

Oral to Nasal Endotracheal Tube Exchange in Patients Difficult to Undergo Laryngoscopy

Dear Editor,

Nasotracheal intubation is indicated in patients receiving oromaxillary surgery. When an already oral intubated patient with unstable cervical spine fracture will undergo oromaxillary surgery, the oral intubation should be switched to nasal intubation. Under such situation, laryngoscopy is not suitable for reintubation because of the unstable cervical spine. Here, we introduce a safe maneuver for the endotracheal tube (ETT) exchange using a double-swivel connector and an 11 Fr exchange catheter (Cook® Airway Exchange Catheter [CAEC]) as a guide to ensure the airway security [Figure 1]. Under standard monitoring and appropriate analgesia and sedation, the patient maintains spontaneous breathing, 2 ml 2% lidocaine is injected into the oral ETT for tracheal topical anesthesia, and then, the CAEC is inserted into the oral ETT via the double-swivel connector which can maintain oxygenation during tubes exchange. The CAEC's tip is positioned at 5 cm beyond the distal end of the oral ETT. A fiberscope with a loaded lubricated ETT (6.5 mm ID) is inserted via left naris into the oropharynx. When the oral ETT is visualized from the fiberscope, the oral ETT is pulled out of glottis, but the CAEC is remained in place. Then, the fiberscope will be easily introduced into trachea guided by the *in situ* CAEC. The nasal ETT is then railroaded into trachea with the fiberscope. The diameter of CAEC is small (4 mm). It is allowed for the simultaneous placement of the CAEC and the ETT in the trachea. After confirming the correct position of the nasal ETT by the fiberscope and end-tidal CO₂, the oral ETT and CAEC can be removed.

Handling difficult airway is a crucial task for an anesthesiologist. Converting oral to nasal intubation in a patient with unstable cervical spine poses a big challenge. Several methods have been reported to perform the tube exchange from oral to nasal.¹⁻³ The technique of using CAEC and double-swivel connector we describe here have several advantages, such as (1) CAEC can ensure the airway security in

case of fiberscope-aided intubation failure, (2) CAEC can guide the fiberscope to find the glottis, and (3) during the process of tubes exchange, not only the double-swivel connector but also the CAEC can easily maintain patient's oxygenation. The CAEC can act as a tool for oxygen insufflation or jet ventilation.

Data availability statement

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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Conflicts of interest

There are no conflicts of interest.

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REFERENCES

1. Nakata Y, Niimi Y. Oral-to-nasal endotracheal tube exchange in patients with bleeding esophageal varices. *Anesthesiology* 1995;83:1380-1.
2. Salibian H, Jain S, Gabriel D, Azocar RJ. Conversion of an oral to nasal orotracheal intubation using an endotracheal tube exchanger. *Anesth Analg* 2002;95:1822.
3. Sharma R, Kumar A, Panda A. Using a central venous pressure guidewire and suction catheter to facilitate oral to nasal tracheal tube change in a child with a difficult airway. *Anesth Analg* 2009;108:1716-7.

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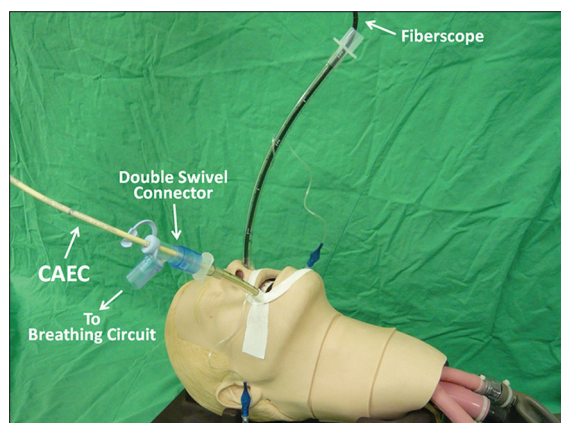


Figure 1: View of the oral to nasal tube exchange, as with a Cook® Airway Exchange Catheter in the oral endotracheal tube through a double-swivel connector, and a fiberscope in the nasal endotracheal tube