

[A-15] A randomized comparison of free-handed vs. SGA-assisted fiberoptic tracheal intubation in children less than two years of age: Does operator experience affect time to successful tracheal intubation?

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**Background:** At least 30% of practicing anesthesiologists have limited experience with fiberoptic bronchoscopy and may not feel confident relying on their skills in difficult airway situations.(1) Supraglottic airway devices (SGA) can act as a conduit to help guide fiberoptic tracheal intubation where traditional techniques have failed. The air-QTM intubating laryngeal airway is a supraglottic airway device specifically designed to facilitate fiberoptic tracheal intubation.(2) The aim of this study was to compare the effect of an SGA on the time for fiberoptic tracheal intubation in operators with limited prior experience.

**Methods:** After IRB approval written informed consent was obtained from the parents of all patients. A total of 80 children between one and 24 months of age scheduled for elective surgery requiring general endotracheal anesthesia were enrolled in. Each patient was randomized by technique (free-handed or air-Q assisted fiberoptic tracheal intubation), and by operator (attending or trainee), resulting in four groups of 20 patients. The time for successful tracheal intubation was the primary outcome measure. Secondary measures included time for successful air-Q placement, leak pressure, and fiberoptic grades of view through the SGA, manipulations required for improvement of view, number of attempts for successful intubation, and perioperative complications.

**RESULTS:** Of the 80 patients enrolled, two patients in the trainee free-handed group were excluded from analysis due to failed fiberoptic tracheal intubation. After three unsuccessful attempts, direct laryngoscopy and intubation was performed without difficulty. There was a statistically significant difference in the time for successful tracheal intubation in the free-handed fiberoptic group between the attendings and trainees (40.6 seconds  $\pm$  12.6 vs. 72.8 seconds  $\pm$  22.2,  $p < 0.0001$ ). The difference between the attendings and trainees in the SGA group, however, was not significant (56.69 seconds  $\pm$  24.7 vs. 70.04 seconds  $\pm$  23,  $p = 0.08$ ). The time for successful air-Q placement was faster by the attendings (12.9 seconds  $\pm$  3.2) vs. trainees (19.1 seconds  $\pm$  4.5),  $p < 0.0001$ . There were no significant differences in the leak pressures or fiberoptic grades of view through the SGA. There were also no significant differences in the number of attempts for intubation (the majority were successful on the first attempt), and complications were very low in all groups.

**Conclusion:** The use of an air-Q as a conduit for fiberoptic tracheal intubation in smaller children may provide a degree of comfort in clinicians who have limited experience with pediatric fiberoptic bronchoscopes.

**References:**

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