

Introduction

Necrotizing Fasciitis (NF) is a life-threatening deep soft tissue infection that results in rapid and progressive destruction of the muscle, fascia, and the overlying subcutaneous fat. NF can occur as an infective complication, trauma, or post-surgery. Diabetic patient populations are frequently at risk for developing Necrotizing Fasciitis of the lower extremities resulting in limb loss (Leiblein. et. Al, 2018).

Initial debridement

Post Operative Day 4



Practice Innovation

The healthcare team in treating NF is challenged to seek Advanced Gold Standard Treatments to achieve positive clinical outcomes.

P: Diabetic Patients with deep soft tissue infections

I: Negative pressure wound therapy with instillation and advanced wound treatments (GRAFT)

C: Standard Negative Pressure Wound Therapy

O: Will result in decreased wound complications and increased rapid wound surface area closure.

Assess

A study of the hospital course of a 54 y/o diabetic male admitted with a fulminant case of NF from a self-administered insulin injection to his left thigh.

Localized Symptoms - muscle pain, erythema, swelling from left thigh to groin with induration.

Diagnostics- WBC 29.7, Lactic acid 2.6 mmol/L,

CAT Scan- left thigh tracking fluid and punctuate foci gas,

Culture- *Streptococcus anginosus*

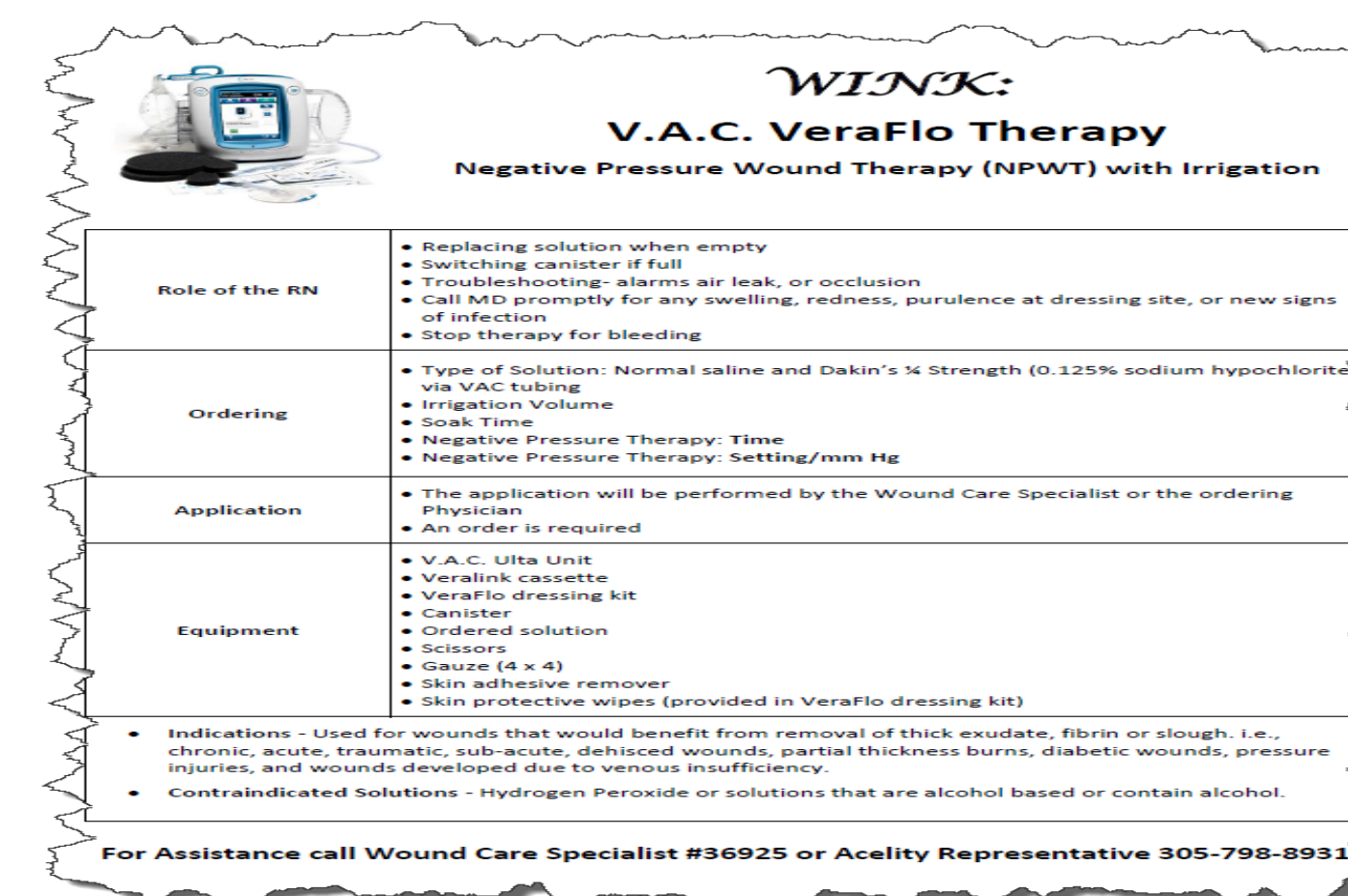
Plan

Gold Standard Treatment of NF consists of timely diagnosis, aggressive debridement, and negative pressure wound therapy (Zhang, et al, 2022). The application of xenograft synthetic graft facilitated a decreased wound surface area.

