

Recommended inflation volumes result in lower cuff pressures in paediatric patients with Ambu AuraOnce when compared to LMA-Classic



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Background and Goal of Study

Two laryngeal masks, LMA-Classic (LMA, LMA Company) and the single-use Ambu AuraOnce (Aura, Ambu) are compared for ventilation in paediatric patients.

Besides ease of insertion, the cuff pressures resulting when the recommended inflation volumes are applied are assessed.

Materials and Methods

After approval of the local ethics committee and written consent of the guardians, 100 ASA I/II patients, 2 to 8 years, scheduled for elective ambulatory interventions were randomized to be ventilated with LMA or Aura.



Following standardized induction of general anaesthesia, the completely deflated airway devices were placed according to manufacturer's instructions. Cuffs were inflated with 10 ml for size 2, 14 ml for size 2.5 and 20 ml for size 3. Number of attempts (maximum 2), time until first tidal volume, initial cuff pressure and intraoperative tidal volumes (goal: petCO₂ of 35 mmHg) were recorded. Cuff pressures were adjusted to 60 cmH₂O for measurement of airway leak pressure.

Devices were inspected for traces of blood after removal. Patients were questioned for postoperative complaints.

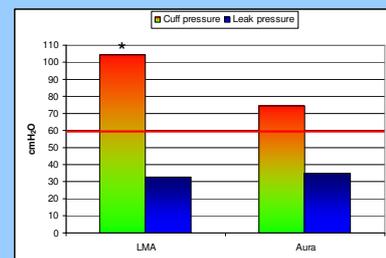
Results and Discussions

50 patients were ventilated with either device. Average age was 5.1 (2.2-8.0) for LMA and 5.1 (2.5-7.9) years for Aura. 44 patients in the LMA group and 48 patients in the Aura group were male. Weight, height, baseline heart rate, blood pressure and oxygen saturation were comparable for both groups. Size 2 was used in LMA/Aura in 7/4, size 2.5 in 41/45 and size 3 in 2/1 patients.

Insertion was successful in all patients (first attempt LMA 45, Aura 47). Time until first tidal volume for LMA and Aura was 8.7±2.3 and 8.0±2.3 seconds.

Initial cuff pressures were 104.2±19.0 cmH₂O for LMA and 74.4±24.3 cmH₂O for Aura (p<0.001). Tidal volumes were 8.7 and 9.1 ml kg⁻¹ for LMA and Aura, airway leak pressures were 32.7±9.4 and 34.1±8.4 cmH₂O.

Intraoperative dislocation occurred in 1 LMA patient. No traces of blood were found after removal of the devices. No postoperative complaints were stated.



Initial Cuff pressure (with recommended maximum inflation volumes) and Leak pressure with a cuff pressure of 60 cmH₂O

Conclusion(s)

In paediatric patients, LMA-Classic and Ambu AuraOnce are found to be comparable in all respects except cuff pressures resulting from recommended inflation volumes. Excess of maximum recommended cuff pressure is considerably higher with LMA-Classic.

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