Management of the Unanticipated Difficult Airway

The American Society of Anesthesiologists published a difficult airway algorithm in 1993 and recently updated it, but the expert-consensus-based algorithm has not been validated prospectively. In this prospective study, all 41 anesthesiologists at one hospital in France were trained to follow a specific protocol in cases of unanticipated intubation difficulty, ventilation difficulty, or both.

The protocol dictated the use of a gum elastic bougie (GEB) for intubation difficulty, followed by insertion of an intubating laryngeal mask airway (ILMA) if intubation was still not successful. Intubation difficulty was defined as two failed laryngoscopy attempts by a senior physician using optimal laryngeal manipulation. For difficult ventilation, the protocol recommended ILMA insertion followed, if necessary, by percutaneous transtracheal jet ventilation. Difficult ventilation was defined as an inability to maintain oxygen saturation over 90%, need for a two-handed mask technique, excessive mask leak, or no chest rise.

Among 11,257 intubations performed during the 18-month study period, difficult ventilation occurred in 6 patients (0.05%; with no cases of impossible ventilation), and difficult intubation occurred in 100 (0.9%). Of patients with difficult intubation, six had difficult ventilation and underwent ILMA insertion with subsequent intubation through the ILMA, two were awakened before an alternative technique was tried, one underwent direct laryngoscopy six times, one underwent fiberoptic intubation, and one was intubated with a stylet. GEB use was successful in 80 patients. The remaining nine patients had ILMAs placed, and seven were intubated successfully through it. Only three patients had oxygen desaturation to lower than 80% at any time.

Comment: Although the protocol was applied consistently in this study, these 100 cases do not constitute validation of this approach. The rarity of unexpected difficult ventilations and unexpected difficult intubations in this study of elective anesthesia patients highlights the effectiveness of assessing for difficult mask ventilation and difficult intubation before paralyzing a patient in the emergency department. Armed with such information, surprises will be rare.

— Ron M. Walls, MD, FRCPC, FACEP

Published in Journal Watch Emergency Medicine June 16, 2004

CITATION(S):