The i-gel vs. the PRO-Breathe Laryngeal Mask Airway in Children

Calvin A. Brown, III, MD, FAAEM

In anesthetized spontaneously breathing children, leakage volume was greater, device dislodgement was more common, and first-attempt insertion success was lower with the i-gel.

The i-gel is an extraglottic device with a noninflatable cuff made of a flexible gelatinous material. The PRO-Breathe is a silicone-based standard laryngeal mask airway (LMA) device. The i-gel has been shown to be effective and easy to place in adults and children, but questions remain regarding the degree of leakage and the effectiveness of ventilation. Volume leakage can result in ineffective ventilation and soilage of a sterile operative environment. Inappropriate LMA inflation pressures and the use of neuromuscular blockade have limited prior comparisons.

These investigators randomized 200 pediatric patients (<16 years) undergoing elective surgery to an appropriately sized i-gel or PRO-Breathe LMA. Patients with congenital anomalies and distorted airways and those undergoing major abdominal surgery were excluded. All patients underwent induction of anesthesia but were spontaneously breathing and received 10 cm H\textsubscript{2}O of pressure support with 5 cm H\textsubscript{2}O of positive end-expiratory pressure. The PRO-Breathe was inflated to a cuff pressure of 40 cm H\textsubscript{2}O.

The rate of first-attempt insertion success was lower in the i-gel group than in the LMA group (82% vs. 93%), independent of device size. For i-gels sized 1.5, 2.5, and 3.0, leak volume was greater than with similarly sized LMAs. The i-gel was changed to a different extraglottic device 15% of the time due to excess leakage or device dislodgement, while no PRO-Breathe LMA was exchanged.

Comment: Excess leakage and instability after placement make the i-gel inferior to the PRO-Breathe for ventilating children.

Citation(s):

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