

The use of a gauze-based dressing for Negative Pressure Wound Therapy (NPWT): Clinical and financial outcomes

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Introduction

Necrotizing fasciitis is a fatal infectious process which leaves many patients in need of advanced, unique, and complex wound care and dressing changes. Due to various locations, these wounds are typically cavernous, with gross undermining and are heavily exudative. Patients experience lengthy and painful dressing changes. Staff members experience frustration with providing care for such "high maintenance" wounds.

Case History

55 year-old, white female with type 2 diabetes, morbid obesity, and anemia.

Patient was admitted to an LTAC unit from an acute care facility. In the acute care facility, patient underwent aggressive surgical debridement of abdominal/perineal wound secondary to necrotizing fasciitis.

Treatment

Topical therapy included wet-to-dry normal saline dressings with dressing changes every eight hours. Frequently, the dressing had to be changed more often due to large amounts of exudate. Upon admission, a holistic approach was taken. Consults included WOC nurse, plastic surgeon, dietician, and physical therapist. After careful evaluation, sutures were removed and NPWT, with a foam interface*, was initiated.

Conservative cost evaluation:
 Difference in pain medication is a reduction of \$16.25/day with the elimination of the morphine sulfate.
 Nursing time was reduced by 30 minutes/day.
 Rehabilitation was able to be performed on days in which morphine sulfate was not needed for dressing changes.

Product	Gauze-based system**	Foam-based system*
Pump rental	\$54.00	\$60.50
Cannister	\$32.92	\$72.04
Dressing supply	\$151.87	\$663.50
Total cost	\$238.79/day	\$796.04/day

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2/26/2008

Initial measurements were 61cm x 36cm x 3.8cm with undermining at 12 o'clock of 12cm and at 6 o'clock of 15cm. Pain was controlled with morphine sulfate 8mg and 2 Percocet. The anatomical structures and the large amount of exudate resulted in difficulty maintaining a seal. Thus, the dressing required daily changes.

3/13/2008

Wound measurements: 53.5cm x 34cm x 3.5cm with 9.8cm undermining at 12 o'clock and 9.5cm at 6 o'clock. Began gauze-based dressing technique** with -80 mmHg pressure to attempt to reduce dressing changes, decrease pain, quantify exudate more accurately, and increase rehab abilities. The patient required only 2 Percocet for dressing change procedure with the new therapy.

3/17/2008

HBO therapy began.

3/30/2008

Staff nurse changed back to NPWT with foam-based dressing* due to concerns with change in exudate.

3/31/2008

Wound base had granulated grossly into foam. Patient had to have IV medication again for dressing changes, had acute blood loss, and lost a day of rehabilitation. In addition, patient received 2 units of blood the following day due dressing change-induced hypovolemia. Therapy was changed back to the gauze-based NPWT** with -80 mmHg pressure.



02/26/08



03/03/08



Outcome

4/28/2008

Wound measurements 50cm x 34cm x 2cm with undermining of 2.5cm at 12 o'clock and 2.2cm at 6 o'clock. Pain with dressing change is now two percocet only.



03/10/08



03/13/08



03/14/08



03/14/08 NPWT dressing intact



03/31/08 After one temporary day of foam-based NPWT



04/04/08 Back on gauze-based NPWT

Conclusion

Patient was able to have advanced, unique, and complex wound care that allowed for a decrease in pain medication, a decrease in cost and reduction of adverse effects with dressing changes. Exudate was quantified and wound is being prepared for skin graft application.

* VAC foam based system - KCI, San Antonio, TX.

**EZCARE* gauze based system - Smith & Nephew Wound Management Inc., St Petersburg, FL.

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