

APPARATUS

A fibre-optic endoscope used for nasal intubation

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Blind nasal intubation is a manoeuvre of undoubted value in circumstances where a direct view of the glottis is difficult or impossible but even diligent practice will not guarantee that the anæsthetist will be able to pass a tube in this way in a desperate situation where time is pressing. Repeated thrusts with the endotracheal tube may tear the mucosa or excite glottic spasm.

The development of sophisticated fibre-optic endoscopes which carry their own flexible illuminating and viewing systems in a tube of 6mm diameter for the first time permits a direct view through the endotracheal tube during nasal intubation.

The particular instrument used was developed as a choledocoscope. It is described in detail elsewhere¹. Basically it consists of a small central group of image-carrying fibres surrounded by light-carrying fibres in a separate sheath. Both bundles are enclosed in a plastic sheath. The eyepiece and objective lens are focused separately. A light-box supplies the source of illumination which is carried to the instrument by a flexible fibre cable (figure 1).

The instrument has very little elasticity of its own and can be bent into a circle of less than 5 inches (12.7cm) diameter. When placed inside an endotracheal tube it does not reduce the curvature or diminish the flexibility before the kinking point. The endoscope slips easily down a 7.5mm tube without lubrication. Sufficient extra length is available that the eyepiece may be turned back towards the operator in his customary position above the patient's head.

The focus of the lenses can be adjusted to give a depth of focus several inches beyond the objective lens. The endotracheal tube is passed as far as the naso-pharynx. The endoscope is then inserted until the end of the tube comes into view. Both are now advanced together. The chords come into view without any prior view of the epiglottis. If they appear to one side the tube is given a twist to turn it

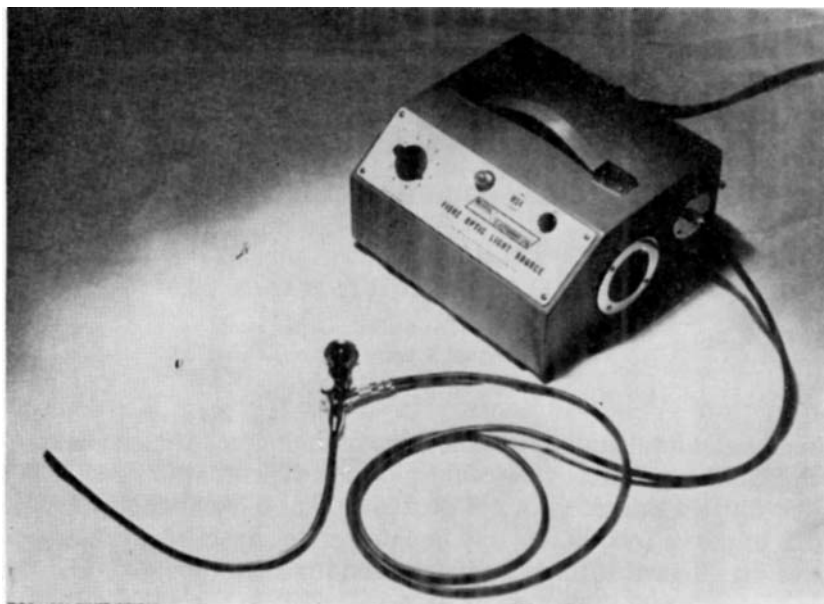


FIGURE 1



FIGURE 2

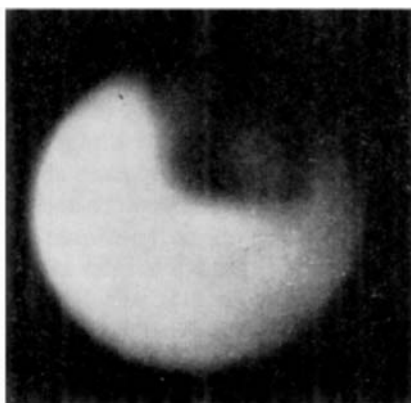


FIGURE 3

into the trachea. The chords are seen in figure 2 and the view in figure 3 shows the arytenoids in the foreground and the tracheal rings ahead.

The dimensions of the endoscope are such that it could also be used to guide an endobronchial tube into position.

Two small points of technique should be mentioned. Firstly the objective lens should be smeared lightly with soapy water before insertion so that the view is not spoiled by the condensation of breath on the

cold glass of the lens and, secondly, pharyngeal mucus should be cleared before starting intubation.

Acknowledgement

I would like to thank the Medical Supply Association for the loan of the choledocoscope.

Reference

¹SHORE, J. M. and LIPPMANN, H. N. (1965). A Flexible Choledocoscope. *Lancet*, *i*, 1200