A SIMPLE T-PIECE
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The value of the T-piece principle in reducing the resistance an anaesthetic apparatus offers to respiration is well established. Unfortunately the commonly used Ayre's (1937) T-piece cannot be connected directly to the endotracheal tube. The angled connectors and pieces of rubber tubing which must be interposed markedly increase the resistance of the apparatus to respiration. To overcome this drawback a T-piece was designed, for use in adult patients, of a pattern which would make connections unnecessary. To this end the endotracheal tube was mounted directly on a side arm let into a wide-bore piece of metal tubing. As this T-piece was designed originally for neurosurgical work it was also necessary to provide for endotracheal suction and for a quick method of converting the open system into a semi-closed one should respiration become depressed and the patient require manual inflation of the lungs.

The connection consists of a metal tube 1½ inches in length and 1 inch in external diameter. This tube is tapered on the inside at one end to take the smaller taper of the standard double-tapered endotracheal catheter mount. At the other end it is tapered on the outside to take a standard expiratory valve mount. From the mid-point of the side of this tube projects the attachment for the endotracheal tube and diametrically opposite this is a second small tube with a stopper attached to allow for endotracheal suction (fig. 1).

In use the endotracheal tube can be attached to the connection before intubation, with a stilette passed through the stoppered side tube if desired (fig. 2). Following intubation the connection and endotracheal tube are fixed in position with adhesive strapping. A double-tapered catheter mount, attached to a length of pressure tubing bringing gases from the anaesthetic machine, is inserted into the connection. A 3ft. 6in. length of standard wide-bore corrugated tube is attached on to the other end of the connection by means of a Heidbrink valve mount. If the distal end of the corrugated tube, with mount attached, is left open to the air the
The connection, with endotracheal tube and stilette in position, ready for intubation.

T-piece is complete (fig. 3; in the illustration a Heidbrink valve has also been left attached to the distal end of the corrugated tube). When, however, a short-acting muscle relaxant has been used for intubation or should respiration fail during anaesthesia it will be necessary to respire the patient by manual compression of a reservoir bag. This is accomplished by attaching a Heidbrink valve and a reservoir bag mounted on a valve mount to the distal end of the corrugated tube (fig. 4).

Apart from the T-piece connection all the equipment used, with the addition of the valve mount used on the reservoir bag, is standard equipment on the Boyle’s machine. This connection has proved very simple in use and cases anaesthetized with its aid have been agreeably free from the venous oozing and raised intracranial tension associated with hypercarbia or any increased resistance to respiration.

Although the connection was originally designed for neurosurgical work there is also scope for its use in such operations as mastectomy and thyroidectomy where the avoidance of venous oozing is of the utmost importance.

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REFERENCE