

A complication of a flexible tracheostomy tube during laryngectomy

The Ruschelit flexible tracheostomy tube (Laryngoflex) is recommended for use during laryngectomy and is designed to prevent kinking during the suturing of the pharynx following removal of the larynx. We have recently encountered two serious cases of respiratory obstruction while using these tubes. In both instances, shortly after insertion of the tube, the peak airway pressure increased from 20 to 50 cmH₂O, accompanied by decreased gas entry to both lungs, especially the right, with wheezing on auscultation. At the same time the arterial oxygen (S_aO₂) saturation decreased to 75%.

Bronchial intubation or cuff herniation was suspected. A suction catheter was passed through the tube without difficulty. The cuff was deflated and the tube withdrawn a short distance. Thereafter with each subsequent respiration, the cuff of the flexible tube displaced itself from the trachea, preventing fixation (Fig. 1). On both occasions we were forced to substitute the Ruschelit tube with the ordinary Portex tracheostomy tube. We believe that the obstruction was caused by the tip of the tube impinging on the carina or on the tracheal wall (Fig. 2). The distance between the cuff and the tip is very short and the fact that the tip is not bevelled further contributes to the development of obstruction. This probably caused a combination of a ball-valve mechanism maintained by the cuff and a rising intrathoracic pressure which quickly produced complete airway obstruction.

Similar cases of obstruction due to folding of a soft unprotected tip has also been reported by several authors

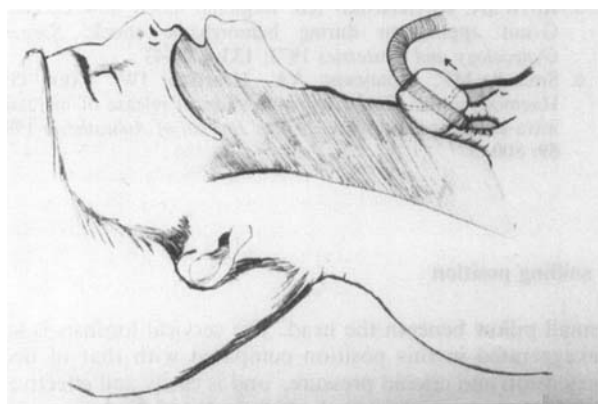


Fig. 1. The withdrawn tube displaced itself from the trachea, with each subsequent respiration, preventing fixation.

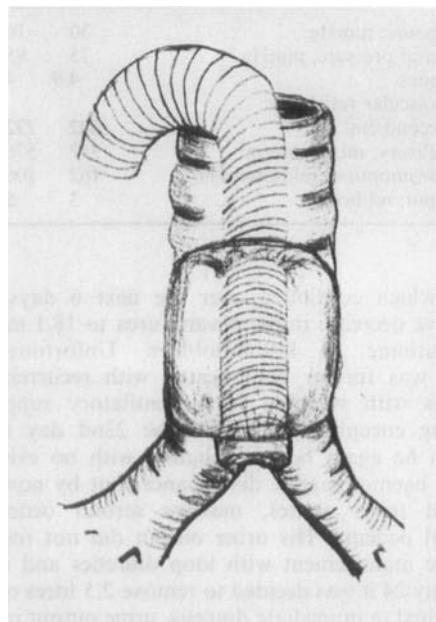


Fig. 2. The tip of the tube impinging on the carina causes airway obstruction.

using armoured tubes.¹⁻³ It is evident that the presence of an armoured tube cannot be regarded as a guarantee of a clear airway and that using such a tube for a laryngectomy could be a problem and even hazardous.

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Sexual excitement following anaesthesia or sedation

Amorous and disinhibited behaviour following propofol anaesthesia has often been reported since its introduction.^{1,2} This behaviour was initially thought to be amusing;³ however, there have been recent accounts of distressing sexual fantasies following propofol anaesthesia and more commonly following sedation with benzodiazepines.^{2,4}

I would agree strongly with recommendations of Drs Boheimer and Thomas (*Anaesthesia* 1990; **45**: 699) that a third party should be present when drugs which may alter

normal perception are administered, in view of the possibility of laying oneself open to allegations of sexual impropriety. However, I would question the advisability of forewarning patients of the possibility of sexual hallucinations or amorous behaviour. A major cause of pre-operative apprehension is the belief that the patient may do something embarrassing whilst under anaesthesia and a warning of this nature might well increase the anxiety of the patient. It is also possible that behaviour of this kind might be increased because of autosuggestion.

