



Nasotracheal intubation by combined use of a Bullard™ laryngoscope and a cuff inflation technique in a patient with a severely restricted mouth opening

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Received: 29 August 2012 / Accepted: 9 October 2012 / Published online: 18 October 2012
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To the Editor,

The Bullard™ laryngoscope (Circon ACMI, Stamford, CT, USA) is an anatomically shaped rigid fibreoptic laryngoscope that has been used for more than two decades.¹ One of its unique characteristics is a very thin blade that requires only a 6-mm mouth opening for insertion. We report a case in which nasotracheal intubation was performed by combined use of a Bullard laryngoscope and a cuff inflation technique in a patient with a severely restricted mouth opening. The patient provided written informed consent for publication of this case.

A 66-yr-old male patient, 157 cm tall and weighing 45.5 kg, was scheduled for keratoplasty. The size of his mouth opening was only about 9.5 mm because of previous radiation therapy for maxillary sinus cancer; thus, nasotracheal intubation was planned for airway management. The Bullard laryngoscope was selected for this procedure instead of a fibrescope because with the fibrescope, the tracheal tube is advanced in a blind manner and this may cause airway trauma; arytenoid cartilage dislocation or vocal cord trauma. General anesthesia was induced with fentanyl 150 µg and propofol 30 mg. Bag and mask ventilation was performed successfully, and then rocuronium 40 mg and remifentanyl 0.3 µg·kg⁻¹·min⁻¹ were administered. Even after neuromuscular blockade, no additional mouth opening was obtained. A 7.5-mm internal diameter tracheal tube was inserted nasally, and the Bullard laryngoscope was inserted orally to lift the epiglottis

directly. A laryngeal view was easily obtained through the eyepiece of the Bullard laryngoscope, and then the tracheal tube was advanced carefully into the field of view. Before the laryngeal inlet was reached, the tracheal tube cuff was inflated to lift the tube tip and direct it towards the vocal cords. The cuff was then deflated to pass through the vocal cords. The tracheal tube was successfully inserted into the trachea, and general anesthesia was maintained throughout the operation without any complications. Also, no complications were encountered during postanesthesia rounds.

In the past several years, anatomically shaped indirect laryngoscopes with a tracheal tube guide channel, such as the Pentax Airway Scope™ (HOYA, Tokyo, Japan) and the Airtraq™ (Prodol Meditec SA, Vizcaya, Spain), have become very popular and have been reported to be useful in airway management. Although several studies have shown that the Airway Scope and Airtraq are more useful than the Bullard laryngoscope for orotracheal intubation^{2,3} and even for nasotracheal intubation,^{4,5} these laryngoscopes have a bulky blade configuration because the tube channel is thicker than the tube diameter (Figure). Even the version of the Airtraq designed for nasotracheal intubation, which is devoid of a tube guide channel, requires an 18-mm mouth opening for insertion; therefore, in our case, the thinner blade of the Bullard laryngoscope was adequate to obtain a laryngeal view. The alternative approaches we could have considered in our case include a fibreoptic bronchoscopic intubation or a lightwand-guided technique through the nostril. However, both techniques involve tracheal tube advancement in a blind manner, which may cause trauma, particularly to the arytenoid cartilage or vocal cords. A Bullard laryngoscope-assisted nasotracheal intubation can be a useful approach in patients with a severely restricted mouth opening because it provides a good laryngeal view and continuous observation of tube insertion throughout the procedure.

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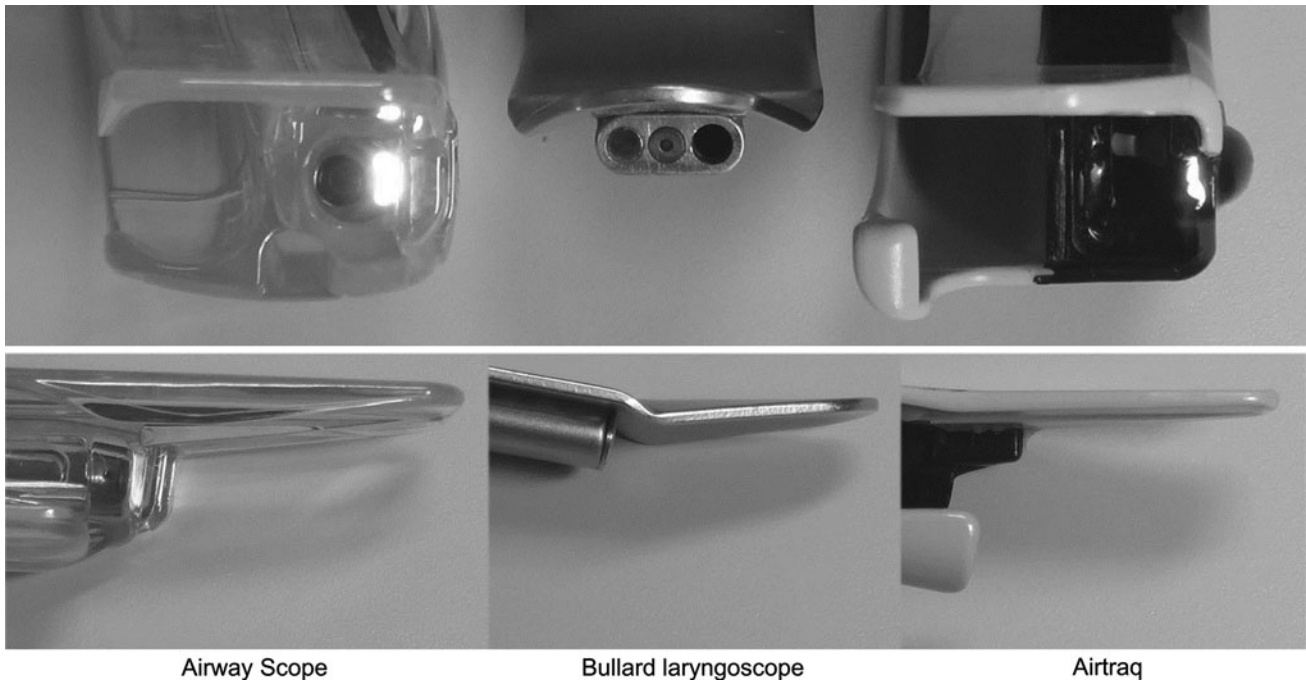


Figure The blade tips of the Airway Scope (left), the Bullard laryngoscope (centre), and the Airtraq (right) with end view (top) and side view (bottom). The thickness of each blade (18, 6, and 18 mm, respectively) can be best appreciated with the end view

Competing interests None declared.

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