Title: The air-Q™ Intubating Laryngeal Airway as a means of rescue ventilation and blind tracheal intubation in two pediatric patients with airway bleeding

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Introduction: The ‘can’t ventilate, can’t intubate’ scenario is a very rare event in pediatric patients. However, the incidence is not zero, as a study of the National Emergency Airway Registry Database found that 0.56% of intubations required cricothyrotomy (1). Means of circumventing the surgical route and preserving ventilation by use of the laryngeal mask airway is an accepted part of the difficult airway algorithm (2). Furthermore, the intubating LMA (ILMA), LMA-Fastrach™, and LMA-CTrach™ (LMA North America: San Diego, CA, USA) are accepted supraglottic airway devices for the difficult airway in the adult population (3). However, the presence of such devices has not been available for use in the pediatric emergent airway. The air-Q™ intubating laryngeal airway (air-Q ILA) (Cookgas LLC: St. Louis, MO, USA) is a new supraglottic airway device available for the pediatric population. The air-Q ILA shares an insertion technique similar to the LMA-Classic™ (cLMA). It provides a conduit for tracheal intubation using a cuffed endotracheal tube, which is similar to the ILMA (4). The air-Q ILA is available in sizes appropriate to accommodate the pediatric airway. Thus, it has potential for use as a rescue airway device in the pediatric patient following a failed tracheal intubation. We present two pediatric bleeding airway cases requiring blind tracheal intubation through the air-Q ILA following failed rapid sequence with direct laryngoscopy in the emergency department.

Case 1: A 5-yr-old, 28 kg male presented to the emergency department for bleeding one day after tonsillectomy. He had a history of obstructive sleep apnea. A rapid sequence intubation was performed and made difficult by extensive bleeding in the oropharynx. The glottic opening could not be intubated after two attempts. A size 2 air-Q ILA was inserted, and a cuffed 5.0 mm ID endotracheal tube (ETT) was blindly inserted through the lumen. Placement was confirmed with end-tidal capnography.

Case 2: A 13-yr-old, 40 kg male presented to the emergency department following a motor vehicle accident. He was previously healthy, but presented with a large nasopharyngeal laceration. He was disoriented, but hemodynamically stable. A decision was made to undergo rapid sequence intubation, but direct laryngoscopy failed secondary to extensive bleeding despite aggressive suctioning. A size 2 classic LMA was placed, but had an audible leak with application of positive pressure. There was one failed attempt to blindly place an ETT through the cLMA. The cLMA was removed and replaced with a size 2.5 air-Q ILA. A cuffed 6.0 mm ID ETT was blindly inserted through the lumen of the air-Q ILA with confirmation via end-tidal capnography.

Discussion: Two children with airway bleeding who underwent failed intubation with direct laryngoscopy following rapid sequence induction were presented. In these instances, avoidance of a surgical airway was accomplished by using a supraglottic airway device. Several of these devices are used in daily practice, including the cLMA and proseal LMA. The combination of pediatric sizing, and the capability to easily pass a cuffed endotracheal tube blindly, makes the air-Q ILA very useful in this setting. The air-Q ILA served as a useful tool for rescue ventilation followed by expedient passage of an appropriately sized endotracheal tube. This device may overcome some of the limitations associated with traditional LMA assisted tracheal intubation (5).

Refs:
2. Practice guidelines for management of the difficult airway, Anesthesiology, 2003
4. Wong DT et al., Can J Anaesth, 2009

Jagannathan N et al., Paediatr Anaesth, 2009