A NEW ENDOBRONCHIAL TUBE FOR BRONCHO-PLEURAL FISTULA REPAIR

BY

W. N. VELLACOTT

The Royal Infirmary, Worcester

In anaesthesia for the surgery of pulmonary tuberculosis, bronchial blocking appears to be the exceptional rather than the usual procedure. This is, no doubt, largely due to the much improved pre-operative treatment nowadays of patients with sputum. Moreover, there has not yet been published by those who practise bronchial blocking a convincing series to show that their cases have a lower collapse and spread rate than a series done under exactly similar conditions in the same hospital, but without the use of blockers. A decided advantage, of course, arises from doing a good deal of bronchial blocking, for when those cases come along which undoubtedly need it, one is well-practised, and little tempted to try and do without it.

Endobronchial toilet with a long suction tube and sucker is commonly used during and at the end of operation. Though this is useful, the practice is somewhat overvalued; bronchoscopy done after such a toilet will frequently show that more sputum needs removal. Whenever the state of the patient allows it, post-operative bronchoscopy is advisable, though this procedure is exhausting and may be dangerous. This is, however, the only reliable method of ensuring a reasonably clear bronchial tree.

The face-down position is used by only a comparatively small number of thoracic surgeons in this country. It serves the anaesthetist’s purposes very well for upper lobectomies, but not so well for lower lobectomies where it invites spread to the middle lobe on the right side, and to a lesser extent to the upper lobe on the left side. It is in any case likely to remain restricted for use with those surgeons who prefer this position for surgical reasons.

Again, for surgical reasons only, thoraacoplasty is still often done under regional anaesthesia. This is in spite of an anaesthetic mortality which as a result of accidental intravenous or intrathecal injection, or of an occasional overdose, is probably higher than under general anaesthesia. An operative field which is bloodless and quiet, with the lung moving away from the surgeon instead of towards him during inspiration, is an understandable attraction. Sputum cannot, however, be effectively cleared by a patient coughing under regional anaesthesia (Parry-Brown, 1948), and patients are usually discouraged from coughing during the operation.

There is at least one type of case where it is dangerous not to use a blocker, and yet difficult to find a suitable one. If a right upper lobectomy is followed by broncho-pleural fistula and empyema, a surgeon may decide to try and close the
fistula. This is usually done in the lateral position, so that the advantages of the face-down position are not available. One is therefore obliged to block off what is left of the right upper lobe bronchus to prevent the entry into the bronchial tree of pus and of blood which collects while the surgeon is getting down to the fistula. A Magill’s or Thompson’s blocker can of course be placed in the right main bronchus to occlude the right upper lobe bronchus, but this prevents the effectual use by a seriously ill patient of the whole of the right lung throughout the operation. The same disadvantage applies to the use of an endobronchial cuffed tube in the left main bronchus. There is usually too little of the stump of the right upper lobe bronchus left to allow the special short-cuffed Magill blocker to be placed in the bronchus itself. This procedure has been advocated for right upper lobectomy (Stephen, 1952). Its use would also be likely to enlarge the fistula.

The tube illustrated (fig. 1) offers a possible solution to the problem. It is a single-lumen latex tube, reinforced with spiral wire, and stiffened with an in-built malleable stilette. The purpose of the latter is to prevent a concertina effect when withdrawing the intubating bronchoscope with which the tube is used.

The tube has two inflatable cuffs. Cuff A is placed opposite the right upper lobe bronchus, occluding it; B remains in the trachea. Between the two cuffs there is a deeply cut, one-inch-long hole in the wall of the tube; this hole is directed towards the left main bronchus, and through it efficient exchange of gases takes place in the left lung. Very occasionally, the right upper lobe bronchus may be situated at too high a level in the right main bronchus for this procedure to be a safe one.

The tube cannot be used for operations on the left lung, as there is insufficient space for its distal end in the first part of the left lower lobe bronchus. The tube may, however, be used, if desired, for coping with cases of right upper lobectomy with excessive sputum. When blocking is considered necessary for this operation, I still prefer to try and place the short-cuffed Magill blocker in the right upper lobe bronchus. When this is done secre-
tions may be removed and not simply dammed back.

The endobronchial tube described probably has a limited use, but it may be found of value in the occasional difficult case. A similar reinforced latex tube has been designed for the left main bronchus during right pneumonectomy. It has an in-built stilette to prevent buckling, a single distal cuff, and no lateral lumen.

The tubes may be obtained from Talley Anaesthetic Equipment Ltd., 37a New Cavendish Street, London, W.1.

REFERENCES

BOOK REVIEW


This massive textbook covers a vast field of physiology, pharmacology, physics and pathology in relation to anaesthesia. It also includes chapters on the clinical administration of anaesthetics. The authors — not anaesthetists themselves — have called on their clinical colleagues to describe the practical techniques of anaesthesia, and these sections will have to be amplified if the title of the book is to be justified. These latter chapters follow closely the clinical practice in the English speaking countries. They show the very great influence British anaesthesia in particular has had in raising the standard of anaesthesia in other countries. Reading the book, however, gives one the feeling that, in Germany at any rate, the clinical side of anaesthesia still takes second place to what has become known as the “scientific aspects” of the subject. No opportunity is lost of including tables, charts and graphs, whether these be of ranges of blood pressure at different ages, the mechanism of blood clotting, or function-localization in the brain. It might have been better to have placed the authorship in the hands of experienced clinical anaesthetists who could then have the appropriate sections written by expert surgeons, pharmacologists and others. Our own textbook edited by Frankis Evans could well serve as a model in this respect. These observations must not detract from the admiration excited by the enormous amount of material and the enormous labour that must have been spent in compiling it. Though some of the contents have only remote relevancy to clinical anaesthesia, the book as a whole will be of the greatest value for reference purposes. Research workers in particular will appreciate the very extensive lists of references. Whether a book like this will improve the standard of clinical anaesthesia in Germany, or raise the status of the anaesthetist sufficiently to attract men likely to be the future authors of textbooks, to take up anaesthesia as their life work is another matter.

W. W. Mushin