

PATIENTS' CHARACTERISTICS INFLUENCING THE PERFORMANCE OF THE TRACHLIGHT

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INTRODUCTION

It is important for anesthesiologists to identify patients' characteristics that are likely to influence airway management. Trachlight™(TL), a lightwand guided intubating device, has been proven effective for intubation of normal or difficult airways.^{1,2} Yet, no predictor has been clearly identified to help anticipate how appropriate this device is with regard to patients' specific features. The purpose of this prospective unblinded study is to determine what characteristics, if any, influence the utilisation of the TL, particularly the time and number of attempts needed for tracheal intubation.

METHODS

After obtaining approval from the Institutional Review Board and written consent from each participant, patients scheduled to undergo elective surgery with general anesthesia were recruited. Before surgery, morphometric and demographic factors known to be associated with difficult direct laryngoscopy, or believed to influence the utilisation of the TL, were recorded. All patients were paralyzed before intubation with the TL under ambient light by a single experienced investigator. The number of attempts and time needed for intubation were recorded. The patient's jaw was lifted after a failed first attempt and room light was turned off if a third attempt was necessary. Correlation coefficients between time or number of attempts and patients' characteristics were calculated.

RESULTS

Two hundred patients were studied. Intubation was successful in 192 patients (96.0%); 93 on first (46.5%), 71 on second (35.5%) and 28 on third attempt (14.0%). Mean time to intubate was 50 seconds (+/-41.7). Time to intubate and number of attempts increased with weight, body mass index (BMI) and neck circumference (Table). Number of attempts also increased with cutaneous thickness measured at the cricoid cartilage level. Some factors known to be associated with difficult direct laryngoscopy such as Mallampati class, thyromental distance and mouth opening did not influence the performance of the TL.

DISCUSSION

The TL is an effective alternative for endotracheal intubation. Still, multiple attempts and increased time for intubation are associated with heavier patients, larger neck and higher BMI. These characteristics should be taken into consideration to optimize the choice of an airway management device.

REFERENCES

1. Anesthesiology 1995;83:509-14.
2. Can J Anaesth 1995;42:826-30.

Correlation between	Characteristics	Correlation coefficient	95% confidence interval	P value significant
Time to intubate and:	Weight ¹	0.3583	0.2310 to 0.4735	*
	BMI ¹	0.3663	0.2397 to 0.4807	*
	Neck circumference ¹	0.3988	0.2753 to 0.5094	*
	Mallampati class ²	0.1979	0.0567 to 0.3314	ns
	Mouth opening ¹	-0.0003	-0.1391 to 0.1385	ns
	Thyromental distance ¹	0.0192	-0.1199 to 0.1575	ns
Number of attempts to intubate and:	Weight ¹	0.3889	0.2643 to 0.5006	*
	BMI ¹	0.4423	0.3234 to 0.5475	*
	Neck circumference ¹	0.4155	0.2937 to 0.5241	*
	Cutaneous thickness ¹	0.2499	0.1141 to 0.3766	*
	Mallampati class ²	0.1863	0.0447 to 0.3206	ns
	Mouth opening ¹	0.0153	-0.1237 to 0.1538	ns
	Thyromental distance ¹	0.0245	-0.1147 to 0.1627	ns

1.Pearson correlation coefficient

2.Spearman correlation coefficient

* p < 0.05 with Bonferroni correction