

Successful patient care of large soft tissue defects – the Barnes-Jewish Hospital Experience.

Terri Reed, RN, BSN, CWON and Diana Economon, RN, BSN, CWCN, Barnes-Jewish Hospital, St Louis, MO.

Introduction

Necrotizing Fasciitis is a rapidly spreading progressive infection in the deep fascia with secondary necrosis of the subcutaneous fat. The infection moves along the fascial plane and requires aggressive intervention and treatment. Typically this infection involves both aerobes and anaerobes. Aerobes deplete the oxygen levels in the wound and anaerobes break down tissue. The morbidity and mortality rate is 70-80%.

Necrotizing Fasciitis most commonly occurs on the abdomen or perineum; however it can occur anywhere on the body. Fournier's gangrene is the term used for necrotizing fasciitis involving the perineal area. Symptoms typically begin with an area of erythema that quickly spreads over the course of hours to days. Necrotizing fasciitis usually occurs after major or minor trauma or surgery. Risk factors include diabetes, obesity, and age over 50, immunosuppression.

In our large Level I Midwest trauma center, necrotizing fasciitis presents primarily in the groin/perineal area of the affected person. Patients from surrounding states are transferred to our medical center for diagnosis and treatment. Treatment begins with prompt surgical intervention to debride all non-viable fascia and tissue. Surgical debridement must be extensive and aggressive and involves multiple returns to the operating room. Aggressive antibiotic treatment, pain control, and emotional support are essential.

The aim of this poster presentation is to share our experience and best practice in treating patients that have undergone extensive soft tissue debridement and have poor morbidity and mortality. A small case series of complex cases illustrate the successful use of negative pressure wound therapy (NPWT) utilizing a gauze-based filler* as the most effective treatment for necrotizing fasciitis.

Case Series

Patient A: 37 year-old female with a history of diabetes and morbid obesity. Status post large epidural abscess after multiple laminectomies. Developed Necrotizing fasciitis. Extensive debridement performed on 01/31/09 and 02/04/09.

Wound encompasses lower back, bilateral buttocks and posterior left thigh. Wound measured 80.0cm x 15.0cm x 10.0cm on first assessment. NPWT and gauze-based filler applied using two flat drains.

Outcome: Care of this patient is still ongoing with many recent re-admissions. Last admission on 02/12/09 for G-tube placement for poor nutrition and to increase chance of wound healing. Excellent wound progression and reduction in wound size despite poor prognosis for healing.



Lower back



Posterior left thigh



Lower back, bilateral buttocks and posterior left thigh



6 months post-application of NPWT

Patient B: 61 year-old female diabetic patient. Nurse by profession. Developed folliculitis with Necrotizing fasciitis. Neglected care and had rapid spread. Massive debridement and several wash outs. Wound encompasses posterior thigh and peri-rectal area. Wound measured as 40cm x 19cm x 2cm on first assessment.

Outcome: Excellent wound progression and patient discharged with a diverting colostomy to decrease chance of infection to the wound. Difficult area to dress as wound was close proximity to rectal margin.



Posterior thigh



1st dressing change



2nd dressing change and patient discharged to ECF

Patient C: 29 year-old female diabetic patient. Morbidly obese. Status post Necrotizing fasciitis of abdominal area, pannus, bilateral groins and mons pubis. Started as a small boil which become infected and rapidly progressed. Massive debridement on 01.25.10.

Wound measured 80cm x 30cm x >8cm undermining at initial assessment. Impregnated gauze applied to exposed muscle areas. 2 flat drains "Y" connected together. Very difficult application requiring 3 nurses, due to moist areas in the groin and massive irregular areas with undermining.

Outcome: Excellent wound progression and patient discharged. Gauze-based filler conformed to the irregular wound shape and irregular wound contour.



Abdominal area, pannus, bilateral groin and mons pubis



Abdominal area, pannus, bilateral groin and mons pubis



1st application of NPWT



1st application of NPWT

Conclusion:

This treatment modality helps to facilitate wound closure, provides protection of the peri-wound skin, helps to maintain drainage control, pain control and demonstrates cost effectiveness due to the decreased dressing change frequency in these large soft tissue defects.

Reference

- Jennifer T. Trent, Robert S. Kirsner, (2002). Necrotizing Fasciitis. Wounds, Issue 8, 2002.

*EZCARE and RENASYS-G – Smith & Nephew Wound Management Inc., St Petersburg, FL.

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