'I-Gel' In Resuscitation And Rescue Ventilation: Can A Minor Modification In Design Be More Useful!

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Citation

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Abstract

Sir,

The newly marketed supraglottic airway device ‘i-gel' (from Intersurgical) has been a boon to the airway management armamentarium. It has a host of advantages including easy atraumatic insertion, no need for balloon inflation, inbuilt bite block, a ‘gastric channel' for decompressing the stomach, minimal possibility of intraoperative rotation etc. We, at our institute have been using i-gel quite regularly for almost a year now. But, recently we faced a problem of air leak from the gastric-channel port of the i-gel in two of our patients. Though the recommended guidelines state that one should remove and reinsert the i-gel if this happens, we opted to keep the i-gel in place since it was ventilating the lungs well when the gastric channel port was blocked manually. Since we could fit nothing into the port, we closed the port with a roll made of adhesive tape. We are submitting this report with an aim to extrapolate this aspect in an emergency situation like resuscitation or rescue ventilation in an unanticipated difficult airway where multiple attempts at inserting the i-gel may prove to be hazardous.

A 71 year old, 70 kg body weight patient came to the operation theatre for ureterorenoscopy under general anaesthesia. In the operation theatre, he was premedicated with midazolam 1 mg, ondansetron 4 mg and glycopyrrolate 0.2 mg. Induction was carried out with fentanyl 140 ?g, propofol 80 mg and atracurium 35 mg. After three minutes of mask ventilation, number 4 size ‘i-gel' was inserted without any difficulty and the anaesthesia circuit was connected to the i-gel. A sound of air leak was noted from the area of ‘i-gel' and the T-connector of the circuit. The ventilator also sounded alarm of ‘circuit leak' with a peak airway pressure of 10 cmH_2O and a 60% reduction in the delivered tidal volume. After ruling out the possibility of light anaesthetic plane and rotation of i-gel etc, the source of the hissing sound was traced and found to be the ‘gastric-channel' port. Digital blockade of the channel opening caused the leak to disappear. We tried to close the port with the intravenous cannula cap, needle cap and everything on the anaesthesia table. But, nothing fitted into the port properly. So, finally we took a small length of the micro pore tape, rolled it to make a thin stopper, tied a suture around it to avoid accidental slippage into the trachea and inserted it into the port with the suture ends hanging outside. To enhance the seal, we rolled the dynaplast used to secure the ‘i-gel' over the whole thing. This worked perfectly and the case was done without any further issues.

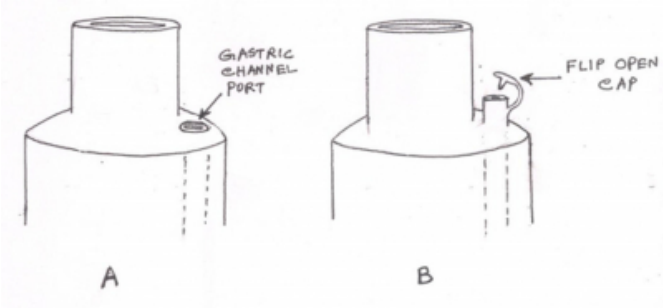
Although a small air leak or air venting through the gastric channel may be a useful mechanism to protect against gastric insufflations, an excessive leak means that the device is probably not seated properly [1] . The company provided user guide [1] recommends that if an excessive air leak is noticed during IPPV, the corrective measures that can be taken are assessment of the depth of anaesthesia and muscle relaxation, limiting tidal volume to less than 5ml/kg and gentle hand ventilation of the patient to keep peak airway pressure to around 15-20cm of H_2O. If all of the above maneuvers fail to control the leak, then change to one size larger i-gel is recommended.

But, is it always feasible or wise to remove an already secure airway device with some amount of leak though slight manipulation would enable it to ventilate the lungs to an acceptable limit? Probably, the nature of patient's airway, the expertise of the person putting the i-gel and the grade of emergency would be the key factors in this decision making. There is evidence in the literature showing that i-gel has been used in rescue ventilation in cannot intubate cannot ventilate (CICV) situations [2,3] , as well as during resuscitation [4] . It is labeled as a very easy and simple airway

device for non-airway experts to use during cardiopulmonary resuscitation [5,6] . So, we think this wonderful device can be made more foolproof by providing a flip open type of blocker (fig) for the gastric channel port (as we see in double lumen endobroncheal tube) to be used in excessive air leak scenario. This way, by flipping the blocker open one can put a suction catheter and decompress the stomach and close the inlet if there is an unacceptable leak. We think in an emergency situation this might be very helpful. Top of Form

Figure 1

Figure 1: The I-gel with the gastric channel port (A) and the recommended modification (B).



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