

COMPARING EFFICACY OF KING VISION AND GLIDESCOPE IN CADAVERS

Tim Mullen¹, Jeanette Scott¹, George Kovacs², Orlando Hung¹

1. Dept. of Anesthesia, 2. Dept. of Emergency Medicine, Dalhousie University, Halifax, Canada



Capital Health



Introduction

Difficulty placing an endotracheal tube is an important cause of morbidity and mortality in the operating room, emergency department, intensive care setting and in out-of-hospital resuscitation.¹ Video laryngoscopes are often useful as either a primary tool for intubation or as a rescue tool if immediately available during a difficult intubation.² However, prohibitively high costs and poor portability have prevented their being immediately available in many intubation situations and locations. The King Vision video laryngoscope is a new device that is relatively inexpensive and extremely portable, however there are limited data available as to its clinical efficacy.

Objective

This study compares the efficacy of the Glidescope (GS) and the new King Vision (KVL) video laryngoscopes when used by staff anesthesiologists to intubate clinical grade cadavers, with and without cervical spine immobilization.



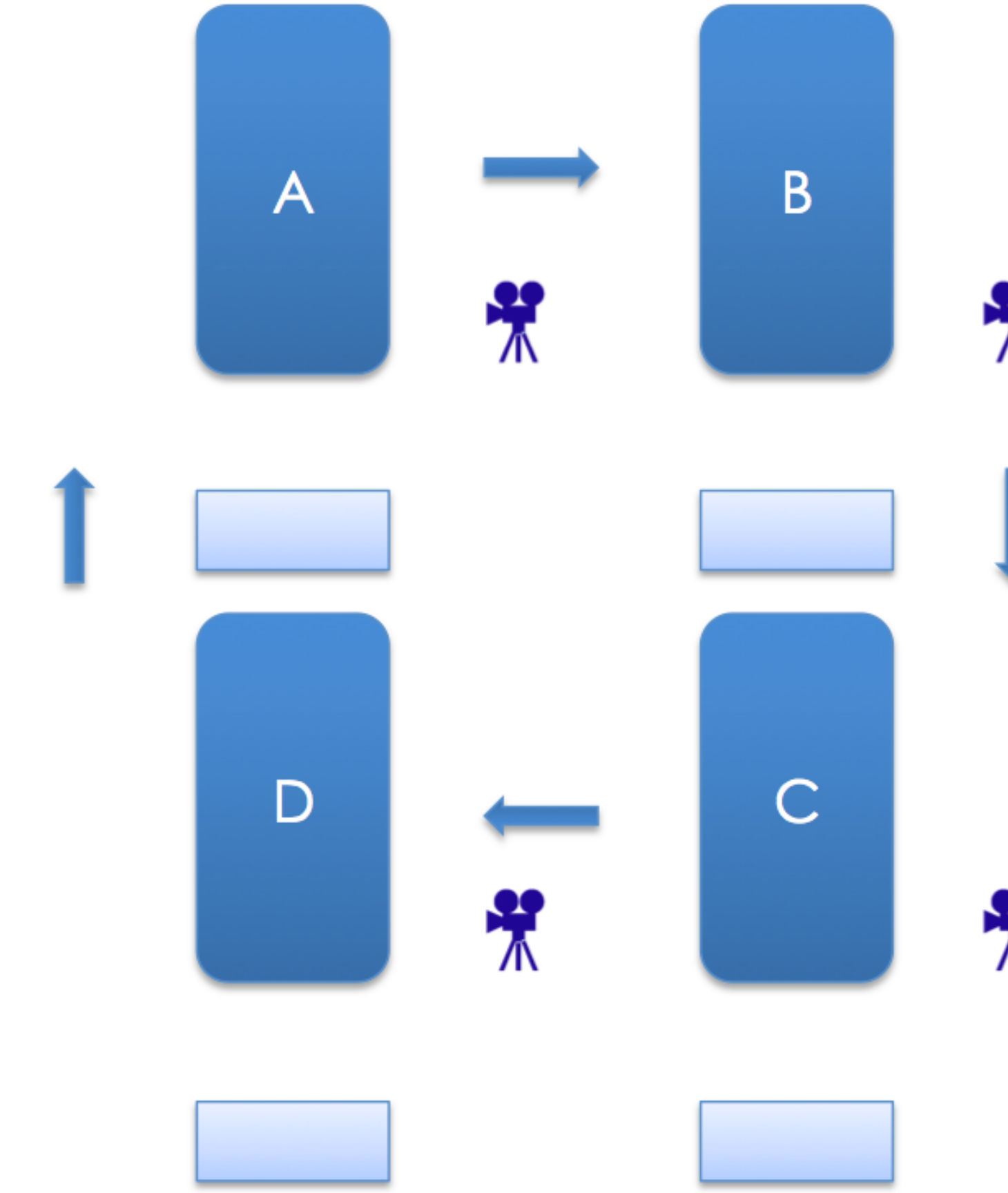
Methods

Following Research Ethics Board approval, four clinical grade cadavers were prepared. Two cadavers were placed in appropriately sized cervical collars and two had no collar. All participants viewed a training video and practiced using the KVL with a manikin prior to beginning the study, then proceeded to intubate each cadaver with each laryngoscope in a randomized fashion, resulting in a total of eight intubations per participant.

Outcome Measures

Following each intubation, participants documented the subjective ease of intubation (EOI) using a 100mm visual analog scale, which was the main outcome measure (0=extremely easy, 100=impossible). The following outcome measures were also recorded: the Time To Intubation (TTI), number of intubation attempts, view of the glottis with Percent Of Glottic Opening (POGO) scores, and participant comments. The hypothesis was that there would be no difference between the efficacies of the two devices using these outcome measures.

