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The Airtraq® laryngoscope for placement of double-lumen endobronchial tube

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To the Editor:

Placement of a double-lumen endobronchial tube (DLT) is sometimes difficult due to the size and configuration of the tube compared with standard endotracheal tubes. For patients with difficult airways, DLT placement can be extremely challenging. The Airtraq® (Prodol, Meditec S.A., Vizcaya, Spain) laryngoscope is a new intubation device that provides a non-line-of-sight view of the glottis. This anatomically shaped rigid laryngoscope has been reported to have several advantages, compared with the conventional Macintosh laryngoscope, in the management of normal and difficult airways.¹⁻⁵ However, one limitation is that the regular-size Airtraq® laryngoscope accepts a standard endotracheal tube with an internal diameter between 7.0–8.5 mm only. We report here the successful placement of DLTs with the aid of the Airtraq® laryngoscope in surgical patients.

After obtaining Institutional Ethics Board approval and patient consent, we performed endobronchial intubation with a DLT in ten patients who were scheduled for general anesthesia requiring one-lung ventilation for surgical convenience. The patients included nine males and one female, aged 64 ± 18 (mean $\pm$ SD, range, 21–84) yr, with body weight of 64 ± 11 (49–85) kg, height 167 ± 7 (155–177) cm and body mass index 23 ± 5 (18–35) $\text{kg} \cdot \text{m}^{-2}$. After induction of general anesthesia and neuromuscular blockade, each patient received scout laryngoscopy using the Macintosh #3 blade to provide the Cormack-Lehane (C-L) view score, and then a 35-French DLT with an outer diameter of 11.7 mm (Sheridan SHER-I-BRONCH® Endobronchial Tube - Left-Sided, Teleflex Medical, Stirrup Creek, NC, USA) or a 37-French DLT with an outer diameter of 12.3 mm, was intubated using the Airtraq® laryngoscope (Figure★). The lungs were ventilated via

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bagmask between the scout and intubation laryngoscopies to avoid hypoxemia. The time to complete intubation with the Airtraq® laryngoscope was measured using a stopwatch. Scout laryngoscopy using the Macintosh laryngoscope revealed a C-L grade 1 view in eight patients and grade 2 in one patient. In the remaining one patient with a body mass index of $35 \text{ kg} \cdot \text{m}^{-2}$, the scout laryngoscopy revealed a C-L grade 3 view. In the nine patients with a C-L grade 1 or 2 view, the Airtraq® laryngoscope easily provided a full view of the vocal cords and a 37-French DLT was placed into the trachea at first attempt. In the last patient with a C-L grade 3 view, the Airtraq® laryngoscope provided the view of the corniculate tubercle only when the tip of the scope was in the vallecula. Placing the tip of the scope under the epiglottis and lifting up the Airtraq® laryngoscope provided a C-L grade 2 view, and thus a 35-French DLT was successfully introduced into the tracheal inlet. The time to intubation was $49 \pm 22 \text{ sec}$ (range 25–96 sec). The bronchial lumen of the DLT was found to be correctly positioned in the left main bronchus in seven of the ten patients. In the remaining three patients, flexible fiberoptic bronchoscopy revealed that the bronchial lumen was positioned in the right main bronchus in two patients and at the carina in one patient. In these three patients, the bronchial lumen of the DLT was introduced into the left main bronchus with the aid of flexible fiberoptic bronchoscopy.



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FIGURE The Airtraq® laryngoscope equipped with a 37-French left double-lumen endobronchial tube in the conduit of the scope.

The Airtraq® laryngoscope allowed placement of 35- and 37-French DLTs in ten patients without complications. Based on our experience, the Airtraq® laryngoscope accepts 35- and 37-French DLTs, although the latter was somewhat thick against the channel of the scope. It is probably impossible to insert a 39-French DLT (outer diameter = 13 mm). Despite this limitation, the Airtraq® laryngoscope appears to be an alternative approach

for DLT placement when the physician encounters cases in which the conventional Macintosh laryngoscopy results in unsuccessful DLT placement.

Footnotes

Support was provided solely from institutional and/or departmental sources. The author has no affiliation with any manufacturer of any devices described in the manuscript.

Accepted for publication August 22, 2007.

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