

INCIDENCE OF SKIN BREAKDOWN IN ORALLY INTUBATED PATIENTS: COMPARING COMMERCIAL TUBE HOLDERS VERSUS TAPE TO SECURE ENDOTRACHEAL TUBES

Stephanie Qualls RN, BSN, MaiAnh Tran-Allen RN, BSN, and Laura Jones, RN, BSN
Lunder 6 Neuroscience Intensive Care
Massachusetts General Hospital, Boston, MA

PURPOSE

Using the John Hopkins Nursing Evidence-Based Practice Model the following question was investigated: In orally intubated patients, does taping versus using commercial tube holders minimize skin breakdown?



BACKGROUND/ SIGNIFICANCE

- Endotracheal intubation is frequently used for patients who are cared for in intensive care units.
- Often intubation of these patients can be prolonged, and a patient's skin integrity can be compromised by the device used to secure the endotracheal tubes (ETT).
- Trauma due to adhesives, fungal infections, exoriation, and pressure ulcers may be related to the ETT holder.
- A hospital acquired pressure ulcer can cost an institution upwards of \$37,800 per patient on a single admission and is not reimbursed (Lyder & Ayello, 2008).
- There is practice variance on our unit due to provider preference and patient condition.

METHODS

- Using the John Hopkins Nursing Evidence-Based Practice Model, a PICO question was developed.
Population: ICU patients
Intervention: Commercial tube holders for ETTs
Comparison: Tape for ETT securement
Outcome: Preserved skin integrity
- Search Criteria:
 - Databases:
 - CINAHL, Ovid Nursing and Ovid Medline
 - Inclusion Criteria:
 - English language
 - Evaluation of both tape and commercial tube holders
 - Exclusion Criteria:
 - Pediatric populations
- Keywords used in literature review
 - tape OR tapes OR taping OR knot* OR adhesive* OR securements OR securing OR stabiliz* OR stabilis* OR fixation AND
 - holder* OR device* OR securements OR securing OR stabiliz* OR stabilis* OR fixation AND
 - "endotracheal tube" OR "endotracheal tubes" OR "endotracheal tubing" OR ETT OR intubat* OR extubat* AND
 - "skin integrity" OR "skin breakdown" OR ulcer* OR decubitus OR "skin lesion" OR "skin lesions"
- The John Hopkins Nursing EBP tool values randomized control trials (RCTs) as the highest quality evidence. Quasi experimental studies are rated as level II evidence.
- Evidence presented in the articles were reviewed for consistency and applicability.

RESULTS

- Sixteen articles were available from the search criteria and seven applicable to our PICO question.
- Subjects were adults, and in one case an adult mannequin, sample size ranged from 30-1522.
- None of the studies found were RCTs. Five of the articles found were quasi experimental, which is level II quality.
- In a comparison between tube holders and tape
 - Three articles demonstrated tube holders resulted in less skin breakdown.
 - One study showed tape exerted less applied forces resulting in less skin breakdown.
 - Three articles showed no difference between the two.
- None of the articles referenced any fungal skin infections due to securement technique.



CONCLUSIONS

There is a paucity of strong evidence related to this topic. Based on our review, there is limited evidence to support a change of practice regarding ETT securement.

IMPLICATIONS

- More research is needed before recommending a nursing practice change.
- Studies failed to evaluate patients with prolonged oral intubation, the frequency of changing tape or tube holders, position changes of ETT, and skin preparation prior to placement. Future research could include these variables.
- The nurse and respiratory therapist should continue to use their clinical judgment when choosing a method to secure an ETT.

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