

The learning curve for using Ambu® aScope™

Review of the study "Evaluation of the Ambu aScope for nasal intubation on manikin". University Hospital Madrid Montepincipe, Spain. Galindo Menéndez S, López García A. Publication submitted to the Spanish Magazine of Anaesthesiology.

The aim of this study was to evaluate some technical characteristics of aScope and the easiness of its use in a manikin with normal airway (AirSim Multi, TruCorp Ltd).

A group of 10 novice anaesthesiologists (less than 10 intubations) performed naso-tracheal intubations in 3 instances. Before the first intubation, the anaesthesiologists were instructed on the use of aScope.

Qualitative evaluation of: image quality, manoeuvrability of the device, ease of ET-tube insertion, evaluation of the insertion cord (easiness to slide the ET-tube), and light quality was performed in each of the 3 instances. These parameters were evaluated using an analogue visual scale with: 0= very deficient – 10=excellent.

Moreover, the time used to insert the aScope = T1 (starting when the tip of aScope was at the nose entrance to the moment when it passed the epiglottis), and time used to insert the ET-tube = T2 (measured from the tip of aScope passing the epiglottis to ET-Tube passing the epiglottis) were measured. Total time (T) was defined as T1 + T2.

The results showed that regarding the qualitative measures there was no significant difference in the evaluations between session 1, 2, and 3. Only, the easiness to intubate was evaluated as to be significantly better in session 3 and compared to sessions 1 and 2.

	Image quality	Manoeuvrability	ET-tube insertion	Insertion cord	Light
Evaluation 1	6,10	8,10	7,10	7,6	8,10
Evaluation 2	6,90	8,10	7,20	8,0	8,10
Evaluation 3	7,10	8,10	8,30	8,40	8,20
p-value	0,084	0,150	0,0032*	0,268	0,368

Table 1. Average of the qualitative evaluation of the different parameters across all anaesthesiologists (n=10) in the 3 sessions. 0= very deficient, 10= excellent.

*Statistical difference between session 1, 2, and 3 (Friedmann Test).



Regarding the time analysis, the data shows significant reduction in the time required to perform the intubation from the first evaluation to the last one. In general the time decreases approximately 50% from the first to the third trial.

	T1 ± SD (sec)	T2 ± SD (sec)	T ± SD (sec)
Evaluation 1 (E1)	20,10 (6,59)	33,90 (11,05)	54,00 (16,80)
Evaluation 2 (E2)	12,90 (5,32)	22,10 (6,40)	35,00 (11,11)
Evaluation 3 (E3)	9,00 (2,71)	16,60 (3,10)	25,60 (5,02)
P (E1 vs. E2)	0,06*	0,028*	0,013*
P (E1 vs. E3)	0,001*	0,004*	0,002*
P (E2 vs. E3)	0,27 *	0,066	0,04 *

Table 2. The table presents the average and standard deviation (SD) of the time measures (T1, T2, T) for the 3 evaluations across all anaesthesiologists (n=10).

*Significant difference (Lineal Model). Multiple comparison adjustment: Bonferroni Test.

While the data cannot be directly extrapolated to patients with difficult airways, the authors concluded that the qualitative evaluation of the technical characteristics of aScope were acceptable and consistent during the 3 sessions. The users considered that the aScope image quality and light were acceptable.

While all users were non-trained, the intubation-simulations were successfully and easily performed and in no cases the procedure exceeded the 90 seconds. The low intubation times and significant reduction of intubation time between the consecutive sessions indicate a fast learning curve in the use of the device.

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