

Negative Pressure Wound Therapy with Intermittent Saline Installation

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Abstract

Purpose:

To present case studies on the outcomes of necrotizing fasciitis wounds using negative pressure wound therapy (NPWT) with intermittent normal saline soaks, reducing operating room visits and patient length of stays and improving healing rates.

Past Management:

Prior to these case studies, patients often required two to four OR visits for repeated wound washouts/debridement. This resulted in poor patient outcomes evidenced by delayed healing rates, increased risk for infection, increased length of stay, and increased hospital readmission rates.

Current Clinical Approach:

Necrotizing fasciitis is a life-threatening diagnosis. When a patient is diagnosed with a necrotizing fasciitis wound, he/she is immediately taken to the OR for surgical debridement. Post-surgery, NPWT is initiated including normal saline instillation therapy. The fluid therapy is scheduled on a preprogrammed dose and time regimen. After the soak time, the fluid is removed by the NPWT system. The fluid instillation is cycled every 3.5 hours and continues for the duration of the NPWT.

Patient Outcomes:

Studies were done on one African American male, one Caucasian male and one Caucasian female. After implementing NPWT with saline soaks, wound measurements dramatically decreased and healthier tissue was present within the first week of therapy. All three patients reported less pain. None required a return visit to the operating room for repeated washout/debridement. Additionally, the female case study had a confirmed case of *Pseudomonas aeruginosa* which resolved completely with NPWT installation therapy without additional treatment or medication.

Conclusions:

After using NPWT, combined with instillation of normal saline soaks, patient outcomes were markedly improved compared to patients who did not have the instillation therapy. None had to go back to the OR for additional debridement surgeries. Length of stay decreased by 5-7 days. Finally, there have been no hospital readmissions for complications with their wounds.

CASE #1

72 y.o. Caucasian female

- History:** DM, HTN, Obesity, and CAD
- 4/4/19** Admission with sepsis secondary to vulvar abscess and necrotizing fasciitis
- 4/09/19** OR - Vulvectomy incision & Drainage with wound debridement – wound packed with kerlix gauze
- 4/10/19** I&D vulvar debridement in OR, daily packing by MDs
- 4/11/19** WOC consulted, joint visit with MD, NS packing continued
- 4/17/19** WOC reconsulted and NPWT/SI initiated
Wound culture identified *Pseudomonas aeruginosa*
- 4/25/19** Discharge to SNF with regular NPWT, *Pseudomonas aeruginosa* resolved

(21 day admission; 8 days post NPWT/SI to discharge)

CASE #2

55 y.o. Caucasian male

- History:** Uncontrolled DM (A1c of 10.7%, taking no meds) & Hypertension
- 4/9/19** Admission with Fournier's Gangrene, testicular pain, fever
- 4/9/19** OR - Excision and Drainage of perineal and scrotal abscess, IV antibiotics initiated, Dakins TID
- 4/10/19** WOC Consulted, Diabetic Educator consulted
- 4/11/19** NPWT/SI initiated
- 4/17/19** NPWT/SI stopped & regular NPWT initiated
Plastic surgeon consulted
- 4/19/19** Reapplied NPWT/SI therapy
- 4/30/19** OR wound closure by Plastics MD
- 5/2/19** Discharged home with self care

(23 day admission, 11 days post NPWT/SI to closure)

CASE #3

46 y.o. African American male

- History:** DM (untreated), Arthritis, anxiety and depression, hyperlipidemia, hypertension, kidney stone, sleep apnea
- 4/5/19** Admission with Fournier's Gangrene
- 4/5/19** Excisional debridement of perineum, Dakins BID ordered
- 4/6/19** I.D. and Endocrinology consults
- 4/7/19** OR for washout and debridement continued Dakins dressings
- 4/11/19** WOC Consulted and NPWT/SI initiated
- 4/17/19** Discharge home Home health NPWT 3 times weekly

(12 day admission, 6 days post op NPWT/SI to discharge)

CASE #1 FIRST PHOTO



CASE #1 FINAL PHOTO



CASE #2 FIRST PHOTO



CASE #2 FINAL PHOTO



CASE #3 FIRST PHOTO



CASE #3 FINAL PHOTO

