Can J Anesth/J Can Anesth (2016) 63:901–902
DOI 10.1007/s12630-016-0624-z

CORRESPONDENCE

The C-MAC® D-BLADE™: use of the guide rail as a guiding channel for a gum elastic bougie

Jolin Wong, MBBS · Theodore G. L. Wong, MD

Received: 13 February 2016 / Revised: 17 February 2016 / Accepted: 24 February 2016 / Published online: 3 March 2016

To the Editor,

The C-MAC® video laryngoscope (Karl Storz, Tuttlingen, Germany) is favoured for its ease of use.[1] However, use of its D-BLADE™ may confer the disadvantage of difficult endotracheal tube (ETT) placement despite providing excellent views of the glottis. We herein describe the use of the guide rail on the C-MAC® D-BLADE™ as a channel for inserting a gum elastic bougie in a manner similar to that used for channelled video laryngoscopes.

Our patient presented for elective hysterectomy. On examination, her Mallampati-2 airway had no features that predicted difficulty. Anesthesia was induced with intravenous fentanyl, propofol, and atracurium. She was easily ventilated via an oropharyngeal airway. Initial laryngoscopy with a Macintosh-3 blade (Scope Medical, Ambala City, India) revealed an unanticipated grade 4 view. Intubation was attempted unsuccessfully several times by two experienced anesthesiologists using a McGrath video laryngoscope (Medtronic, Minneapolis, MN, USA), a C-MAC® video laryngoscope, and a gum elastic bougie. Although the vocal cords were visualized, the bougie could not be passed into the trachea because of the anterior angulation required. Finally, the bougie was loaded into the guide rail on the left side of the D-BLADE™ (Figure A). After obtaining a satisfactory view of the glottis, the bougie was advanced along the guiding channel of the anteriorly angulated blade (Figure B). Once in the trachea, the bougie was maneuvered out of the guide rail and scooped under, and to the right of, the D-BLADE™. We then "railroaded" a size 7.5 cuffed ETT into the trachea under direct visualization with the C-MAC®.

The C-MAC® has many advantages as a video laryngoscope, including easy blade insertion and minimal preparation time.[1] It can improve laryngoscopic views, especially in patients who present difficulty in obtaining laryngeal views with a Macintosh laryngoscope.[2] The elliptical D-BLADE™ was introduced to improve laryngeal views of difficult airways (i.e., Cormack and Lehane grades 3 and 4).[3] With its increased curvature and 40° blade angulation, the C-MAC® D-BLADE™ is considered an indirect laryngoscope, allowing the operator to "look around the corner" without the need to align the oral, pharyngeal, and tracheal axes.[3] Superior views, however, may not translate into easier intubation, as the resulting anterior angulation of the laryngoscope blade may lead to difficulty directing the ETT past the vocal cords and into the trachea.[3] Hence, these laryngoscopes are best used with stylets, which allow optimal angulation of the distal end of the ETT. A gum elastic bougie may be preferable given the potential risk of airway trauma related to the use of styletted tubes.

A channelled tube guidance system may improve laryngeal views and decrease the time to intubation. Many tube-channel laryngoscopes, however, require the tip of the blade to be positioned posterior to the epiglottis. If unsuccessful, the railroading of the ETT may be obstructed by the epiglottis. This problem is eliminated with the C-MAC® because its tip placement within the vallecula confers familiarity and ease of use. The C-MAC® blade has a half-open guide rail on the left (blind) side that allows placement of a catheter for suctioning or oxygen

J. Wong, MBBS (✉) · T. G. L. Wong, MD
Singapore General Hospital, Singapore, Singapore
e-mail: wongjolin@gmail.com

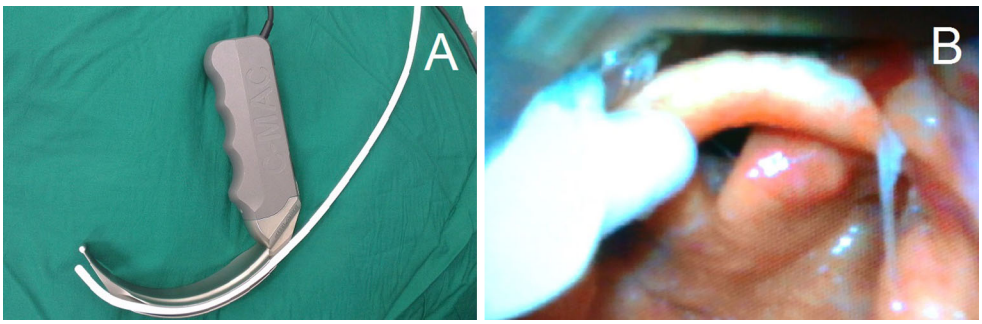

Figure (A) A gum elastic bougie loaded into the guide rail of the C-MAC® D-BLADE™. (B) View of the glottis on the C-MAC® D-BLADE™ with the pre-loaded bougie being advanced from its position in the left-sided guiding channel

insufflation. We used this same guide rail as a guiding channel for a bougie. This choice allowed intubation under direct video laryngoscopic vision with minimal airway trauma because the tip of the bougie remained within view and had no contact with oropharyngeal tissues.

Although the guide rail has been used as the first choice for intubating airways that were anticipated to be difficult,[4,5] our case demonstrates the success of this technique as a rescue strategy in intubating an airway that had not been anticipated to be difficult, but in which both direct laryngoscopy and video laryngoscopy had failed. It combines the ease of use of the C-MAC® D-BLADE™ video laryngoscope with the ease of intubation of a channelled video laryngoscope, while at the same time minimizing the potential for airway trauma.

Conflicts of interest Dr. T. Wong has in the past received travel funding from StorZ and Covidien for lectures and workshops.

References

1. *Cavus E*, *Kieckhaefer J*, *Doerges V*, *Moeller T*, *Thee C*, *Wagner K*. The C-MAC videolaryngoscope: first experiences with a new device for videolaryngoscopy-guided intubation. Anesth Analg 2010; 110: 473-7.
2. *Piepho T*, *Fortmueller K*, *Heid FM*, *Schmidtmann I*, *Werner C*, *Noppens RR*. Performance of the C-MAC video-laryngoscope in patients after a limited glottis view using Macintosh laryngoscopy. Anaesthesia 2011; 66: 1101-5.
3. *Niforopoulou P*, *Pantazopoulos I*, *Demestiha T*, *Koudouna E*, *Xanthos T*. Video-laryngoscopes in the adult airway management: a topical review of the literature. Acta Anaesthesiol Scand 2010; 54: 1050-61.
4. *Van Zundert AA*, *Gatt SP*. A novel method of intubation and orogastric tube insertion using C-MAC-D-blade videolaryngo scope-bougie technique. Acta Anaesthesiol Belg 2015; 66: 87-90.
5. *Greenland KB*, *Bradley P*. D-blade C-MAC videolaryngoscopy™ with the Frova Intubating Introducer™. Anaesth Intensive Care 2015; 43: 268-9.