NON-OPERATING ROOM EMERGENCY AIRWAY MANAGEMENT AND TRACHEAL INTUBATION: A PROSPECTIVE TRACHEAL INTUBATION STUDY

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Introduction: Emergency airway management and tracheal intubation outside of a controlled operating room setting is often required for critically ill patients. To date there are few published reports of non-operating room emergency airway management (1). We present a prospective study which evaluated indications, medications, and complications during non-operating room emergency airway management of critically ill patients.

Methods: After obtaining Institutional Review Board (IRB) approval, all patients requiring emergency tracheal intubation at Fairview-University Medical Center were enrolled. After tracheal intubation of the critically ill patient, the anesthesia provider responsible for airway management completed a questionnaire which included the following topics: (1) indication for intubation; (2) intubation technique; (3) type of anesthesia; (4) medications and dosage administered; (5) difficulty of intubation; (6) number of attempts at intubation; (7) pre- and post-intubation vital signs; (8) complications; (9) need for emergency medications and dosage; (10) time, date and location.

Results: From July 1 to December 31, 2001 the anesthesia care team performed a total of 144 non-operating room intubations, of which 141/144 (98%) were performed by the CA-2 residents and 3/144 (2%) were performed by staff anesthesiologists or nurse anesthetists. Sedative/hypnotics and muscle relaxants were administered 124/144 (86%) and 44/144 (31%), respectively.

Table 1 Indication for Tracheal Intubation	
Respiratory failure	81/144 (56%)
Decreased consciousness	33/144 (23%)
Cardiac arrest	14/144 (10%)
Respiratory arrest	12/144 (8%)
Increased ICP	3/144 (2%)

Table 2 Complications of Tracheal Intubation	
Hypertension	27/144 (19%)
Hypotension	21/144 (15%)
Tachycardia	8/144 (3%)
Emesis	5/144 (2%)
Bradycardia	2/144 (1%)

Table 3 Perceived Difficulty of Intubation	
Grade 1	86/144 (60%)
Grade 2	33/144 (23%)
Grade 3	15/144 (10%)
Grade 4	10/144 (7%)

Table 4 Number of Attempts at Intubation	
1	123/144 (85%)
2	16/144 (11%)
3	4/144 (3%)
4 or more	1/144 (1%)

Conclusion: Non-operating room emergency airway management and tracheal intubation is often required for critically ill patients. Although CA-2 residents perform the majority of emergency tracheal intubations, we have not had a major complication such as failure to intubate a critically ill patient. Our very low complication rate without serious sequalae may be due to the judicious use of neuromuscular blocking agents.

References:

1. Pankaj et al., Non-Operating Room Emergency Airway Management and Endotracheal Intubation Practices: A Survey of Anesthesiology Program Directors. *Anesthesia and Analgesia* 1997;85:62-8.