Managing an Open Tracheostomy Site with Negative Pressure Wound Therapy

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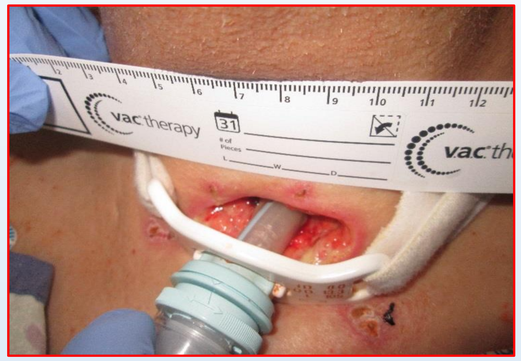
Introduction/Background: Complex patients with multiple co-morbidities often present with fresh surgical tracheostomies that fail to heal properly. Classic wound care dressing of gauze may protect from friction but do not absorb moisture and may add to the problem of surface skin or later on deeper wound infections. Using traditional packing methods such as calcium alginate, gauze, or wound gels, would increase risk for aspiration of particulate given that it is an open airway. Recently, experts reported a case where negative pressure wound therapy promoted healing at a large and challenging tracheostomy site.

Purpose: The purpose of this presentation is to provide an innovative option for advanced wound healing in a complex patient using negative pressure wound therapy (NPWT) applied to a dehisced tracheostomy site

Methods: In this case study the following actions took place:

- Discussions with the Cardiothoracic surgeon, nursing leadership, unit nurses, dialysis nurses, and respiratory therapy,
- Negative pressure wound therapy applied
- NPWT changed three times a week
- Tracheostomy site was checked daily by
    - Wound care nurses
    - Respiratory therapy assessed ventilator parameters
    - Clinical nurse monitored overall patient response to therapy.
    - Serial photographs demonstrated slow but steady wound improvement.



Day One of Treatment

Negative Pressure Wound Therapy
(above and below)

Day Twenty-One of Treatment

Results: The tracheostomy site was assessed and photographed with each dressing change, three times a week. After three weeks of therapy, the wound reduced by 87.5% when negative pressure therapy was stopped. The wound healed completely within 7 days using foam dressings. No adverse events were recorded by clinical nurses or respiratory therapists.

Conclusions: Application of negative pressure wound therapy to an open tracheostomy site is a safe and effective approach for patients where traditional wound care options increase the risk for aspiration, infection, or catastrophic events.

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