

Accuracy of Tube Length Formulae for Thai Pediatrics

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Abstract: Accuracy of Tube Length Formulae for Thai Pediatrics

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Background: Optimal depth of endotracheal tube is important especially in pediatric patients because of the relatively short length of trachea which varies by ages. One of the well known formulae for calculating depth of endotracheal tube is “(Age in year /2) +12 centimeters” which is also recommended by PALS. Because the growth of Thai children is different from other ethnic, this study was conducted in order to determine whether this formula is appropriate to use in Thai children or not. **Methods:** The prospective observational study was conducted

in 67 children, aged 1-15 year, scheduled for surgery under general anesthesia with orotracheal tube. The depth of endotracheal tube was calculated according to the formula. After intubation, a flexible fiberoptic bronchoscope was inserted into endotracheal tube to measure the distances from vocal cord to tip of tube and from tip of tube to carina. Tip of endotracheal tube placed at mid-trachea $\pm$ 25% of tracheal length was considered as the appropriate position. **Results:** The percentage of patients who had the appropriate position of the tip of

endotracheal tube was 37.3% (n = 25). The placements of the tube were too deep for the rest of the patients (n = 42); >75% of tracheal length and 2 patients were intubated in bronchus.

Conclusions: This formulae does not provided

an accurate depth of intubation in Thai children and the depth of endotracheal tube according to this formulae tend to be deeper than the appropriate position.

Reference

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