

Table 3
Associations with reading the document prior to signing.

	N	1. Read all	2. Read parts	3. Did not read	4. Did not read but verbally explained	p-Value
Age (years, median [IQR])	278	44 [34–55]	53 [34–60]	55 [40–68]	49 [32–64]	0.13
Male	117	9 (7.7%)	12 (10.3%)	50 (42.7%)	46 (39%)	0.25
Female	161	11 (6.8%)	19 (11.8%)	51 (31.7%)	80 (50%)	
African American	95	9 (9.5%)	14 (14.7%)	22 (23.2%)	50 (53%)	0.01
White	170	11 (6.5%)	15 (8.8%)	74 (43.5%)	70 (41%)	
Walk-in	201	18 (9.0%)	24 (11.9%)	73 (36.3%)	86 (43%)	0.22
Ambulance	74	2 (2.7%)	7 (9.5%)	26 (35.1%)	39 (53%)	
Triage level						
2	74	4 (5.4%)	8 (10.8%)	29 (39.2%)	33 (45%)	0.16
3	175	16 (9.1%)	18 (10.3%)	66 (37.7%)	75 (43%)	
4	27	0 (0%)	5 (18.5%)	5 (18.5%)	17 (63%)	

higher percentage of walk-in respondents (56%) recalled consenting to treatment compared to ambulance arrivals (41.1%; $p = 0.02$). Respondents with higher triage levels more frequently recalled consenting to treatment ($p = 0.02$).

When asked for comments about the consent for treatment process, the majority had no problems with the process or no specific comments (237 (81%).

Informed consent is an important ethical and legal component of medical care. In this study, we demonstrated that the majority of ED patients in this study recalled signing a consent document, but most were not aware of elements of the consent document they had signed. Despite this lack of awareness, the majority of participants indicated they were satisfied with the current process. These data speak favorably of patient trust in ED providers.

Health literacy is an important component of communication with patients. Poor health literacy is common among ED patients [4]. The Institute of Medicine (IOM) reports that over 90 million people, nearly half the adult population lack proper health literacy skills to understand their health [5]. Improving understanding of one's health is crucial to maintaining patient's autonomy and decision-making capacity. Some studies have reported a variety of approaches to improving patient health literacy [6–8].

In conclusion, the majority of ED patients in this study recalled signing a consent document. Most were not aware of elements of the Consent for Treatment document they had signed. Walk in patients were more likely to recall the document than patients who arrived by ambulance. Patients high lower triage acuity recalled consenting to treatment compared to higher acuity.

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12 January 2019

<https://doi.org/10.1016/j.ajem.2019.01.019>

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Comparison of Quick Trach™ and Melker™ for emergent invasive airway management in Simulated Obese Model



To the Editor,

Emergent cricothyrotomy is the final step in managing difficult airways [1,2]. The Quick Trach II™ (QT; VBM Medizintechnik GmbH, Sulz am Neckar, Germany) was developed for direct placement in the trachea using the catheter-over-needle technique. In contrast, the Melker Set™ (Melker; Cook Group Incorporated, Bloomington, IN) uses a guide-wire for placing the cannula with the Seldinger method. It remains controversial which of direct placement or the Seldinger method is optimal for invasive airway management.

While invasive airway management is known to be difficult in obese patients, no comparison of efficacy of QT and Melker devices have been performed in this patient population. Against this backdrop, the present study aimed to compare the performance of QT and Melker devices in terms of efficacy of cricothyrotomy on an obese manikin.

Ethical approval was deemed unnecessary by the institutional review board of Osaka Medical College, and written consent was obtained from each participant. Participants were 15 doctors specialized in critical care such as emergency medicine or anesthesiology who were recruited from a difficult airway training course at Osaka Medical College. Participants had 7.5 ± 4.9 years of clinical training, and had used the QT 4.8 ± 3.9 times and the Melker 6.6 ± 3.2 times for cricothyrotomy in clinical or simulated situations.