- Clockwise rotation around stations
- Second rotation began with second laryngoscope used
- Eight intubations total per participant
- Each intubation was recorded on camera



Results

Twenty-one participants were recruited and each performed eight intubations, providing 84 sets of paired data. Data analysis showed no difference between the performance of GS and KVL for EOI or TTI, although the KVL did have a slightly higher POGO score than the GS in the non-collared cadavers. Results are summarized in the following table:

Pairs	Paired Differences				P (2-tailed)
	Mean	Std. Deviation	95% Conf. Int. of the Difference		
All Cadavers			Lower	Upper	
EOI (G) - EOI (K) (mm)	2.8	23.3	-2.3	7.9	0.275
TTI (G) - TTI (K) (seconds)	-0.2	39.0	-8.7	8.3	0.963
POGO (G) - POGO (K)	-4.4%	19.6%	-8.6%	-0.2%	0.042
With Collars					
EOI (G) - EOI (K) (mm)	0.7	25.0	-7.0	8.5	0.849
TTI (G) - TTI (K) (seconds)	-0.3	54.2	-17.2	16.5	0.968
POGO (G) - POGO (K)	-0.4%	21.5%	-7.1%	6.3%	0.915
No Collars					
EOI (G) - EOI (K) (mm)	4.9	21.6	-1.9	11.6	0.154
TTI (G) - TTI (K) (seconds)	-0.6	12.2	-3.9	3.7	0.975
POGO (G) - POGO (K)	-8.4%	16.6%	-13.6%	-3.3%	0.002



Limitations

The lightly embalmed clinical grade cadavers used in this study are very well suited to airway research, however the results cannot be directly generalized to a clinical population. The cadavers also do not fully demonstrate the variety of airway anatomy encountered in the clinical setting.

Conclusion

This study found that the KVL and GS were similar in efficacy when used by anesthesiologists in clinical grade cadavers, with both the normal airway and with cervical spine immobilization. Although statistically significant, the slightly better POGO view provided by the KVL is of questionable clinical significance. While clinical studies are still warranted, it is encouraging to see that an affordable, portable video laryngoscope has the potential to play an important role in airway management.

References

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Disclosure

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