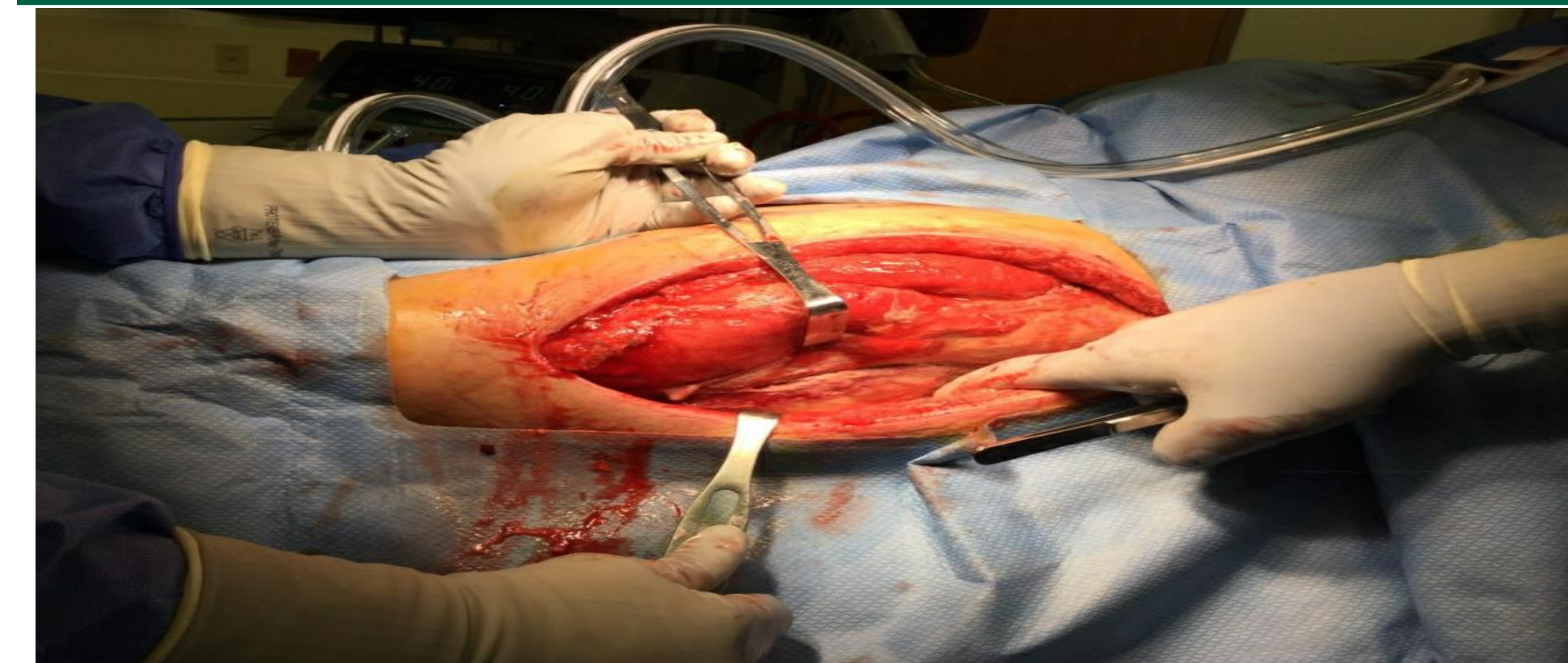


Best Practice was achieved by:

- Sepsis Bundle Alert
- Surgery within 12 hours of admission.
- 16 Visits to the OR for debridement/dressings
- Antibiotics sensitive to *Streptococcus anginosus*
- Negative Pressure Wound Therapy with Instillation
- What You Need To Know Education Flyer
- Synthetic Graft Application to decrease wound surface area.



Outcomes



Left Lateral Thigh

Initial Measure: 32.0 cm X 8.0 cm X 7.0 cm



6 Weeks post graft application:

16.0 cm X 2.0 cm X 1.5 cm

Calculation for percentage Surface Area Reduction over time

SAI-SAC SURFACE AREA

SAI X 100 = **87.5 % REDUCTION**

CONCLUSION

Delays in treatment or misdiagnosis can lead to poor or fatal outcomes without timely evidence-based treatments in NF patients. Evidence-based practice in combination with mastery of new technologies resulted in a reduction of wound surface and limb salvage for this diabetic patient.

Recommendations for future studies are to have a large sample size and to compare NPWT-I with other types of grafts to ascertain which type of graft has better outcomes.