exposed structures were found. NPWTi-d was initiated with 10 mL of normal saline instilled into the wound bed with a 5 minute dwell time, followed by 3 hours of negative pressure at -125 mmHg.

Figure 2a. Wound at presentation

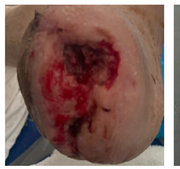

Figure 2b. Wound after debridement

Figure 2c. Wound at day 3

Cases (Cont'd)

Case 3. A 56-year-old female presented for care with necrotizing fasciitis to the left hip and buttocks Exposed tendon and muscles were observed and were protected with non-adherent dressings. NPWTi-d was initiated with instillation of 150 mL of saline for a dwell time of 10 minutes, followed by 3 hours of negative pressure at -125 mmHg.

Figure 3a. Wound at presentation

Figure 3b. Wound at day 3

Figure 3c. Wound at day 7

Figure 3d. Wound at day 11

Conclusions

- The hybrid drape application and removal was easier compared to previous experiences with traditional drape.
- In these 3 patients, use of NPWTi-d with hybrid drape resulted in increased development of granulation tissue in the wound bed without the loss of negative pressure seal, instillation solution leaks, or periwound skin irritation.

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*3M™ Veraflo™ Therapy, †3M™ Dermatac™ Drape, ‡3M™ V.A.C. Veraflo™ Dressing or 3M™ V.A.C. Veraflo Cleanse Choice™ Dressing (3M, St. Paul, MN)

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