The SimMan® 3G (Laerdal, Sentrum, Stavanger, Norway) manikin was used in this study. The obese model was constructed by attaching 1 cm of simulated subdermal tissue (CVC training pad, Kyotokagaku, Japan) to the cricothyroid membrane (Fig. 1a, b). In the Melker trial, participants used the Melker set, which consisted of a needle, a syringe, a guide-wire, a scalpel, a dilator, a 5-mm cannula with an inflatable cuff, and a syringe for blocking the cuff. In the QT trial, participants used the QT set, which consisted of a syringe, a conical-shaped needle, a plastic 4-mm cannula with an inflatable cuff, and a stopper [3]. Participants were given 30 min to practice these techniques, with the instructor available for advice. A trial started when the participant picked up the QT or Melker and ended

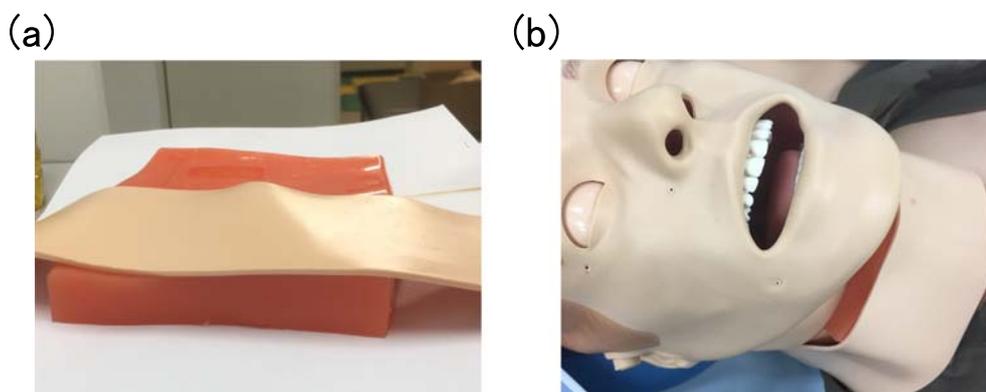


Fig. 1. Legend. (a) simulated subdermal tissue, and (b) obese invasive airway model.

at the point of manual ventilation after cricothyrotomy. The number of cricothyrotomy attempts was recorded for both tracheal and failed airway management. Failed cricothyrotomy was defined as placement of the device outside the trachea [3]. The study was designed as a randomized crossover trial to minimize the learning effect. Each participant performed four trials and the order was randomized using a random number table.

Results were compared using the Mann-Whitney *U* test for intubation time, and Fisher's exact test for the number of attempts. Data are presented as mean \pm SD. $P < 0.05$ was considered statistically significant.

For the normal (non-obese) model, all participants succeeded on the first attempt with both devices and airway management time did not differ significantly between devices (QT 16.3 ± 4.3 s, Melker 19.3 ± 4.0 s; $P = 0.06$). In the obese model trials, the number of attempts was significantly higher with QT compared to Melker (QT 1.7 ± 1.0 times, Melker 1.1 ± 0.3 times; $P = 0.012$). Moreover, airway management time was significantly longer in QT trials compared to Melker trials (QT 30.7 ± 9.5 s, Melker 21.6 ± 3.3 s; $P = 0.004$).

In previous studies using pig larynxes, cricothyrotomy time was shorter with QT compared to Melker, with QT having fewer complications [2]. In contrast, airway management time was significantly longer in QT trials compared to Melker trials in the present study using the obese model. This might be explained by direct puncture with the cannula-over-needle method due to the thick subdermal tissue, whereas guide-wire and catheter insertion can be performed without issues even in the obese model.

This study has several limitations worth noting. First, the simulations do not account for factors such as bleeding during attempts at invasive airway management. Second, there may be additional challenges associated with using QT or Melker in patients with difficulty extending the neck. In the future trial, it may be significant to compare these devices in ultrasound-guided manner. The accumulation of clinical experience and controlled randomized clinical trials will be needed to confirm our results.

Author contributions

M.H., N.K., and H.K. performed this study and prepared the manuscript. T.M. approved the final version for submission.

Conflict of interest

None to report.

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10 January 2019

<https://doi.org/10.1016/j.ajem.2019.01.020>

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What pediatric intubation technique is most optimal for direct laryngoscopy? Pilot data



To the Editor,

Endotracheal intubation has for many years been recognized as the gold standard for airway management [1]. However, as with any procedure, it requires appropriate training [2]. The average learning curve for direct laryngoscopy as shown by studies of Buis et al. is about 50 endotracheal intubations [3]. Studies by Aghamohammadi et al. have shown that the learning curve for videolaryngoscopy is much shorter than for direct laryngoscopy [4]. However, due to the high cost of a videolaryngoscope, standard laryngoscopes with Miller or Macintosh blades are the main type of devices used for endotracheal intubation in the operating theatre, intensive care department and prehospital conditions. An additional