Repeated Attempts at Intubation Are Associated with Adverse Events

A rescue airway device should be considered after two attempts.

Conventional wisdom is that first-pass success at intubation is good and that multiple attempts are associated with untoward events, yet no evidence links multiple intubation attempts with adverse events in an emergency department (ED) patient population.

In this analysis of a prospective registry of 2616 patients who required intubation in 11 Japanese EDs, 11% of patients required multiple laryngoscopic attempts (defined as ≥3). First attempts were performed by emergency physicians (including emergency medicine residents) in 48% of cases and by transitional-year residents (postgraduate year 1 or 2) in 40%.

The authors determined that multiple attempts were associated with an increased risk (adjusted odds ratio, 4.5) for intubation-related adverse events (defined as cardiac arrest, dysrhythmia, hypotension, hypoxemia, unrecognized esophageal intubation, regurgitation, airway trauma, dental or lip trauma, and mainstem bronchus intubation). Unrecognized esophageal intubation was the most common serious untoward event. Curiously, intubation was attempted without any medication in more than 50% of cases, with induction or sedative agents alone in 20%, and using rapid sequence intubation (RSI) in 20%.

Comment: It is important to note that the authors did not attempt to correlate adverse events with outcomes. In addition, predictors of difficult airways were not quantified, and a substantial proportion of first attempts were performed by trainees (without mention of their airway training) and without RSI — yet difficult airway, poorly trained operators, and nonuse of RSI would likely increase the rate of first-attempt failure. Nonetheless, multiple attempts were associated with adverse events; thus, it would be prudent to limit the number of attempts at intubation to two, after which a rescue device should be considered.

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Dr. Zane was and Dr. Walls is a member of the same department as several of the study authors, but none of those authors had any role in the selection, writing, or review of this summary.

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