Video Assistance Improves Fiberoptic Intubation Performance by Novice Intubators

Flexible fiberoptic intubation is increasingly used in emergency departments for patients with difficult airways, but the technique requires practice to achieve competence. These investigators postulated that novice intubators would have better success with fiberoptic intubation when they were instructed by experienced intubators who could share the view using a video-assisted device than when the intubator alone could see the anatomy through a conventional eyepiece.

Twenty second-year anesthesia residents were randomly assigned to perform fiberoptic intubation with either conventional eyepieces (EYE) or videoscopes (VID) after receiving a standardized orientation to performing the procedure in children. A convenience sample of 300 children (age, 1-6 years; American Society of Anesthesiologists class 1 or 2) underwent general anesthesia, paralysis with 0.6 mg/kg of rocuronium, and suctioning before intubation. No antisialagogue was given. Each resident attempted fiberoptic intubation in 15 patients while one of two supervising attending anesthesiologists instructed them, based on the shared video image or on external observation. All steps were timed, and attempts were halted if oxygen saturation fell to 95% or 3 minutes had elapsed.

Intubation was significantly faster in the VID group than in the EYE group (median time, 50 vs. 72 seconds), and the success rate per attempt was three times higher. Performance for the sixth to tenth intubations was significantly better than for the first to fifth, but performance did not improve further.

Comment: Emergency medicine residency programs that teach fiberoptic intubation should use a video system to enhance the success of trainees. In this study, performance improved significantly during the first five precepted fiberoptic intubations, suggesting that this number of intubations should be used in clinical or simulation-based training.

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