TRACHEAL INTUBATION WITH A ROBERTSHAW TUBE VIA A TRACHEOSTOMY

Sir,—We read with interest the report by Dr P. M. Simpson (1976) of a patient, with a tracheostomy, requiring intubation with a double-lumen tube for pulmonary surgery. We have recently met this problem in two patients undergoing a right thoracotomy and in one patient undergoing a left thoracotomy for carcinoma of the lung.

As with Dr Simpson’s patient our first patient, a male of average size, presented no difficulty in intubation and securing the airway. We used a large (41-FG) left Robertshaw tube. However, the second patient (male) weighed 87 kg. He had a wide tracheostomy and required a left thoracotomy. The large (41-FG) right Robertshaw tube passed into the right main bronchus and was positioned correctly so that the upper end of the tracheal cuff was at the level of the skin. The correct use of the right-sided Robertshaw tube depends on the orifices of the right endobronchial portion being in accurate apposition to the orifice of the right upper lobe and remaining in position during the operation. As the tube was mobile in the airway it was necessary to ensure that it remained positioned correctly. The problem was solved conveniently by fitting the removable flange of a 42-FG Bradfield tracheostomy tube over the Robertshaw tube just above the tracheal cuff. Tapes were tied around the neck in the manner of securing a tracheostomy tube. In addition, as the pharyngeal curve of the Robertshaw tube lay on the anterior surface of the neck and under the chin (as in Dr Simpson’s illustration), a zinc oxide plaster strip (1 inch wide) was used to tape the tube to the chin and was brought up over the top of the head (which was bald). This technique of strapping had the additional advantage of preventing the mandible from sagging and thus tending to kink the tube. The flanges from a James tracheostomy tube or from a nephrostomy tube of appropriate size would have been satisfactory alternatives.

The third patient, who was also undergoing right thoracotomy, presented a slightly different problem. She had undergone an extensive resection for carcinoma of the larynx and trachea 2 years previously and the upper part of the manubrium had been removed, leaving a small tracheostomy (fig. 1). The airway was secured successfully using a small (37-FG) left Robertshaw tube, with the excised flange of a Portex tracheostomy tube fitted over strapping over the tracheal cuff of the Robertshaw tube, thus preventing the flange from slipping. As the patient had a luxuriant head of hair strapping fixed the tube securely to the mandible and was continued over the cheeks to the forehead. In all three patients it was important to ensure that excessive flexion of the neck did not occur so that the Robertshaw tube was not kinked or its accurate position in the bronchus compromised.

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Sir,—There are many causes of inability to visualize the larynx by direct laryngoscopy even when the subject is anaesthetized and the muscles are relaxed. These include variations in anatomical structure (Case, James and Lines, 1956; Gillespie, 1963) and pathological conditions (Aro, Takki and Aromaa, 1971; Sharwood-Smith, 1976).

A healthy 26-year-old male patient was admitted to hospital for total left hip replacement. He had undergone insertion of a right femoral head prosthesis at the age of 20 years, under general anaesthesia. On that occasion there was no difficulty in laryngoscopy and tracheal intubation. Anaesthesia was induced with thiopentone 300 mg followed by suxamethonium 75 mg. After a brief period of ventilation with oxygen, several attempts at intubation of the trachea were unsuccessful. A Macintosh laryngoscope could not enable elevation of the epiglottis even when the head was raised and a pillow was placed under the shoulders. The attempts via the mouth were abandoned and blind nasal intubation was tried without success. After 25 min, with intermittent periods of oxygenation to avoid hypoxia and repeated doses of suxamethonium, a Magill non-cuffed rubber tracheal tube (9 mm i.d.) was inserted blindly through the mouth and into the larynx. Thereafter anaesthesia and surgery were uneventful. No difficulty was encountered in maintaining the airway at the end of anaesthesia.

fig. 1. Photograph illustrating the technique of securing the position of a Robertshaw tube inserted via a tracheostomy using a flange separated from a tracheostomy tube.
A skiagram of the neck was performed a few days later. X-ray of the neck (lateral view) showed calcification of the inter-spinous ligament of the cervical region and fusion of the atlanto-occipital joint (fig. 1).

Calcification of the inter-spinous ligament and fusion of the atlanto-occipital joint are rare causes of difficult intubation and have not been mentioned in the literature. Extension at the atlanto-occipital joint and flexion of the neck were not possible in this case.

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