



# Use of an Airway Exchange Catheter for Removal of an I-Gel Airway

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Dear Editor,

Supraglottic airway devices (SADs) are indispensable in the management of the anticipated and unanticipated difficult airway. They can be used as a primary ventilating device and as a conduit for tracheal intubation (1). SADs, like the i-gel and intubating laryngeal mask airway (ILMA), allow hands-free maintenance of the airway without the need for endotracheal intubation. They can be easily placed without direct visualisation of the larynx and usually enable adequate ventilation. Endotracheal intubation through the i-gel has been found to be reasonably successful, and the success rate can be increased further by facilitating endotracheal tube (ETT) placement using a fiberoptic bronchoscope or light wand (1, 2). In addition, the i-gel has a rapid insertion time and is a reliable device to quickly establish the airway allowing for oxygenation and ventilation. It is simple and inexpensive and the less flexible stem allows for easier insertion. Moreover, the wider stem, epiglottic elevator bar, absence of aperture bars and good visualisation of the glottic opening facilitate fiberoptic intubation (3). In contrast, the use of an ILMA/LMA Fastrach may be limited owing to more difficult insertion in patients with limited mouth opening, rigidity and difficulties in guiding a fiberscope through a bar (3). However, removal of the i-gel after successful intubation may be problematic. Some authors have even suggested that removal of the i-gel after successful intubation may be impossible (4). Attempts at removal may be associated with malpositioning or accidental extubation of the ETT with a subsequent loss of the airway. This may be catastrophic in patients with a truly difficult airway.

Various techniques have been devised to circumvent this problem. Longer ETTs, such as microlaryngeal tubes, may be used, or a “tube through tube” technique may augment the length of the tracheal tube and minimise the chance of accidental extubation during i-gel removal in which a smaller-sized tracheal tube is used as a stabilising rod (1). The use of a silicone pusher from the ILMA set (5) and a nasopharyngeal airway (6) may help facilitate i-gel removal. Other anaesthesiologists have placed a ventilating bougie or airway exchange catheter (AEC) through the i-gel and then removed the i-gel, after which an appropriate size and type of ETT can be railroaded over the bougie or catheter (2). However, reintubation over an AEC is not always easy because a relatively large and stiff adult ETT, with its sharp leading edge, can get caught on either the corniculate or arytenoid cartilages or on the glottic structures.

An AEC is a long, hollow, semi-rigid catheter with a small internal diameter that is inserted through an in situ ETT before tracheal extubation. Steps for the appropriate use of AEC, as suggested by the All India Difficult Airway Association, include measuring the length of the AEC to be inserted and ensuring that the tip remains above carina. This usually corresponds to the length of the ETT in situ and is approximately 20–22 cm orally. The AEC should be inserted to its appropriate depth after applying lubricating jelly to it, after which the ETT can be withdrawn over the AEC. Throughout this process, oxygen supplementation can be provided at a flowrate of 1–2 L min<sup>-1</sup> (7). We suggest the routine use of an AEC to facilitate i-gel removal. The AEC is passed through the ETT, which has been passed through the i-gel. Once the AEC has been passed to a length of about 22 cm from the incisors, the i-gel can be carefully removed over the ETT. The AEC stabilises the

ETT, provides extra length for stabilising the entire assembly and prevents accidental extubation. In addition, if the ETT is slightly withdrawn during manipulation, it can be easily readvanced to an appropriate depth over the AEC. It is very unlikely that the ETT would inadvertently come out of the larynx entirely, thus decreasing the chances of trauma to structures at the laryngeal inlet by repeated attempts at ETT negotiation through the glottis. Following these procedures, the AEC can be withdrawn and the patient can be ventilated after connection to the anaesthesia circuit. This appears to be a fail-safe technique for i-gel removal, even in patients with a difficult airway.

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