Need to Exchange a Tracheal Tube? Use Video Laryngoscopy

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Video laryngoscopy improved first-attempt success and lowered rates of complications compared with direct laryngoscopy in a single-center registry study of endotracheal tube exchanges using airway exchange catheters.

Endotracheal tube (ETT) exchange is required when ventilation is ineffective because of either cuff failure or tube size. The procedure is often performed over an airway exchange catheter and, although straightforward, may be complicated by hypoxemia, esophageal intubation, or failure to reintubate. Laryngoscopy can facilitate successful ETT exchange by allowing pre-exchange airway evaluation and easier tube passage, by opening a channel to the glottic inlet. It is not known whether video laryngoscopy is superior to direct laryngoscopy in this role.

Using a single center's ETT exchange database, investigators compared success rates and complications between 328 intensive care unit patients who underwent ETT exchange over an airway exchange catheter with video laryngoscope guidance (study group) and 337 patients who underwent the same procedure with direct laryngoscopy (historical control group). All patients in both groups had poor glottic views (Cormack and Lehane grade III or IV) on pre-exchange airway assessment by direct laryngoscopy. In the study group, patients underwent subsequent assessment with either a GlideScope or McGrath video laryngoscope, followed by ETT exchange with the video laryngoscope. The study and control groups had similar demographic and difficult airway risk factors.

Glottic views improved to grade I or II with video laryngoscopy in 88% of study group patients. The study group had a significantly higher first-attempt success rate (92% vs. 68%) and lower rates of hypoxia (5% vs. 13%), esophageal intubation (0% vs. 2%), cardiac arrest (0% vs. 2%), and failure to reintubate with need for a rescue device (1% vs. 5%).

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<th>Tracheal tube exchange is not a common procedure in the emergency department, but when needed, it should be performed with video laryngoscopy.</th>
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