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LETTER TO THE EDITOR

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ALTERNATIVE TO ENDOTRACHEAL INTUBATION FOR PARAMEDICS IN ORDER TO PROVIDE DIRECT LARYNGOSCOPY. A RANDOMIZED MANIKIN TRIAL

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Dear Editor,

Endotracheal intubation has proved to be the best method for airway management for trauma victims [1–3]. Medical rescue teams provide advanced airway management using various methods [4], including supraglotic airway devices [5, 6], direct laryngoscopy, as well as optical-video laryngoscopy. It should be mentioned that endotracheal intubation remains the gold standard in number of emergency trauma victims in whom a higher risk of vomiting and airway obstruction due to a trauma of the central nervous system and altered mental status is observed. Endotracheal intubation, when compared to a laryngeal mask or a laryngeal tube device, significantly reduces risk of aspiration of stomach contents to the respiratory system [7]. A patient with suspected cervical spine injury should also have cervical spine stabilization provided all the time. As many various studies have shown, a cervical collar reduces the effectiveness of first intubation attempt [8, 9]. In view of the above, it is reasonable to seek alternatives to direct laryngoscopy methods of endotracheal intubation. The aim of this study was to compare a standard Macintosh laryngoscope and an alternative based on laryngeal mask with an endpoint of endotracheal intubation (Fig. 1).

This was a prospective, randomized study and involved a group of 60 paramedics who work in the emergency medical services. The paramedics provided advanced airway management during periodic trauma training. Intubations were performed on an advanced life support manikin (Laerdal, Stavanger, Norway). The first of these was a standard manual laryngoscope equipped with a Macintosh blade No 3 (ETT) while the second was the TotalTrack VLM system. The participants perfromed these procedures either on patients with a standard cervical collar or manual spine stabilization. The study was designed as a prospective randomized manikin trial. We measured the whole procedure time, namely the time to the first efficient breath, and the success rate of the first attempt.

During intubation in a manual inline stabilization scenario, we found a statistically significant difference between the Macintosh laryngoscope and TotalTrack ($p < 0.05$) in procedure time (18.7 s vs. 22.9 s, respectively), first efficient breath (19.0 s vs. 12.1 s), and the success rate of the first attempt (81% vs. 98%). Moreover, during a scenario with cervical collar neck stabilization there were also statistically significant differences between the Macintosh laryngoscope and TotalTrack in all analyzed variables: whole procedure time (24.7 s vs. TT 23.7 s), time to first efficient breath (25.2 s vs. 13.3 s), as well as the success rate of the first intubation attempt (49% vs. 97%). In both methods of spine stabilization, all differences were also found to be statistically significant.

In conclusion, the TotalTrack VLM system may be a good method of endotracheal intubation, especially in countries where prehospital intubation is not available for paramedics. Although the whole

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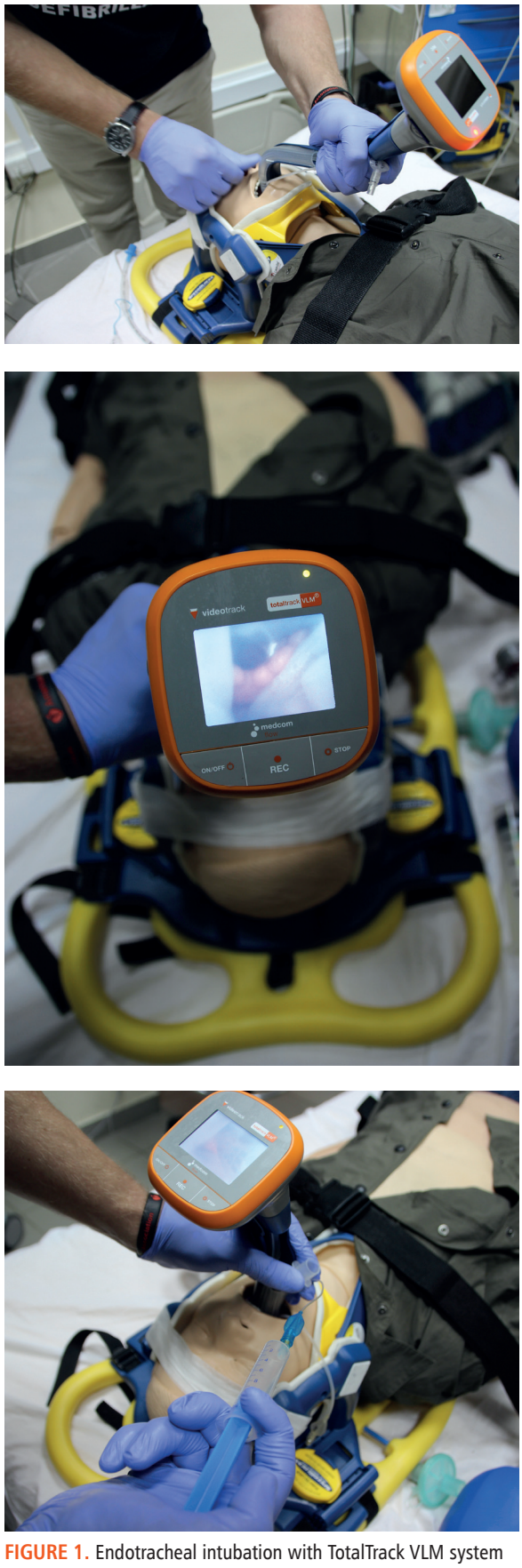

FIGURE 1. Endotracheal intubation with TotalTrack VLM system

procedure takes longer than standard intubation, the time needed to achieve effective ventilation and the success rate of intubation seemed to be better.

Conflict of interest: None declared.

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