# Detecting Esophageal Intubation with the Self-Inflating Bulb

Several devices are now available for the independent confirmation of tracheal placement of an endotracheal tube. End-tidal $CO_2$ methods have proven most reliable but may falsely indicate esophageal intubation in patients with prolonged cardiac arrest. An alternative approach uses a self-inflating bulb (SIB) that tests for rapid reinflation when applied to the endotracheal tube, indicating tracheal placement. These Seattle researchers evaluated the TubeChek B® SIB for detection of esophageal intubation in 300 consecutive patients undergoing emergency intubation.

Patients were intubated in the ICU (56%), ED (35%), or elsewhere (9%), usually with a rapid sequence intubation (RSI) technique. Following intubation, the SIB was compressed and applied with the endotracheal tube cuff deflated. Esophageal placement was defined as failure to inflate in 10 seconds. Infrared and colorimetric end-tidal $CO_2$ and direct laryngoscopy (if necessary) were used to confirm tube position. Of 316 intubation attempts, 19 (6%) were esophageal. The SIB was 100% sensitive and 99% specific in detecting esophageal intubation. Three patients in cardiac arrest had no detection of $CO_2$ with tracheal intubation confirmed by the SIB.

**Comment:** Despite these optimistic results, aspiration techniques for confirmation of tube placement are not as reliable as end-tidal $CO_2$ methods. This study reaffirms the self-inflating bulb as an adjunct for confirming tube placement in cardiac arrest patients who may have false-negative $CO_2$ detection or when $CO_2$ detection is not available or practical.

***— RM Walls***

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Kasper CL and Deem S. The self-inflating bulb to detect esophageal intubation during emergency airway management. *Anesthesiology* 1998 Apr 88 898-902.