



Tracheal extubation with a laryngeal mask airway and exchange catheter in a patient with a difficult airway

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To the Editor,

Exchanging an endotracheal tube (ETT) for a supraglottic airway (SGA) has been described for smooth tracheal extubation and to help the patient avoid coughing at the time of emergence from anesthesia.^{1–4} This technique is also one of the three advanced extubation methods recommended by the Difficult Airway Society in their recent extubation guidelines.⁵ Nevertheless, there is a possibility of losing the airway during the exchange procedure. We describe a novel technique to establish a bridging SGA by utilizing an airway exchange catheter in a patient with a difficult airway.

Patient consent for publication was obtained. A 38-yr-old woman weighing 60 kg was scheduled for a total thyroidectomy. Her airway assessment revealed limited neck extension, receding chin, and a Mallampati grade 3 view. Direct laryngoscopy showed a grade 3 view with external laryngeal pressure, and the patient's trachea was intubated with a 7.5-mm internal diameter ETT over an Eschmann® tracheal tube introducer (gum elastic bougie). At the end of the surgery, the surgeon requested a smooth extubation with minimal cough. We planned on a bridging laryngeal mask airway (LMA™) extubation technique. End-tidal sevoflurane was increased from 1 to 1.5 MAC, and 2% lidocaine 3 mL was sprayed endotracheally. The patient was maintained with positive pressure ventilation. An airway exchange catheter (19F, Cook Inc., Bloomington, IN, USA) was then inserted inside the ETT up to the 30-cm mark at the incisors and the ETT was

removed. The exchange catheter was inserted into the airway tube lumen of a size-3 LMA-ProSeal™ (Canada Teleflex Medical, Markham, ON, Canada), and the LMA was placed into the pharynx without the metal introducer. An elbow connector with a bronchoscopy port was connected to the LMA-ProSeal with the proximal end of the exchange catheter protruding through the port (Figure). The proximal tip of the exchange catheter was occluded with tape to avoid backward air leak. The exchange catheter was removed after ensuring adequate positioning of the LMA-ProSeal by normal capnography waveform and confirming no cuff leak. The patient was then allowed to emerge from anesthesia, at which time, she could obey commands, spontaneous breathing was observed, and the LMA-ProSeal was removed without the patient coughing. If either positive pressure or spontaneous ventilation via the LMA-ProSeal had been inadequate, the ETT could have been reintroduced over the exchange catheter, followed by a conventional extubation technique.

Two techniques of exchanging an ETT for a SGA at emergence have been described previously: 1) ETT removal followed by blind SGA insertion, or 2) the Bailey¹ maneuver with insertion of a SGA behind an ETT followed by ETT removal. We consider our exchange technique to offer two potential advantages. First, because the SGA was inserted into the pharynx, over an exchange catheter, the LMA was probably positioned more precisely than with a blind insertion. Second, with the exchange catheter remaining *in situ* after ETT removal, reinsertion of an ETT could be readily accomplished should ventilation through the SGA fail. To perform this exchange technique, any SGA and exchange catheter or intubation introducer can be used. During this exchange process, it is essential to maintain adequate levels of anesthesia to avoid stimulation of the airway.

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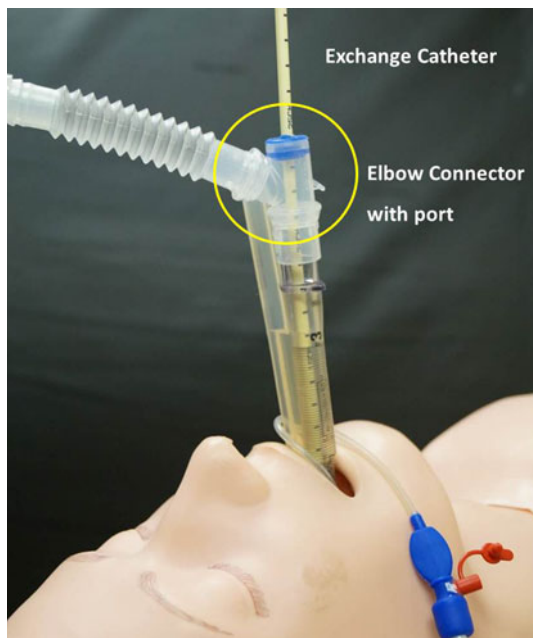


Figure An LMA-ProSeal fitted with a bronchoscopy elbow connector and exchange catheter

In a patient with difficult tracheal intubation, we performed bridged tracheal extubation by inserting an exchange catheter and LMA-ProSeal and removing the

LMA without the patient coughing. Insertion of a LMA for bridged extubation can serve as an alternative technique to the Bailey maneuver.

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Conflicts of interest None declared.

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