



# Evaluation of Size 3.0 Microcuff Endotracheal Tube in Infants Undergoing Major Surgery under General Anesthesia

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*To the Editor:* Cuffed endotracheal tubes (ETT) can cause damage to the mucosa [1]. Pediatric Ultrathin Microcuff ETT may provide better sealing characteristics and is therefore considered safe. There are limited studies of Microcuff ETT use in young infants [2]. The present study was planned to determine the clinical applicability of Microcuff® endotracheal tube in 0–8 mo, full-term infants (weight 3 kg or more), as per the manufacturer’s recommendations (Microcuff PET, HALYARD\*) [3]. After exclusion of patients with cardiac defects, recent respiratory tract infections, and airway anomalies, the enrolled infants’ tracheas were intubated, and cuff pressure was maintained below 20 cm of H<sub>2</sub>O. The number of children requiring a change of ETT, the number of intubation attempts, and perioperative airway complications were noted. All 38 enrolled patients could be successfully intubated, with a first-pass success rate of 65.8%. Thirteen patients (34.2%) required a change of ETT because of inability to achieve optimum ventilatory conditions (mean age: 6.38 mo, weight: 7.6 kg, and height: 66.54 cm). Manufacturer’s recommendations for the selection of Microcuff ETT size are entirely based on age [4]. This study showed a statistically significant relationship of age, weight, and height for appropriate ETT size selection (Supplementary Fig. S1). The sensitivity and specificity of predicting the size of the ETT are 100% and 96%, respectively when weight is used in combination with age of the patient. Future trials can be conducted in a larger population using wider criteria to

select an appropriate-sized cuffed ETT that provides optimum ventilatory conditions with minimum complications. A 3.0 size Microcuff paediatric ETT can be safely used in neonate and young infants. However, for optimal ventilation and a high first-pass ETT success rate, weight of the child should also be considered in the infant population.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12098-022-04416-5>.

**Data Availability** On reasonable request.

## Declarations

**Conflict of Interest** None.

## References

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