

POSTER 223

The Esophageal Detector Device: Accuracy and Reliability in Difficult Airway Settings

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Purpose: The esophageal detector device (EDD) recently has been found to assess endotracheal (ET) tube placement accurately. This study determined the reliability of the EDD in determining ET tube position in difficult clinical airway situations.

Methods: This study was a prospective, randomized, single-blinded, controlled, laboratory investigation. Two airway managers (an Emergency Medicine attending physician and resident) determined ET tube placement using the EDD in five anesthetized swine (average weight = 23.5 kg) in respiratory arrest. The ET tube was placed in the following clinical airway situations: esophagus, esophagus with 1 liter of air instilled, trachea, trachea with 5 cc/kg water instilled, and right tracheal mainstem. Anatomic location of the tube was verified by left chest thoracotomy.

Results: There was 100% agreement between the resident and attending physician's use of the EDD. The EDD was 100% accurate in determining tube placement in esophageal, esophageal with 1 L of air instilled, tracheal, and right mainstem intubations. The airway managers were only 80% accurate in detecting tracheal intubations when fluid was present.

Conclusions: The EDD is an accurate and reliable device for detecting ET tube placement in most clinical situations. Tube placement in fluid filled trachea/lungs, which occurs in pulmonary edema and drowning, may not be detected. This simple device may be useful in the emergency medical services (EMS) setting.

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Lights and Siren Versus No Lights and Siren: Ambulance Transport Time From the Scene to the Emergency Department

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Purpose: The purpose of this study was to determine if ambulance transport time from the scene to the emergency department (ED) is faster using lights and sirens (L&S) compared to not using L&S.

Methods: This was a prospective study of transport time from the scene to the ED comparing a control group using L&S with an experimental group not using L&S. In the L&S group, an observer on the ambulance recorded the route and transport time from the scene to the ED during an actual patient transport. In the non-L&S group, time was recorded for identical routes when a paramedic drove the ambulance during simulated transports. The driver in the non-L&S group was instructed to obey the speed limit, traffic laws, and signs. Each non-L&S transport was performed at the same time and on the same day of the week as the corresponding L&S transport. Transports were done by a municipal EMS system's ambulances in a city with a population of 45,000. All transports were to a university medical center ED located within the city limits.

Results: Fifty-three transports with lights and siren averaged 36.5 seconds faster than the 53 corresponding transports without L&S [t (dependent X_3) = -3.44, p = .0012].

Conclusion: The difference in transport time is statistically significant, but not clinically important. In this setting, use of lights and siren during ambulance transport from the scene to the ED is not warranted.