Correspondence

Blind tracheal intubation through the laryngeal mask

To the Editor:

Drs. Godley and Ramachandra Reddy report a case of awake blind tracheal intubation through the laryngeal mask.[1] After insertion of the laryngeal mask, they confirmed the correct position of the mask using a fibreoptic bronchoscope. They removed the fibrescope and then blindly passed a tracheal tube through the laryngeal mask into the trachea. They claim that blind insertion of a tracheal tube may fail if the position of the mask has not been confirmed.[1]

The success rate of blind tracheal intubation through the laryngeal mask at the first attempt is up to about 70%;[2,3] it may be very low even after repetitive attempts, by the choice of a tracheal tube.[3] In these studies, the position of the laryngeal mask was not assessed. I therefore examined the success rate of this blind technique after correct positioning of the laryngeal mask.

In 10 anaesthetized and paralyzed patients, the laryngeal mask was inserted and the position of the mask was assessed using a fibrescope. The glottis was always seen just below the grille of the mask, and the oesophagus was not seen. The fibrescope was removed and a Portex 6.0-mm cuffed tube waspassed blindly through the mask, without manipulation of the patient's head and neck. In 6 of 10 patients, the tube was inserted into the oesophagus at the first attempt. This indicates that even when the position of the laryngeal mask is optimal, tracheal intubation through the mask often fail when the tube is inserted blindly.

A higher success rate may be obtained when the patients' head and neck are manipulated during the blind intubation, but it may not be possible in patients with difficult airways. In contrast, when a tracheal tube is passed over a fibrescope through the laryngeal mask, intubation is almost always successful at the first attempt without manipulation of the head and neck both in anaesthetized[4] and in awake patients.[5] I suggest that the use of a fibrescope for tracheal intubation through the laryngeal mask is more reliable than the blind technique.

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REPLY

We would like to emphasize that our patient with pre eclampsia, fetal distress and bleeding tendency, was not paralyzed. She was able to tolerate the placement of the LMA with adequate topical anaesthesia and correct placement was ensured using the fibrescope. With the patient conscious and breathing spontaneously, we were able to provide good oxygenation and unobstructed ventilation. The tracheal tube was inserted blindly, connected to the circle system and the capnograph confirmed the correct placement of the tracheal tube in the trachea. Using a fibrescope would also have confirmed successful intubation. However, this may have increased airway resistance and decreased oxygen supply.

We conclude that the use of the fibrescope in spontaneously breathing patients may obstruct the upper airway. Patients who are pregnant and experiencing fetal distress are particularly at risk. However, the success rate of blind intubation through correctly placed LMA's in spontaneously breathing, conscious patients does need further study.

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Lung ventilation and bronchopleural fistula

To the Editor:

A 46-yr-old man was admitted to ICU with streptococcal pneumonia. Lung ventilation parameters were: pressure control (PC) 30 cmH_2O, rate 20 $\cdot min^{-1}$, PEEP 7.5 cmH_2O, FiO_2 0.8. The CXR revealed bilateral alveolar infiltrates and a small right sided pneumothorax with a #20 Fr chest tube.

On day 3 due to an enlarging pneumothorax, the chest tube was changed to #28 Fr resulting in a large air leak (estimated 10 $L \cdot min^{-1}$) and a decrease in the patient's expired tidal volume to 100 ml. However, PC, IMV, manual ventilation and insertion of a second chest tube failed to improve the ABGs. A left sided #39 Fr. double lumen tube (DLT) was placed. Neither high frequency jet ventilation (HFJV) to both lungs nor PCV to the left lung with CPAP to the right lung were successful. Adequate ventilation ($PaCO_2$ 28 mmHg, PaO_2 106 mmHg) was achieved with the following ventilatory manipulations: right lung – HFJV driving pressure 8 psi, rate 120 $\cdot min^{-1}$, inspiratory time 30%, PEEP 10 cmH_2O; left lung – PC 20 cmH_2O, rate 20 $\cdot min^{-1}$, PEEP 10 cmH_2O, FiO_2

1.0). The DLT was replaced by a single lumen endotracheal tube on day 6 and the trachea extubated on day 10.

