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### *Regional anaesthesia and reactive airway disease*

To the Editor:

We read with interest the recent review article of LM Pinto Pereira *et al.*<sup>1</sup> and commend them for their remarkable synthesis on the “Physiological mechanisms, pathophysiological alterations and therapeutic considerations.” However, in the first part of their paper dealing with “Perioperative management of the patient with reactive airways,” we were very surprised not to find mention of regional anaesthetic techniques. All the anaesthetic recommendations were directed towards general anaesthesia. We would like to point out that a regional anaesthetic technique should be considered systematically in patients with reactive airways and usually preferred to general anaesthesia<sup>2,3</sup> although this does not always prevent intraoperative bronchospasm in asthmatic patients.<sup>4</sup>

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## REPLY

*Mercier et al. have raised the important consideration of regional anaesthesia in patients with hyperactive airways. Regional anaesthesia avoids the respiratory depression associated with general anaesthetic techniques, airway instrumentation and diminished airway reflexes. In pelvic, perineal and lower extremity surgery regional anaesthesia is associated with fewer respiratory complications and may be preferred to general anaesthesia.<sup>1</sup> However, the associated respiratory complications (83%)<sup>1</sup> with high spinal anaesthesia and epidural block make regional anaesthesia unsuitable for upper abdominal surgery. Inhibition of sympathetic innervation may precipitate a sharp decrease in blood pressure and severe bronchospasm in the asthmatic patient<sup>2</sup> from the combination of neural blockade of the adrenal gland,<sup>3</sup> interference with pulmonary sympathetic innervation<sup>4</sup> and unopposed vagal activity.<sup>2</sup> Additionally, loss of expiratory muscle power may compromise the condition of patients with airway obstruction and who rely on active exhalation for adequate gas exchange.<sup>5</sup>*

*The principle advantage of regional anaesthesia is continuous neurological evaluation which may be lost in patients who are not co-operative. Sedatives and analgesics in these patients may make respiratory compromise a distinct possibility.*

*Our review aimed to describe the pathophysiology of the disease and provide updated information on current and new therapies in patients who receive general anaesthesia. Drs. Mercier, Bouaziz and Benhamou have made a valuable comment which stresses the importance of preoperative assessment and the application of regional over general anaesthesia when possible in the asthmatic patient.*

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### *Maintaining ventilation through the Montgomery t-tube*

The Montgomery T-tube was first introduced in 1980<sup>1</sup> to be used in place of a standard tracheostomy tube for patients with tracheal defects. The problem of artificial ventilation through the T-tube remains however. The previously described method of using a Fogarty catheter to obstruct the upper intraluminal limb of the T-tube is not suitable for long term ventilation.<sup>2</sup> We describe a new method of ventilation through the T-tube using a customized armored tube.

Two adults with ventilatory dependency due to C1 quadriplegia and subglottic stenosis were referred to the Southport Spinal Injuries Unit for long term ventilation and rehabilitation one month following road traffic accidents. Both patients required silicone T-tube insertion subsequently. In preparation for this procedure both patients underwent diaphragmatic pacing to maintain breathing by electronic stimulation during the T-tube insertion under total intravenous anesthesia.

A 5 mm I.D. armored tube, (8 mm O.D.) with a standard 15 mm connector, and 10 cm long, had been ordered specially to fit a 14 mm I.D. T-tube (Boston Medical Products). After its insertion into the T-tube, the proximal end of the armored tube was engaged firmly into the outer limb of the T-tube to provide an air-tight seal (Figure). It was then possible to provide adequate pulmonary ventilation through the T-tube using a Puritan Bennett 2801 companion in the pressure control mode. In this way, an essential alternative mode of ventilation to diaphragm pacing was easily available without the need to remove the T-tube.

Whilst this method of ventilation can be used for anesthesia, an advantage for long term transtracheal ventilatory assistance is its ability to provide both adequate pulmonary ventilation and a translaryngeal air-flow sufficient for speech.

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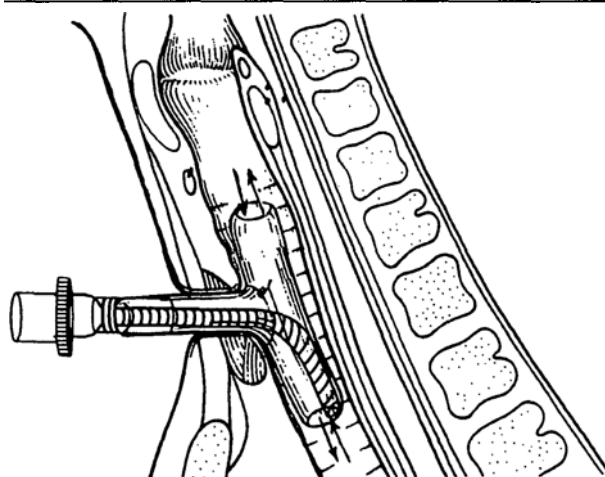


FIGURE A sagittal section showing the trachea with a Montgomery t-tube in situ and its removable inner armored tube for use with pressure control ventilation.

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