Innovating in Anticipated Difficult Airways in Children

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A supraglottic airway is an effective rescue device for airway management in children.

A supraglottic airway (SGA) device is often used in adults as a bridge to endotracheal intubation or rescue for failed intubation. However, data on their use in children is limited and mostly from case reports. To assess the effectiveness of SGAs for primary airway management in children with anticipated difficult intubation, researchers retrospectively reviewed electronic medical records for 77,272 children aged 1 day to 18 years undergoing general anesthesia at a single academic children’s hospital over a 4-year period.

Investigators identified patients by searching records for markers of difficult airway, including ICD-9 codes for diagnoses associated with a difficult airway, the keyword “difficult airway,” and Cormack-Lehane grade ≥3. Overall, 459 patients were classified as having a difficult airway and of these, 109 (mean age, 6.5 years) received an SGA for primary management. Ventilation with an SGA was successful in 96% of patients. In two of the four unsuccessful cases, the device was replaced by a different type or size of SGA, and the remaining two patients were intubated by fiber-optic scope through the SGA.

Comment: The high ventilation success rate with supraglottic airway devices in these pediatric patients with difficult airways strongly reinforces their use as a rescue from a failed airway and may make a case for their use as a primary airway management tool for children. Future prospective studies that evaluate the factors associated with SGA failure will help target their use in children.

Citation(s):

(http://dx.doi.org/10.1093/bja/aet411#sthash.dCYMU1O2.dpuf)

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