



The use of a supraglottic airway device as an extubation bridge for the difficult airway

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To the Editor,

Raveendran *et al.*¹ should be applauded for suggesting a new extubation technique for the difficult airway. The authors, however, used a size-3 laryngeal mask airway (LMA)-ProSealTM (Canada Teleflex Medical, Markham, ON, Canada) as a bridge to tracheal extubation along with an airway exchange catheter (19F, Cook Inc., Bloomington, IN, USA). The function of a bridging device is to provide reversibility to extubation so that re-intubation can be achieved emergently if the extubation trial fails.² Supraglottic airway devices (SGADs) serve this purpose well by providing a conduit for re-intubation while maintaining adequate oxygenation until it is safe to remove the bridging device. Then again, not all SGADs perform similarly with respect to re-intubation. A size-3 LMA-ProSeal was not originally designed to function as a conduit for tracheal intubation. Its airway tube cannot accommodate an endotracheal tube (ETT) larger than 4.0 mm internal diameter (ID), which would not be appropriate for the 38-yr-old 60-kg patient mentioned in the report. In addition, the physical presence of the drain tube within the bowl of the LMA-ProSeal may render maneuvering the exchange catheter or a small ETT towards the glottis a challenging task, thus delaying re-establishment of the airway. Other SGADs with airway tube calibers large enough to accommodate size 7.5 mm ID ETTs are widely available. These devices were originally designed to function better as conduits for intubation or re-intubation. The LMA Classic ExcelTM, LMA-FastrachTM (both produced by the same company that produces the

LMA-ProSeal), and the air-QTM intubating laryngeal airway (Cookgas LLC, St Louis, MO, USA) are a few examples of such devices³ that can be better choices as bridging devices. Similarly, although there are no current recommendations or guidelines regarding which SGAD should be used as a bridge in difficult extubation situations, a CombitubeTM (Covidien-Nellcor, Boulder, CO, USA) or a laryngeal tube, King LTTM (King systems, Noblesville, IN, USA), are probably poor choices because of the difficulty to achieve re-intubation if deemed necessary after extubation. The best bridging device should fulfill the purpose of allowing controlled extubation, providing oxygenation until it is safe to be removed, and above all, allowing fast re-intubation if deemed necessary after extubation.

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Conflicts of interest None declared.

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Reply

Thank you for giving us the opportunity to respond to Dr. El-Orbany's correspondence regarding our letter. Dr. El-Orbany correctly stated that a size-3 LMA-ProSeal™ may not be the optimal supraglottic airway device (SGAD) to choose as a conduit for re-intubation. Other SGADs, such as the LMA-Fastrach™ or the air-Q™, have an airway lumen with a larger diameter and may be better choices for permitting direct passage of an adult-sized (e.g., 7.5-mm internal diameter) endotracheal tube (ETT).

Our case¹ primarily illustrated the use of an airway exchange catheter to transition from an ETT to a SGAD at the end of a case in a patient with a difficult tracheal intubation. Traditionally, the transition is performed by either the removal of the ETT followed by SGAD insertion or the use of a Bailey maneuver whereby a SGAD is inserted behind the ETT followed by ETT removal. Our technique offers the advantage of reversibility. Since the *exchange catheter is in situ within the SGAD*, if ventilation or oxygenation is ineffective, the SGAD can be removed and an ETT can then be railroaded over the exchange catheter to regain control of the airway. We are not using the SGAD as a conduit for direct re-intubation.

There is a second scenario where re-intubation may be required. *The exchange catheter is removed* after adequate ventilation is established with the SGAD, and the patient is allowed to emerge with minimal coughing. If oxygenation or ventilation fails and re-intubation is required, then there are several options. First, the SGAD can be removed and tracheal intubation attempted. Second, if the SGAD allows passage of an adult-sized ETT (e.g., the air-Q), the ETT can be placed over a bronchoscope and both can be inserted into the trachea to re-establish control of the airway. Third, if the SGAD is too small to allow passage of an adult-sized

ETT (e.g., LMA-ProSeal), an introducer must be used for re-intubation.^{2,3} For example, an Aintree Intubation Catheter (Cook Medical Inc, Bloomington, IN, USA) may be placed over a pediatric bronchoscope and both inserted through the SGAD into the trachea. The SGAD and bronchoscope are then removed so that the ETT can be railroaded over the Aintree Intubation Catheter into the trachea.²

In summary, any SGAD can be used for the purpose of transitioning from an ETT to a SGAD to allow smooth emergence. However, if re-intubation is required at emergence, a SGAD with a larger airway diameter offers the advantage of facilitating direct re-intubation without requiring an intermediary introducer.

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