A Utilisation of Anchor Fast Oral Endotracheal Tube Fastener to Reduce the Incidence of Lip Ulcers

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Creation Date: November 2009
Presented: December 2010
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Introduction

Oral endotracheal intubation is a common clinical intervention in the critical care environment. Unfortunately, endotracheal intubation is not without complications, even when executed with expertise and diligently maintained. One of the complications of endotracheal intubation is the development of lip ulcerations secondary to maintaining a patent and secure airway. The development of lip ulcers has been identified as both a patient safety issue and an added financial burden.[1] Another concern is the time requirement placed on the clinical team to apply and change tape or commercial tube fasteners.

Methods

Anchor Fast Oral Endotracheal Tube Fastener (Hollister Incorporated, Libertyville, IL) was used instead of tape on sixteen patients during the months of August and September, 2008. Patients were adults with anticipated intubation of 24 hours or longer. In October, after the pilot evaluation, the product was made widely available in our hospital. The Respiratory Therapists decided when to use the Anchor Fast Tube Fastener, or traditional taping to secure the endotracheal (ET) tube. We tracked the incidence of Ventilator-Associated Pneumonia (VAP), lip ulcers, tape changes, and ventilator days on a monthly basis. Data from the months following adoption of the Anchor Fast Tube Fastener are shown in bold.

1 Lyder CH, Ayello EA. Pressure ulcers: a patient safety issue. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. www.ahrq.gov/qual/nursehdbk/docs/lyderc_pupsi.pdf. Accessed November 3, 2009.

FINANCIAL ASSISTANCE/DISCLOSURE
The support of Hollister Incorporated for this clinical presentation is gratefully acknowledged.

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
VAP	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Lip Ulcer	1	1	2	2	1	4	1	3	2	**1**	**0**	**0**
Tape changes	34	41	77	49	71	52	71	76	75	**57**	**40**	**38**
Vent Days	186	158	183	212	202	175	158	162	205	**189**	**109**	**177**
Inadvertent Extubations	0	1	1	1	1	0	2	0	1	**1**	**0**	**0**

Figure 1 2008 Data

Traditional Methods of ET Tube Securement

- Cloth tape
- Velcro-style tube holder
- Other commercial tube holders

Problems Associated with Taped ET Tubes

- Lip and skin breakdown
- Low compliance with moving the ET tube (Q4 hours)
- Poor visualisation of skin integrity under the tape

Figure 2 Lip pressure ulcers associated with use of tape.

Figure 3 Anchor Fast Oral Endotracheal Tube Fastener

Key Improvement Steps

- Development of Safety Committee
- Chart reviews to record baseline data
- Instituted electronic documentation
- Evaluation and implementation of new product:
  - Anchor Fast Oral Endotracheal Tube Fastener

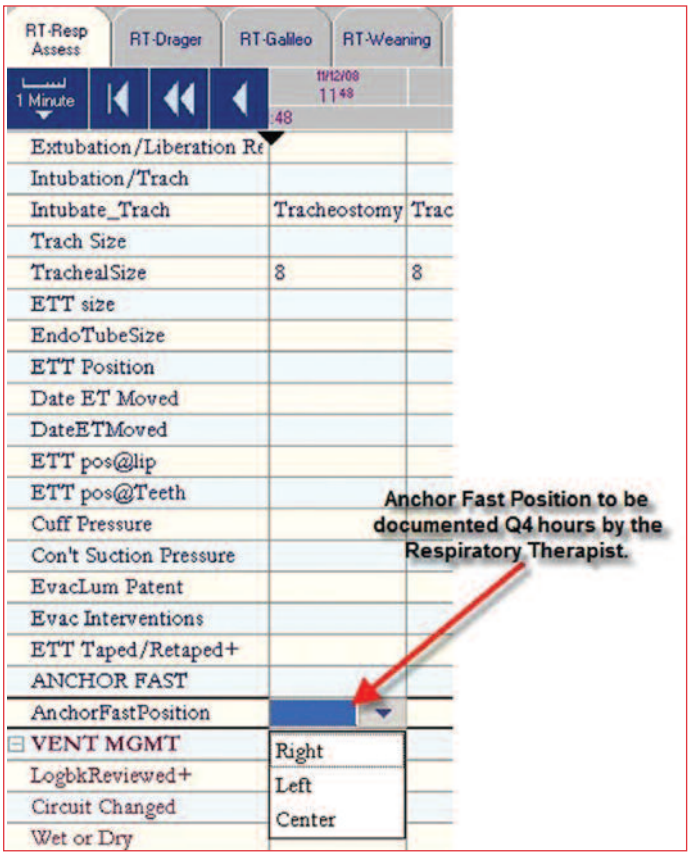

Figure 4 Electronic Documentation

Results

After institution of the new product, clinicians noted a reduction in the occurrence of lip ulcers in the assigned patient population. Incidence of VAP and ventilator days remained unchanged. We also noted a reduction in tape changes implying a possible time savings for clinicians. There was no increase in inadvertent or accidental extubations. The advantages of this product change included:

- Observed reduction in lip ulcers
- Enhanced ability to move the ET tube
- Same stability as tape.

Conclusion

Based on our clinical evaluation, the Anchor Fast Oral Endotracheal Tube Fastener may offer advantages over tape when securing an oral ET tube. We observed a reduction in lip ulcers with no increase in extubation or VAP. With proper product application and adherence to institutional policy for moving the ET Tube, the product may help reduce clinician time needed to re-adjust or re-apply ET tube holders or tape.

Recommendations

We plan to implement use of this device at our main hospital campus, then track outcomes over a longer time frame on this larger sample. Future studies should be conducted with larger sample sizes.

Hollister

As Presented at

The 55th International Respiratory Congress

December 5–8, 2009

San Antonio, TX USA

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