Direct Laryngoscopy Outperforms Airtraq in a Physician-Staffed Prehospital System

Intubation performed by experienced physicians in an Austrian prehospital system was significantly less successful with the Airtraq laryngoscope than with direct laryngoscopy.

Video and optical laryngoscopy are fast becoming preferred over direct laryngoscopy for emergency intubation. In a prospective, randomized study, researchers compared the Airtraq laryngoscope (a prism-based optical device) and direct laryngoscopy in 212 adults who were intubated by anesthesiologists and emergency medical services (EMS) physicians in an Austrian ground and helicopter prehospital system. Participating physicians performed at least 80 intubations per year and received Airtraq training on manikins and in the operating room (with 2–5 patients) before the study. Patients who did not have cardiac arrest received etomidate or ketamine supplemented by fentanyl and midazolam for induction and succinylcholine for paralysis.

Intubation was successful in significantly more patients in the direct laryngoscopy group than in the Airtraq group (99% vs. 47%). Direct laryngoscopy was attempted as a rescue procedure in the 56 patients with failed Airtraq intubation and was successful in 54. The overall success rate for direct laryngoscopy was 98%. In the three patients with failed direct laryngoscopy, the airway was secured with a Fastrach laryngeal mask. Time to intubation was significantly longer in the Airtraq group. Causes of failed Airtraq intubation included cuff damage (10 patients), poor visibility of the glottis (13), and impaired mouth opening (5).

Comment: The finding that experienced physicians had a significantly lower rate of successful intubation with the Airtraq laryngoscope is surprising and raises questions about the adequacy of their Airtraq training. In previous studies, experienced operators found the Airtraq superior to direct laryngoscopy in patients both with and without difficult airways (JW Emerg Med Feb 8 2008 and JW Emerg Med Nov 3 2006) and reported higher success rates with the Airtraq. Individual systems and providers must evaluate the various airway devices to determine which is best in their settings.

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