

Short Communication

Difficult Intubation and Double Lumen Tubes, Time to Embrace Videolaryngoscopy

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Double Lumen Tube (DLT) insertion in the difficult airway is a challenge to anesthesiologists. A survey of practice in 2011 suggests the vast majority (98%) favour the routine use of a double lumen tube over bronchial blockers for lung isolation with a sizeable proportion (64%) seldom using bronchial blockers [1].

Recent guidance published by the Difficult Airway Society (DAS) [2] focuses the mind on safe intubation strategies, but as yet no unifying guidance exists for those practising thoracic anaesthesia.

Many agree that a Cormack and Lehane grade 3 or 4 view at direct laryngoscopy constitutes a difficult intubation, however even a partially obscured or anteriorly positioned glottis may make intubation via direct laryngoscopy with a DLT difficult. In his excellent editorial [3] Brodsky suggests when faced with unanticipated difficult intubation using either a single-lumen Tracheal Tube (TT) with a subsequent exchange for a DLT over an Airway Exchange Catheter (AEC), or a bronchial blocker. There is also reference to a number of videolaryngoscopes playing an emerging role.

In much the same way that DAS now place video-laryngoscopy at the forefront of difficult airway management, we would advocate its use with DLTs. In our practice when faced with predicted difficult intubation (but not facemask ventilation) needing lung isolation we advocate the use of general anaesthesia and videolaryngoscopy. The C-MAC D-blade® (Karl Storz, Tuttlingen, Germany) can be used to site a TT, then using an AEC such as the Cook Double Lumen Extra Firm Soft Tipped® intubating catheter (Cook Critical Care) [4] the TT can be exchanged for a DLT. Leaving the C-MAC D-blade in situ has the advantage of lifting soft tissues and facilitates exchange, conferring an advantage over some other video laryngoscopes. This technique complements anaesthesia preferences as outlined above.

We have also observed that in cases involving anterior positioning of the glottis that using a Nasogastric (NG) tube passed through the bronchial lumen protruding by approximately 2 cm can create a

conduit for the DLT. An assistant then pushes the NG tube through the glottis into the trachea under direct vision, which then acts as a guide for DLT insertion. The largest diameter NG tube for a given DLT should be used to minimize the gap between the two, thus preventing hold up at the arytenoids. For example, a 16F NG tube will fit down a 41F DLT easily and snugly down a 39F with plenty of sterile aqueous gel. As far as we are aware this technique has not been reported in the literature and we would advocate its use.

It is worth mentioning that whilst economical, the use of disposable intubating catheters (bougies) with a DLT is not recommended. We are aware in our centre of several cases where pieces of plastic material and even tips of the bougies were peeled off during their withdrawal through DLTs.

When considering different brands of DLTs for tube exchange the Fuji-Phycon (Broncho-Cath®, Covidien, Mansfield, MA) DLT has been found to have a significantly quicker median time to intubation compared to either the Mallinckrodt (Broncho-Cath®, Covidien, Mansfield, MA) or Rusch (Bronchopart®, Teleflex, Research Triangle Park, NC) tubes [5]. It has also been shown to be associated with fewer failed intubations in the difficult airway. Interestingly these failed intubations were predominantly due to bronchial lumen hold up on the right arytenoid cartilage, the authors attributing the success of the Fuji-Phycon product to its soft silicon leading edge. Despite the fact this study was in a simulator environment it suggests there may be inter-manufacturer variability in the difficult airway.

We have also had positive experiences with Fuji-Phycon (Broncho-Cath®) DLTs. In addition to tube exchange they are indispensable when one is unable to isolate the lung due to the DLT being occluded by the bronchial wall.

References

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