Can J Anesth/J Can Anesth (2014) 61:1055–1056
DOI 10.1007/s12630-014-0223-9

CORRESPONDENCE

Blind nasal intubation: teaching a dying art

Jinbin Zhang, MBBS · Austin Lamb, MD · Orlando Hung, MD · Christopher Hung, BSc · David Hung, BSc

Received: 11 June 2014 / Accepted: 8 August 2014 / Published online: 15 August 2014

To the Editor,

This report describes the use of a simple and cost-effective model for teaching blind nasal intubation.

In May 2013, as part of the Global Outreach Program funded by the Canadian Anesthesiologists' Society International Education Foundation, the authors conducted an airway workshop for the local anesthesia staff, residents, and technicians at the University Central Hospital of Kigali in Rwanda. The goal was primarily to equip the Rwandan anesthesia providers with basic airway management skills and, secondarily, to train Rwandan staff anesthetists to become teachers and instructors for future airway workshops. In addition, given the paucity of advanced airway technology within the country, one of the key objectives was to impart the skill of blind nasal intubation, which could be lifesaving in a difficult airway situation. The participants received instructions prior to performing blind nasal intubation. Using an intubating mannequin (Laerdal® Airway Management Trainer, Laerdal Medical Canada, Ltd., Toronto, ON, Canada) and a Beck Airway Airflow Monitor (BAAM) whistle (Life Medical Supplier, USA), we were able to simulate airflow through the BAAM whistle by bimanual compression of the artificial lungs, creating a continuous whistle to guide the participants during blind nasal intubation (Figure). The whistle intensity increases as the tracheal tube approaches the glottic inlet. Successful tracheal intubation is confirmed when the tracheal tube is advanced through the nostril and the BAAM device whistles in conjunction with every breathing effort generated by the instructor. There were 37 participants at the workshop. On the first attempt, all participants were able to perform a successful blind nasal intubation on the mannequin using the BAAM whistle; however, we did not record the time taken for each intubation attempt.

Before the development of flexible bronchoscopes and muscle relaxants, blind nasal intubation was the technique of choice in patients with known or predicted difficult airways, but its popularity has declined over the years. Despite the myriad of airway devices available, blind nasal intubation remains a useful adjunct in the difficult airway management armamentarium.[1] Its utility in clinical settings with limited resources cannot be overlooked, and the skill of the practitioner in performing this technique is the key determinant of a successful blind nasal intubation. Blind nasal intubation can be performed without a whistle by listening to the breath sounds; however, because of the proximity of the mouth and the proximal end of the tracheal tube, sometimes it is not easy to differentiate between breath sounds coming from the mouth or from the tracheal tube during blind nasal intubation. Whistle devices can facilitate blind nasal intubation.[2,3] Using the mannequin and the BAAM whistle at the airway workshop, the authors were not only able to teach the participants the basic skills of blind nasal intubation, but they were also able to demonstrate the various maneuvers (e.g., flexion of the neck,[4] inflating the tracheal tube cuff to elevate the tip of the tube,[5] rotating the tracheal tube to ensure midline placement/alignment) that can improve its

This manuscript has been accepted for presentation in abstract at the Euroanaesthesia Congress, 2014.

This article is accompanied by an editorial. Please see Can J Anesth 2014; 61: this issue.

J. Zhang, MBBS (✉) · A. Lamb, MD · O. Hung, MD · C. Hung, BSc · D. Hung, BSc
Department of Anesthesia, Victoria General Hospital, Dalhousie University, Halifax, NS, Canada
e-mail: Jinbin_zhang@ttsh.com.sg

Figure A Rwandan workshop participant performing blind nasal intubation using Model 2 (with both lungs of the mannequin intact). Bimanual compression of the lungs simulates airflow through the trachea in a normal breathing cycle

success. The participants were required to perform the above manipulations for a successful intubation on one of the four mannequins set up at the workshop, providing a good learning opportunity. There was a wide spectrum of experience level amongst the workshop participants, ranging from anesthesia staff to anesthesia technicians. It was encouraging that all participants succeeded on the first attempt. This suggests that blind nasal intubation can be easily taught to anesthesia providers with varying levels of expertise, and with good chances of success.

There are limitations to using a mannequin model: experience with mannequins may not be well extrapolated to clinical practice due to differences in anatomy, tissue compliance, and the presence of other confounding factors, such as blood, secretions, and lack of patient cooperation. In addition, the absence of the gag reflex in mannequins increases the ease of intubation. In spite of its limitations, this teaching model is a good option to teach blind nasal intubation. It is also easy to set up, inexpensive, and cost effective, requiring only an intubating mannequin, tracheal tubes, and a whistle device, such as the BAAM. This allows practitioners to learn and refresh their skills regularly, which may translate into better and safer attempts on patients when blind nasal intubation is clinically indicated. The end result is the potential to equip practitioners with an important set of lifesaving skills, which can be invaluable, particularly in austere environments.

Conflicts of interest None declared.

References

1. *Law JA*, *Broemling N*, *Cooper RM*, *et al*. The difficult airway with recommendations for management - Part 2 - The anticipated difficult airway. Can J Anesth 2013; 60: 1119-38.
2. *Dyson A*, *Saunders PR*, *Giesecke AH*. Awake blind nasal intubation: use of a simple whistle. Anaesthesia 1990; 45: 71-2.
3. *Cook RT Jr*, *Stene JK Jr*. The BAAM and endotrol endotracheal tube for blind oral intubation. Beck Airway Air Flow Monitor. J Clin Anesth 1993; 5: 431-2.
4. *Patil VU*. Nasotracheal intubation. In: Patil V, editor. Fundamentals of Airway Management Techniques (A Color Atlas, Volume 1). Skaneateles, NY: Lotus Publishing; 2003.
5. *Gorback MS*. Inflation of the endotracheal tube cuff as an aid to blind nasal endotracheal intubation. Anesth Analg 1987; 66: 916-7.