A Broken Arrow: a rare complication of Endotracheal tube introducer

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Abstract

Complications from endotracheal tube introducer are rare and mostly involved mechanical trauma to airway structures. We report a rare complication while using endotracheal tube introducer during difficult airway management, which, we believed it was fragile after repeated sterilization.

Letter to the editor

The endotracheal tube introducer (ETI) is an inexpensive adjunct for managing difficult airway that is effective and easy to use. Nowadays, ETI is widely used by emergency physicians and anesthesiologists during endotracheal tube intubation. Complications from ETI are rare and mostly involved mechanical trauma to airway structures. By our own experience, we report a rare complication from ETI during difficult airway management.

A 34-year-old male was brought to our emergency department in the early morning due to cardiac arrest. The patient was obese and vocal cord couldn’t be visualized under direct laryngoscopy. Several attempts of endotracheal tube intubation were unsuccessful. ETI was utilized and proper intubation was achieved after several trials. We confirmed the endotracheal tube placement by monitoring the number and waveform of end tidal CO2. After securing the airway, return of spontaneous circulation was achieved. However, the high airway pressure alarm kept going off from the ventilator. Bilateral breathing sound diminished and blood gas analysis showed CO2 retention. Suction tube met an obstacle while advancing through endotracheal tube at around 30cm. Fiberoptic bronchoscope was applied and noticed a blue, rounded and tube-like obstacle was stuck around the tip of endotracheal tube. We then replaced a new endotracheal tube. The
obstacle was actually a broken tip of ETI stuck at the Murphy eye of the endotracheal tube (figure 1 A, B). Looking back, the first ETI was obviously shorter than a normal ETI (figure 1 C). After endotracheal tube replacement, patient’s airway pressure and bilateral breath sound became normal.

**Figure 1:**
A and B, demonstration of the broken ETI tip stuck in the Murphy eye of endotracheal tube; C, the broken ETI (left side) is shorter than a normal ETI (right side).

The ETI, or commonly named as ‘bougie’, is now widely used as a convenient and inexpensive adjunct while managing airways. The ETI could be used with traditional laryngoscope, as an adjunct for video laryngoscopes and also blind digital intubation [1-3]. Complications from the ETI are rare and mostly involve mechanical trauma to airway structures [4]. Advancing the ETI might damage the larynx, trachea, or branches of the airway [5]. Most ETIs are single use, however, we believe that many medical departments
reuse it after proper sterilization. Our experience demonstrated a rare complication that happened while using an ETI, which might become fragile after repeated sterilization. We strongly recommend a routine check for its completeness after using ETI. In the future, while physicians encounter high airway pressure and suspect an obstacle or foreign body in the airway after using ETI for intubation, a broken ETI should be considered and excluded.

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Conflict of interest statement

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