Collaborating to Improve Outcomes Related to Tracheostomy Skin Integrity in a Long-term Acute Care Hospital

by

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Objectives/Purpose

- Apply basic principles of wound care to the treatment of tracheostomy skin breakdown.
- Describe an effective protocol for treatment of tracheostomy skin breakdown that can decrease cost and caregiver time demands.

Problem

A key element of tracheostomy management includes the assessment of peristomal skin integrity. Excessive moisture from secretions, perspiration, pressure and friction from the tracheostomy collar and stabilization ties may contribute to the breakdown of peristomal skin. Surgical technique involved in the construction of the tracheostomy may result in an incision wider than the tube itself, which may be a reservoir for pooled drainage and add to moisture management issues. Because patients requiring a tracheostomy for prolonged mechanical ventilation often have compromised health status, the promotion of healing and prevention of further skin breakdown is an essential caregiver consideration.

Methodology

An evaluation of a new foam dressing was completed by the nursing and respiratory therapy staff of a long-term acute care hospital. Seventeen patients with peristomal tracheostomy skin breakdown were originally managed with a protocol that included cleansing of the periwound skin with normal saline followed by the application of a fenestrated non-barrier foam dressing (SOF-FOAM™). During the eight-week evaluation period, a new protocol that substituted the evaluation foam dressing with barrier film (3M™ Tegaderm™ Foam Adhesive Dressing) was initiated. Both protocols involved the use of no antiseptic agents. Dressings were changed twice daily (BID) with as needed (PRN) dressing changes for exudate strike-through. At the completion of the evaluation period, a retrospective review of patient charges and documentation records provided comparative data on the number of PRN dressing changes per patient for each protocol.

Foam dressings were selected for the management of peristomal skin breakdown for several reasons. They are highly absorbent, handling more moisture than fenestrated gauze pads, the traditional dressing for this situation, resulting in fewer dressing changes. They are soft and conformable, providing padding under the faceplate while accommodating folds and contours of the neck. Foam dressings constructed with a semi-permeable barrier film provide protection from exudate strike-through to the outside of the dressing, preventing soiling of trach ties and gown. The film barrier also blocks the absorption of secretions from the outside of the dressing into the dressing, which may occur during coughing and suctioning.

Results

- Skin breakdown of the 17 patients resolved during the eight-week evaluation of the new foam dressing.
- Patients and staff reported that the film barrier backing on the new foam dressing made dressing application easier and more comfortable to slide under the trach ties.
- PRN dressing changes, on average, dropped from four to one dressing per patient per day. This was related to dressing absorbency and a decrease in secretions/drainage strike-through to the exterior of the dressing.
- Foam dressings were found to be comfortable to patients, as they provided cushioning under the tracheostomy faceplate and did not adhere to the wound surface.

Conclusion

The new tracheostomy skin breakdown protocol was effective for patients in a long-term acute care hospital. The new barrier foam dressing eliminated concerns relating to infection control through better containment of exudate. The procedure decreased cost and saved time by decreasing the number of dressing changes required to manage exudate strike-through.

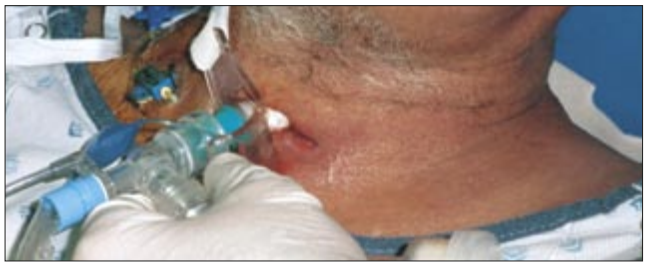

Figure 1. Typical presentation of peristomal tracheostomy skin breakdown. Surgical wound located lateral to tracheostomy, maceration dermatitis dependent to the tracheostomy tube.

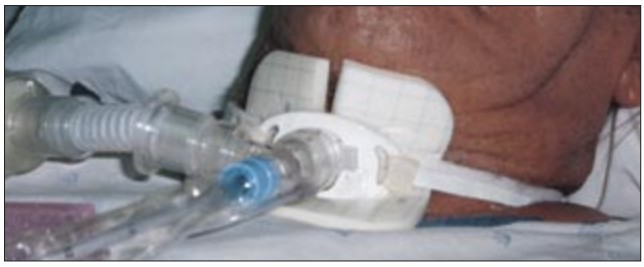

Figure 2. Placement of 3M™ Tegaderm™ Foam Adhesive Dressing following tracheostomy care. Dressing stabilized by tracheostomy ties.

Tracheostomy Skin Breakdown—Protocol

Frequency

Per facility guidelines and PRN dressing saturation

Purpose

Prevent or promote healing of tracheostomy peristomal skin breakdown. Risk factors for breakdown include:

- Excessive moisture at trach site (perspiration or copious secretions)
- Obesity (difficult stomal construction/presence of folds)
- Excessive pressure from faceplate
- Tracheostomy construction resulting in wide stoma
- Immunosuppression (steroid therapy or chemotherapy)
- Poor nutritional status

Supplies

- Fenestrated foam dressing (Tegaderm™ Foam dressing)
- Normal saline
- Gauze pads
- Gloves
- Liquid skin barrier film (PRN)

Procedure

1. Wash hands. Follow facility guideline for infection control.
2. Set up supplies. Apply gloves and appropriate personal protective equipment.
3. Remove soiled dressing and discard.
4. Remove soiled gloves and wash hands. Apply gloves.
5. Clean tracheostomy periostomal skin with normal saline and pat dry.
6. Assess peristomal skin condition, and stoma for signs of infection.
7. Optional: Apply liquid barrier film to periwound skin if maceration is present. Let dry.
8. Apply foam to wound (grid side up), sliding the dressing under trach ties. Ensure ties are secure but not constricting, allowing space for one finger under ties.
9. Document assessments and dressing change.

Considerations

- If a peristomal wound is present and has depth, notify MD/wound care specialist for wound filler recommendations.
- If secretions are excessive and maceration is an issue, a barrier film (3M™ Cavilon™ No Sting Barrier Film) may be used under foam dressings. Use of ointments and creams is not recommended as they may affect the absorbency of foam dressings.

Applications of basic wound care principles to the care of tracheostomy skin breakdown

Avoid antiseptics by using normal saline for cleaning to maintain the viability and phagocytic function of white blood cells needed for wound healing.

Prevent wound dehydration/desiccation by using a dressing that demonstrates a low evaporation level when used with minimally exudative wounds.

Prevent cross contamination by using a dressing with maximum absorption and a barrier backing to keep drainage and secretions contained within the dressing.

Prevent periwound maceration by using a dressing that rapidly absorbs and has a high fluid evaporation rate when saturated.

Minimize discomfort by using a dressing that does not adhere to the wound bed, provides cushioning, and requires fewer dressing changes.

Decrease cost and caregiver time by using a dressing that requires fewer dressing changes related to a combination of absorbency and fluid evaporation for maximum fluid management.

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