

Polymeric Membrane Tube Site Dressings* Improve Tracheostomy Site Management While Increasing Patient Comfort



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BACKGROUND

It is estimated that each year more than 7,000 patients receive tracheostomies in Australia and New Zealand. Most patients commence their care within the Intensive Care Unit.¹ In 2009, Princess Alexandra Hospital performed one hundred and sixty-eight tracheostomies.

The patient with a tracheostomy is at risk of infection within the pulmonary tree as well as the surgical site.² Soiled, moist tracheostomy dressings contribute to infection at the tracheal stoma by providing a moist environment for bacterial growth.² Some tracheostomy dressings also shed fibers that can stick to the wound as well as being inhaled.³

Following a review by the critical incidence and mortality committee at the Princess Alexandra Hospital, Brisbane, a number of discrepancies in regards to tracheostomy management were highlighted, among

those being the inconsistency and functionality of the currently used tracheostomy dressings.

Therefore a tracheostomy management team consisting of ENT Registrar and ENT Clinical Nurse Consultant, was created to look at all aspects of tracheostomy management within the facility.

A pre-existing group of clinical professionals within the Princess Alexandra Hospital, the Tracheostomy Education And Management Service (TEAMS) were consulted in regards to the management of tracheostomies and in particular the current dressing protocol.

No standard dressing protocol was found, therefore it was decided to perform a product appraisal of currently used tracheostomy dressings, in order to identify a tracheostomy dressing that would improve patient care outcomes.

OBJECTIVE

Tracheostomy care dressings used at Princess Alexandra Hospital (PAH), Brisbane were found inadequate. A project was initiated to identify a tracheostomy dressing that would improve patient care outcomes.

The historical tracheostomy site dressing presented several patient care limitations: **1)** when the stoma was heavily exudating, the dressing had inadequate absorbency, which often resulted in excoriation of the surrounding skin; **2)** when mucous secretions became dry in the dressing, the secretions would create a glue-like bond between the dressing and the stoma site, resulting in trauma to the site and pain to the patient during dressing removal; **3)** too bulky at the stoma site which resulted in discomfort for the patients and difficulty for the staff to change; **4)** the dressings failed to relieve the patients' discomfort at the tracheostomy site, and **5)** did not adequately support healing at the tracheostomy site.



Trach dressings composed of gauze or other materials which can shed materials that can be inhaled should be avoided³



Tube site dressings should stay in place in order to protect the peristomal area

METHODS

An evaluation of the polymeric membrane tube site dressing was performed as part of a best practice evaluation of tracheostomy dressings. The polymeric membrane tube site dressings were evaluated because they **1)** offered superior absorbency of blood and secretions from the tracheostomy stoma compared to the historical dressings; **2)** were designed to never stick to the tracheostomy stoma, allowing greater comfort when changing the dressing at the stoma site; **3)** were thinner, therefore offering greater

patient comfort and ease of change; **4)** the unique dressing design is recognized to help relieve pain, oedema, and inflammation in both acute and chronic wounds;^{4,5,6} and **5)** the dressing design is recognized to support healing of wounds,^{4,5,6} and therefore would support improved healing of the tracheostomy stoma.