It is interesting to note that worries of sexual excitement following anaesthesia have been reported almost since the advent of anaesthesia. In the report of the Westminster Medical Society in the *Lancet* of 1849, G.T. Gream, Surgeon Accoucheur to Queen Charlotte's Lying-in Hospital was completely opposed to the use of chloroform, particularly in obstetrics.⁵ He alluded to several cases in which women had, under the influence of chloroform, made use of obscene and disgusting language. Simpson, who was instrumental in the introduction of chloroform to anaesthetic practice, was prompted to reply to these allegations.⁶ In a report from the Medico-Chirurgical Society of Edinburgh, also in 1849, he stated that chloroform had been in constant use in Edinburgh for 15 months without casualty and he had never heard of anyone having seen sexual excitement. He went on to say that 'After inhaling ether during her confinement in the Maternité, one Parisian prostitute stated that she had had lascivious dreams. But surely it was, to say the least, very unbecoming to say that most English ladies should have sexual dreams (like one French prostitute) when under the

influence of chloroform.' Are we very unbecoming to make such suggestions now?

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The cost of propofol infusion in neurosurgery

We read with interest correspondence on the cost of propofol relative to other agents in day case surgery,^{1,2} since we have been examining this problem in another context. Propofol administered as a continuous infusion may be preferred to conventional inhalational techniques in prolonged surgery on account of the rapidity of recovery from anaesthesia.³ However, as previous correspondents have noted, it is a relatively expensive agent.

We examined the cost of maintenance of anaesthesia in 24 patients undergoing semi-elective clipping of intracranial aneurysms. Eleven patients were maintained with a nitrous oxide-oxygen-isoflurane technique, and 13 with oxygen-air-propofol. In both groups depth of anaesthesia was assessed on clinical grounds, i.e. heart rate, blood pressure, sweating, and the isoflurane or propofol adjusted accordingly.

Costing was done as follows: propofol technique: number of ampoules opened counted, start and end of infusion times noted; inhalational technique: isoflurane vaporizer filled to line before start, and refilled to line at end; volume of isoflurane used measured to nearest 10 ml; nitrous oxide maintained at steady flow throughout; start and end times noted. The costs of these agents were supplied by our hospital pharmacy and are as follows: propofol, 5 × 20 ml ampoules, £16.50; nitrous oxide, 5000 litre cylinder, £20.32; isoflurane, 100 ml, £32.50. Costs which were common to both groups such as muscle relaxants, antibiotics and analgesics were not included, nor was the cost of the induction agent.

In the inhalational group, the mean duration was 252 minutes (range 165-320) with a cumulative duration of 2780 minutes. This resulted in a total cost of £269.20 or

£5.81/hour. The corresponding figures in the propofol group were 291 minutes (range 205-370), 3787 minutes, £648.50 and £10.27/hour.

There was a degree of interindividual variability in both groups, as might be expected. Costs in individual patients ranged from 5.7p/minute to 17p/minute in the inhalational group, and from 12.1p/minute to 25.7p/minute in the infusion group.

Thus it can be seen that propofol infusion is markedly more expensive than an inhalational technique using isoflurane, which, while it is the volatile agent of choice in neuroanaesthesia, is the most expensive currently available. Use of a circle system would render the inhalational technique even less expensive. However, relative to the total cost of the patient's stay in hospital (for instance, the Sugita clips used during these operations cost £80-£100 each) we suggest the difference is not so great as to be a major factor influencing choice of anaesthetic technique.

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Regional anaesthesia must be properly managed

Dr Wildsmith and Professor Aitkenhead are to be commended on their correspondence (*Anaesthesia* 1990; **45**: 984-5); they no doubt subscribe, as I have since the late 1960s, in principle, to the content of the statement made by Dr Daniel C. Moore in 1982 at the first European Society of Regional Anaesthesia Meeting in Edinburgh, 'to

perform (most forms of) regional anaesthesia without sedation shows crass disregard for patient comfort and well-being'. An explanation of possible subjective feelings during a procedure should be made to a patient without causing anxiety. The old adage of a pre-operative visit is as good as or better than premedication alone still stands.