Various ventilatory strategies have been used to minimize airway pressures to reduce the flow of gas through a bronchopleural fistula.[1-3] In this patient, PC was chosen to lessen the risk of barotrauma to the left lung by limiting the peak airway pressure but maintaining mean airway pressure.[4] Due to potential problems, the DLT should be considered as a short term solution until ventilation via a single lumen tube can be reinstituted.

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Obstruction of a breathing system filter

To the Editor:

A 56-yr-old man required postoperative mechanical ventilation. He had been treated with antibiotics, chest physiotherapy, nebulised acetylcysteine (Parvolex) and salbutamol. During weaning from mechanical ventilation, he became progressively agitated, tachypnoeic and hypertensive. Auscultation of the lungs showed a widespread wheeze and poor air entry to both lungs.

There was no apparent obstruction of either the tracheal tube or breathing tubes. Salbutamol, aminophylline, hydrocortisone and magnesium were given, but none was effective. Therefore, the patient was sedated and paralysed but airway pressures increased further. Hypercapnia with normal oxygenation was noted. Manual ventilation was difficult. By close inspection, we noticed a small bubble in a breathing system filter (Pall BB 100 filter), which had been placed between the catheter mount and the Y-piece. Normal breathing was promptly obtained by replacing the filter.

Pall Biomedical hypothesised, after extensive investigation of this device, that nebulised acetylcysteine might have broken down viscous mucus, which was present on the patient side of the hydrophobic filter element, and produced a fluid of low surface tension. This product then might have entered the pores of the filter membrane[1] and increased the filter resistance. Acetylcysteine is not licensed for nebulisation by the manufacturer (Evans Medical Ltd) and therefore Pall had not tested this factor before this incident.

We inform readers that obstruction could occur when a breathing system filter is used during nebulisation of acetylcysteine, and we recommend that acetylcysteine is delivered only during inspirations.

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REFERENCE

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Long-neck slip joint for preventing compression of RAE tube

To the Editor:

Several hazards with the RAE preformed tracheal tube, such as herniation, obstruction, and bronchial intubationl, have been reported.[1-3] In operations on the palate, pharynx, and larynx, a mouth gag with a tongue depressor, e.g., the Boyle-Davis gag, is commonly used in combination with the RAE preformed endotracheal tube in children. Placement of a mouth gag with a tongue depressor can lead to compression of the tube with resultant upper airway obstruction.[1] When the preformed bend of the RAE tube is placed between a tongue depressor and the lower incisor teeth, it is frequently flattened due to the pressure exerted by the tongue depressor. To prevent compression of the RAE tube, we have used a long-neck slip joint. After the RAE tube is cut in the angled portion, the distal end of a long-neck slip joint lubricated with lidocaine spray is inserted into the tube. The bend of a slip joint is adjusted to that of the tube. The neck of the slip joint is as long as that of the RAE tube. The inner diameter of the slip joint is 0.5 mm longer than that of the tube (Figure 1). The RAE tube connected to a long-neck slip joint is not compressed during surgery (Figure

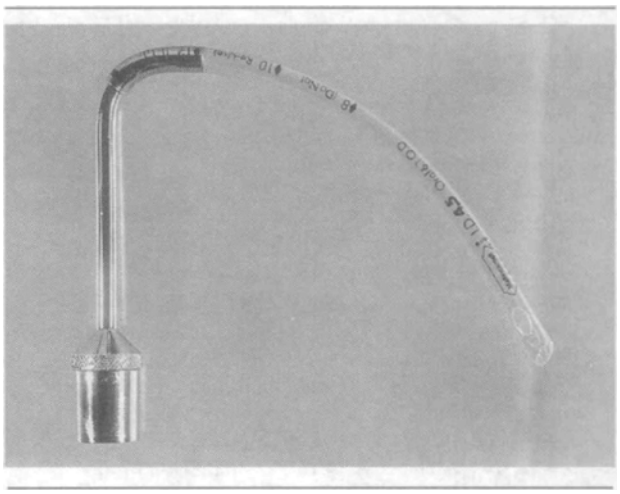

FIGURE 1 The RAE tube connected to a long-neck slip joint.