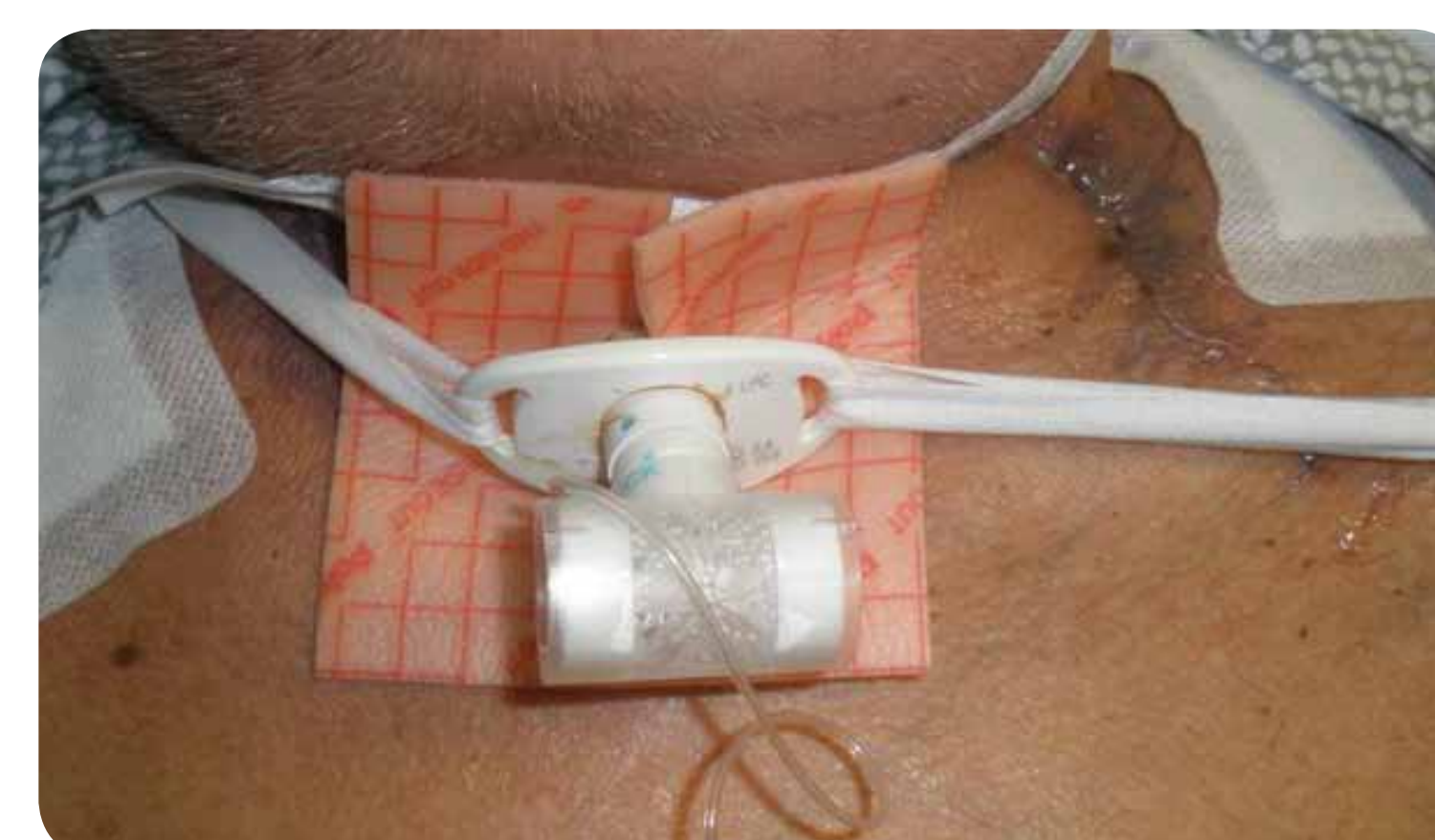
Dressings were evaluated by staff in a number of specialist areas of Princess Alexandra Hospital in order to determine that the dressings optimized care for all involved departments.

RESULTS

The multifunctional polymeric membrane dressings improved the tracheostomy care and outcomes in all departments where it has been implemented.

The stoma sites were much cleaner when the polymeric membrane tube site dressings were used than when the historical dressings were used. This favorable outcome was because of the continuous cleansing provide by the dressing, along with the greater absorbency of blood and secretions from the tracheostomy stoma sit

The dressings' excellent absorbency eliminated the problems with excoriation of the surrounding skin previously experienced.



PolyMemic membrane dressing easy to put on and easy to change when the tube is tied in place

The dressing changes were much more comfortable and much faster because the dressing did not stick to the stoma site, plus the dressings helped to reduce the erythema, oedema and increased tenderness and pain normally observed at the stoma site.

The dressings were also much thinner which was also very comforting to the patients both while wearing the dressing and during the dressing change process.

The reduction in inflammation at and around the stoma site seen with the polymeric membrane dressing was usually accompanied by reduction in the inflammation of the trachea at and around the incision site.



PolyMemic membrane tube site dressings are easy to cut to shape when the tube is sutured in place.

DISCUSSION

PolyMemeric membrane dressings have been shown to reduce the spread of inflammation into the surrounding undamaged tissues while concentrating the robust inflammatory response needed for healing into the actual site of injury.⁴ The result of these combined actions is that wounds covered with polymeric membrane dressings are more comfortable because they are not as inflamed. Inflammation is the single greatest cause of wound pain.^{7,8}

The dressings reduce the activity of the nociceptor nerve fibers.⁴ The nociceptor nerves, often referred to as free nerve endings or inflammatory nerves, are responsible for initiation of and modulation of local responses to injury including oedema, inflammation, pain and the spread of these responses into surrounding undamaged tissue.^{9,10} Nociceptor responses play key roles in the development of hyperalgesia and allodynia that occur at the site of injury.¹¹

CONCLUSION

The multifunctional polymeric membrane tube site dressings are now the preferred standard for managing tracheostomy sites at Princess Alexandra Hospital.

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*PolyMem wound dressings are made by Ferris Mfg. Corp., Burr Ridge, IL. 60527 U.S.A

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