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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REFERENCES

- 1 Bishop MJ, Benson MS, Sato P, Pierson DJ. Comparison of high frequency jet ventilation with conventional mechanical ventilation for bronchopleural fistula. *Anesth Analg* 1987; 66: 833-8.
- 2 Orlando G III, Gluck EH, Cohen M, Mesologites CG. Ultra high-frequency jet ventilation in a bronchopleural fistula model. *Arch Surg* 1988; 123: 591-3.
- 3 Otruba Z, Oxorn D. Lobar bronchial blockade in bronchopleural fistula. *Can J Anaesth* 1992; 39: 176-8.
- 4 Tharratt RS, Allen RP, Albertson TE. Pressure controlled inverse ratio ventilation in severe adult respiratory failure. *Chest* 1988; 94: 755-62.

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 membrane¹ 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 acetyl-

cysteine, and we recommend that acetylcysteine is delivered only during inspirations.

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REFERENCE

- 1 DHSS. Pall Ultipor breathing system filter (BB50/BB50T/BB22-15): warning on the use of ipratropium bromide (Atrovent). HN(HAZARD)(85)7 1985.

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 intubation, 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.⁴ 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.