Fiberoptic-guided intubation after awake insertion of the I-gel™ supraglottic device in a patient with predicted difficult airway

Sir,

Proper management of patients with predicted difficult airway is one of the most formidable challenges faced by anesthesiologists. Many studies and international guidelines have been published on this issue, all of which recommend intubation with the patient either awake or under mild sedation so as to preserve spontaneous breathing, as loss of the ability to breathe without assistance creates a risk of mortality.[1]

Intubation guided by fiberoptic bronchoscope (FOB) performed while the patient is spontaneously breathing is the technique of choice for patients with predicted difficult airway.[2]

The technique of intubation through the I-gel™ airway device has already been carried out successfully previously by different authors.[3,4] We describe the technique of fiberoptic-guided intubation through the I-gel™ in a spontaneously breathing adult patient with predicted difficult airway under mild sedation.

We present the case of a 68-year-old male patient (ASA III, body mass index 25 kg/m²) who underwent elective surgery due to lumbar disc herniation while presenting several predictive factors for difficult airway intubation (Mallampati III, interdental space 3 cm, and limited neck extension). Therefore, we decided to first insert the I-gel™ mask during spontaneous breathing and later introduce the endotracheal tube (ETT) through the device using a FOB as a guide. On the day of surgery the patient received midazolam 2 mg intravenous (i.v.), 2 pharyngeal instillations of lidocaine 10% spray, atropine 0.01 mg/kg i.v. and ranitidine 50 mg i.v. in the preoperative preparation room. Twenty minutes later, in the operating room, two additional pharyngeal instillations of lidocaine 10% were administered. The patient was then sedated with midazolam 2 mg, fentanyl 1 µg/kg and propofol 0.4 mg/kg until a level 3 sedation on the Ramsay scale was reached. An I-gel™ size 4 device was then slowly inserted after instructing the patient to open his mouth as wide as possible and report on his level of discomfort. After the I-gel™ insertion, the breathing circuit was connected and the capnography curve was obtained. The pulse oximetry at that moment was 98% and bispectral index (BIS) value was 84. A 7.0 mm ETT (Rusch, Teleflex medical, Wayne, Pennsylvania, USA) was placed over the FOB. The latter was then inserted into the I-gel™ tube until the glottic structures were visible [Figure 1]. At that moment we decided to induce general anesthesia with fentanyl 2 µg/kg, propofol 2 mg/kg and rocuronium bromide 0.6 mg/kg i.v., though without removing the FOB so as not to lose our view of the glottic anatomy. Once we confirmed that there was no movement in the vocal cords, we inserted the FOB into the patient’s airway. The ETT was carefully advanced down the trachea until we saw its bevel above the carina, and the FOB was then removed. The pulse oximetry at that moment revealed 98% and BIS was 36. Finally,
the I-gel™ was removed using the Magill forceps as a retainer for the ETT, which was left in its proper position inside the trachea. The technique described was well-tolerated by the patient who did not remember anything since entering the operating room.

Anesthesiologists usually described this technique as “awake intubation” when actually, most of the time, is performed under mild sedation and the patient is not really awake but sedated. In the technique described, neuromuscle relaxant was administered at the time the airway was secured, and the patient was breathing spontaneously through the I-gel™, confirmed by capnography curve. Rocuronium was only administered after correct ventilation through the I-gel™ mask and after obtaining an adequate vision of the glottic structures with a flexible FOB. Muscle relaxation allows for a proper intubation minimizing the risk of coughing and the appearance of airway reflexes, such as laryngospasm or bronchospasm.[3] Moreover, one of the primary advantages of the technique described here is the ease with which the FOB, can be inserted into the trachea. The support given by the device prevents the epiglottis downfolding, thus allowing for adequate visibility of the glottis. In addition, the wide stem of the device guides the tip of the FOB to a point just above the entry to the vocal cords, so little maneuvering of the FOB is necessary in passing. If the time required for the FOB or the ETT to reach the trachea is prolonged (due to presence of secretions or blood, the work of anesthesia practitioners, etc.) the patient can be ventilated through the I-gel™, recovering an eventful pulse oximetry desaturation.

On the other hand, one of the main limitations of this technique is the presence of pharyngeal or laryngeal masses since the insertion of the I-gel™ can cause bleeding or obstruction of the airway. Therefore, this technique should not be undertaken in those circumstances.

We believe the technique presented here is a safe and effective method for intubating certain patients with anticipated difficult airway. However, additional studies including a larger number of patients should be performed to confirm these findings.

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Conflict of interest
There are no conflicts of interest.

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Figure 1: View of the glottic anatomy. The I-gel cuff lies just above the entry to the vocal cords, which facilitates the pass of the fiberoptic bronchoscope

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