



Original Contribution

Use of cuffed tracheal tubes in neonates, infants and children: A practice survey of members of the Society of Pediatric Anesthesia ☆, ☆ ☆



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Abstract

Study Objective: This study aimed to characterize the current practice patterns with cuffed tracheal tubes (CTT) in neonates, infants, and children among members of the Society of Pediatric Anesthesia (SPA).

Design and setting: An electronic mail survey was distributed using Survey Monkey to members of SPA between December 2013 and February 2014. Each member was permitted one response.

Patients/Intervention/Measurements: Not applicable as this is a practice survey study.

Main results: A total of 805 (28%) of the 2901 members of the SPA responded. Of the respondents, 88% were from the US, 83% were fellowship trained, 82% practiced pediatric anesthesia >50% of the time, and 65% practiced in academic centers. Eighty-five percent used CTT >50% of the time in children >2 years and 60% used CTT in full-term neonates >50% of the time. Twenty-nine percent reported always using CTT whereas 5% reported never using CTT. Those in practice <5 years, who were fellowship trained or in academic practice used CTT more often in neonates compared with those in practice >20 years, not

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² Attestation: Madhankumar Sathyamoorthy has seen the original study data, reviewed the analysis of the data, approved the final manuscript, and is the author responsible for archiving the study files.

³ Attestation: Jerrold Lerman has seen the original study data, reviewed the analysis of the data, reviewed all drafts of the manuscript and approved the final manuscript.

⁴ Role: This author analyzed the data.

⁵ Attestation: Victoria I. Okhomiya has seen the original study data, reviewed the analysis of the data, approved the final manuscript, and is the author responsible for archiving the study files.

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fellowship trained or in private practice ($P < .0001$, $P = .0003$ and $P = .0005$, respectively). The most common reason for avoiding CTT was concern about post-extubation stridor (39%). Almost 70% of respondents accept the TT if it passes the subglottis without resistance and has a leak at 15 to 20 cmH₂O. More than 60% of respondents do not monitor cuff pressures in CTT.

Conclusion: A majority of SPA members routinely use CTT in neonates, infants and children.

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1. Introduction

Uncuffed tracheal tubes (UTT) have been the standard of practice for securing the airway in infants and children <8 years of age because cuffed tracheal tubes (CTT) were thought to cause subglottic trauma, post-extubation stridor and subglottic stenosis. However, there is a paucity of evidence to support such a claim [1,2]. UTT confer several disadvantages compared with CTT including the need for larger fresh gas flows, increased rate of tube exchanges,

increased operating room anesthetic gas contamination, inadequate ventilation and difficulty monitoring end-tidal gases [3,4].

Khine et al reported that CTT can be safely used in full-term neonates and children during anesthesia, although most of the subjects in that study were >1 years (average age 3.3 ± 2.4 yr) and the numbers of neonates and infants with CTT were not reported [3]. The safe use of the new, thinner cuff pediatric TT that seal the trachea at reduced pressures (eg, Microcuff TT; Kimberley-Clarke, Roswell, GA), was confirmed in a multicenter study in Europe [4]. Even though

Table 1 Responses to demographic questions (N = 805)

	Question	Number of respondents (%)
Question 1	Where do you practice?	
	USA	707 (87.9)
	Europe	21 (2.6)
	Canada	32 (4.0)
	Other	44 (5.5)
Question 2	How long have you practiced pediatric anesthesia?	
	Less than 5 years	197 (24.5)
	5 to 10 years	163 (20.3)
	11–20 years	178 (22.2)
	More than 20 years	265 (33.0)
Question 3	Did you complete a fellowship in pediatric anesthesia?	
	Yes	658 (82.1)
	No	143 (17.9)
Question 4	Which best describes your primary practice setting:	
	Children's Hospital Affiliated To An University	493 (61.3)
	University Hospital	181 (22.5)
	Community Hospital Private Practice	123 (15.3)
	Ambulatory Surgicenter Private Practice	28 (3.5)
Question 5	Which best describes your type of practice?	
	Academic Practice	520 (65.0)
	Private Practice	280 (35.0)
Question 6	What percent of your practice is pediatric anesthesia?	
	All (>90%)	488 (60.6)
	Most (50–90%)	175 (21.7)
	Some (10–50%)	124 (15.4)
	Infrequent (<10%)	18 (2.2)
Question 7	In answering the remaining questions, do you consider yourself primarily a:	
	General pediatric anesthesiologist	502 (62.4)
	Pediatric cardiac anesthesiologist	152 (18.9)
	Pediatric neuro anesthesiologist	19 (2.4)
	General adult and pediatric anesthesiologist	191 (23.7)
	Pediatric Intensivist	22 (2.7)

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