42457 - LEARNING CURVE FOR INTUBATIONS WITH THE GLIDESCOPE

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INTRODUCTION: The primary purpose of this prospective observational study was to determine the optimal number of prior Glidescope intubation attempts required to optimize success rates with the Glidescope. The secondary purpose of this study was to determine whether increased experience with direct laryngoscopy enhances success rates with the Glidescope.

METHODS: Institutional ethics approval was obtained for this study. A data sheet was completed by the primary user with the help of the study technicians after each use. Demographic data such as age, sex, height, weight and ASA were recorded. Patients with difficult airways were excluded. Prior experience with both Glidescope and non-Glidescope laryngoscopies was documented. Information relating to the view with the Glidescope and whether intubation was successful was collected.

RESULTS: Between February and December 2006 the Glidescope was used on 393 patients as a part of routine intubation. The subjects performing the intubation were mainly attending anesthesiologists (n=123, 31.3%), anesthesiology fellows (n=84, 21.4%) and residents (n=92, 23.4%). Respiratory therapists (n=62, 15.7%), medical and respiratory therapy students (n=23), and others (n=9), mainly fellows from other specialties, accounted for the remaining intubations. Overall, there was a 19.8% failure rate for tracheal intubation at the first attempt (table1).

Failure rates (primary)

Glidescope intubations	0-9 (n=196)	10-19 (n=104)	20-29 (n=41)	≥30 (n=52)	Total (n=393)
Medical/Resp Student/Others	13/32 40.6%				13/32 40.6%
RT's	4/26 15.3%	1/13 7.6%	1/11 9.1%	0/12 0.0%	6/62 9.7%
Residents	17/47 36.2%	6/39 15.4%	0/6 0.0%		23/92 25.0%
Fellows	4/29 13.7%	1/24 4.1%	1/14 7.1%	0/17 0.0%	6/84 7.1%
Staff	16/62 25.8%	8/28 28.5%	3/10 30.0%	3/23 13.0%	30/123 24.4%
Total	54/196 27.6%	16/104 15.4%	5/41 12.2%	3/52 5.8%	78/393 19.8%

Table 1

However there was a strong correlation towards improved success rates with increasing previous Glidescope experience ($r=0.60$, $p<0.001$). In the group with at least 30 previous Glidescope intubations, there was a 94.2% success rate. This success rate approached the reported success rate of 96% in a previous study done by “experts”. (1) Glidescope failure rates, with regards to previous experience with direct non-Glidescope laryngoscopies, were the following: (0-19 laryngoscopies, $12/36=33.3\%$), (20-39, $16/37=43.2\%$), (40-59, $6/41=14.6\%$), 60-79, $4/19=21.1\%$) and (≥ 80 , $40/252=15.8\%$).

DISCUSSION: In this series of Glidescope laryngoscopies, there was an overall higher rate of failure for tracheal intubation using the Glidescope when compared with previously published Glidescope studies. The reason for this high rate of failure may be related to lack of experience with the equipment and/or poor technique. The current study may present a more realistic rate of success during clinical practice by users with variable experience. However, after 30 intubation attempts with the Glidescope, success rates were high at 94.2%. This rate was comparable to the reported rate by “experts”. From the results of our ongoing study, we recommend that in order to gain expertise with the Glidescope, at least 30 previous Glidescope intubation attempts are required. With respect to previous experience with direct laryngoscopies, there was poor correlation between laryngoscopic experience and success with Glidescope.

REFERENCES: 1) Cooper RM. CJA 2005 Feb; 52(2):191-8.