Pediatric Laryngeal Mask Airway May Be Less Effective in Infants

Despite widespread use of the laryngeal mask airway (LMA), there are few data on its effectiveness during positive pressure ventilation in infants and young children. These authors assessed the relevance of size in performance of the LMA in pediatric patients undergoing elective surgical procedures.

A total of 158 patients, each weighing less than 30 kg and in ASA class 1 or 2, were studied. After each patient was induced and paralyzed, an experienced investigator inserted an appropriately sized LMA (size 1 for patients less than 5 kg, 1.5 for 5-10 kg, 2 for 10-20 kg, and 2.5 for 20-30 kg). There were 3 failures (2 percent) caused by gastric insufflation. Rates of successful insertion and leakage did not differ with size. Bronchoscopic grading of position (from 1, best, to 5) found median grades of 1 for LMA sizes 2 and 2.5 and 3 for sizes 1 and 1.5 ($P < 0.001$). With the smaller LMAs, the epiglottis was more frequently enclosed by the cuff ($P < 0.001$) and peak inspiratory pressures were higher ($P < 0.05$). Complications, primarily laryngospasm and an increasing end-tidal PCO$_2$, increased with decreasing LMA size ($P < 0.05$).

Comment: The LMA appears more likely to cause partial airway obstruction in infants ( < 10 kg) than in older children. This may reflect the disproportionately larger epiglottis in infants as compared with the adult anatomy the LMA was designed for. These findings are likely to be exaggerated in the emergency setting, where the choice of LMA is often restricted to full sizes, patients' weights are estimated, and patients are unfasted. When considering rescue airway devices in infants, the pediatric LMA may not be a good choice.

— RJ Vissers

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