Airway Scope vs. Macintosh Laryngoscope for Patients Lying on the Ground

Intubation success rates did not differ significantly with the two devices, but the results are difficult to generalize.

Prehospital intubation of patients lying supine on the ground can be logistically challenging. In a randomized study, researchers compared the Airway Scope (a video laryngoscope with an attached liquid crystal display) and the Macintosh laryngoscope in 100 adult elective surgery patients without markers of difficult laryngoscopy (i.e., Mallampati grade IV or thyromental distance <6 cm) who were intubated in a simulated ground position. Instruments were supplied by the manufacturers.

After anesthesia was induced, a single experienced anesthesiologist (>150 intubations with the Airway Scope) performed intubation from a table placed at the same height as the operating table, either with the Airway Scope while kneeling or with a Macintosh laryngoscope while in the left lateral decubitus position. Mean time to intubation (the primary outcome) was significantly shorter with the Airway Scope than with the Macintosh laryngoscope (18 vs. 35 seconds). Intubation success rates did not differ significantly (98% and 100%, respectively). No significant differences were noted between groups in Cormack-Lehane view, percentage of glottic opening (POGO; an alternative laryngoscopy grading system), number of intubation attempts, or incidence of intubation complications. No patient developed hypoxia (SpO₂ <95%).

Comment: All patients were intubated by a single, highly experienced operator, so these results are difficult to generalize to less-experienced emergency medical services providers or residents. Furthermore, the shorter time to intubation with the Airway Scope is unlikely to be clinically meaningful. Considering that a recent study demonstrated poor performance of the Airway Scope in simulated out-of-hospital lighting conditions (JW Emerg Med Jul 16 2010), we cannot recommend the Airway Scope for the prehospital setting.

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Dr. Walls has provided testimony in a patent infringement suit in Scotland on behalf of Verathon, Inc., manufacturer of the GlideScope video laryngoscope.

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