

Shaving of a Frova Intubating Catheter

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Summary: We report a complication that occurred when using a frova intubating introducer to assist placement of a Mallinckrodt double lumen tube (DLT) in a patient undergoing oesophagectomy. The non compatibility of this commonly used airway device with the DLT resulted in plastic shavings from the introducer contaminating the patients bronchial tree. All fragments of plastic were retrieved and the patient suffered no harm as a result.

I. Introduction

Placement of a DLT may be more difficult than that of a single lumen tube for a variety of reasons; including the greater degree of mouth opening required, avoiding laceration of tracheal cuff on prominent teeth and gaining an anterior glottic opening with the endobronchial lumen. In such a scenario, when confronted with a difficult intubation, the anaesthetist must fall back on techniques and equipment that are familiar to them. Equally, they should expect an intubating introducer, that is specifically designed for that purpose, to be durable and without restrictions on compatibility.

II. Case Report

A 64 year old man was undergoing an Ivor Lewis oesophagectomy. During laryngoscopy for placement of a single lumen tube for the abdominal stage of the operation, he was noted to have a Cormack and Lehane grade 3 glottic view, thus a frova intubating introducer was successfully used to aid intubation. Based on this knowledge, placement of a DLT (Mallinckrodt Endobronchial Tube, Left, 37Fr) for the second stage of the procedure was again achieved using the frova intubating introducer as the first and preferred choice. This was done uneventfully and without requiring undue force.

As is routine, the DLT position was confirmed using the flexible fibrescope. However, to our surprise it was immediately obvious the airway contained foreign material. It became clear that these slivers of blue plastic material, sitting precariously in the bronchus of the left upper lobe, had been shaved off the frova introducer. Further inspection also revealed that a fragment was also present in the HME filter and thus there was the potential for distribution down both bronchial and tracheal lumens. Clearly if retained, this material could act as a source of distal obstruction, or a focus of inflammation and infection. Fortunately we were able to retrieve all material using the fibrescope and biopsy forceps. The patient subsequently made an uneventful recovery.

On further inspection of the introducer, it was apparent that the plastic fragments had been scrapped off the point of inflection at distal end of the bougie. This occurred as it was withdrawn through the endobronchial lumen of the double lumen tube. In the construction of the DLT, it appears that at the point where the proximal segment of tubing that contains the bifurcation for each 15mm connection is fused with main body, the former part under-rides the later and this creates a prominent surface on which the frova introducer has been damaged.

III. Discussion

We note similar previous experiences by Vlachtsis et al and Huitink et al [1,2]. It was in response to these incidents that the manufacturer has added a warning to the product information – ‘Do not use the Frova Intubating Introducer with double lumen endotracheal or endobronchial tubes’, but even when not using a DLT they note ‘contact with sharp edges on the internal surface of the endotracheal tube may cause small fragments to be shaved off the catheter introducer during introduction/removal’.

With these risks in mind, opting for the Cook Airway Exchange Catheter – the only other airway aid available in our institution – might seem like a sensible choice. However, although compatible with DLTs, both this and the Aintree Intubation Catheter come with a similar specific warning of the potential for ‘small fragments to be shaved off during removal of the catheter’.

The technique of using a bougie as an aid to intubation is a common manoeuvre and falls well within the norms of accepted anaesthetic practice. Moreover, the fact that double lumen tubes are used less frequently means that the perceived safety of falling back on these established techniques and using familiar equipment takes on greater importance. Rather than issuing a warning in the product information and placing restrictions on compatibilities, would it not be best to address the cause which would be to manufacture these products from a durable and robust material. In doing so we would have intubation aids that are ‘fit for purpose’ and thus would allow them to be used, unconditionally, for what they are intended.

Acknowledgements

None

Competing Interests

None

References

- [1]. Vlachtsis H, Veltman M. Shearing of a Frova Intubating Introducer by a Bronchocath double lumen tube. *Anaesthesia* 2006; **61**: 197-98.
- [2]. Huitink JM, Bisschops M. A complication with an intubating introducer and a double-lumen tube: tip of the iceberg? *Anaesthesia* 2012; **67**: 926-27.