

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

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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.

	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 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 visualization 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

RT-Resp Assess	RT-Drager	RT-Galileo	RT-Weaning
1 Minute	11/12/08	11:48	
Extubation/Liberation Re			
Intubation/Trach			
Intubate_Trach	Tracheostomy	Trac	
Trach Size			
TrachealSize	8	8	
ETT size			
EndoTubeSize			
ETT Position			
Date ET Moved			
DateETMoved			
ETT pos@lip			
ETT pos@Teeth			
Cuff Pressure			
Con't Suction Pressure			
EvacLum Patent			
Evac Interventions			
ETT Taped/Retaped+			
ANCHOR FAST			
AnchorFastPosition			
☐ VENT MGMT	Right		
LogbkReviewed+	Left		
Circuit Changed	Center		
Wet or Dry			

Anchor Fast Position to be documented Q4 hours by the Respiratory Therapist.

Figure 4 Electronic Documentation

Results

After institution of the new product, clinicians noted an apparent 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.



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