

that these patients have some kind of genetic defect which affects one of these brain pathways. It would be interesting to know if agents which alter endogenous opiate (naloxone), GABA (baclofen), or serotonin (ketanserin) activity would be clinically effective in reducing their muscle rigidity. For the future anesthetic management of these patients, one might anticipate that drugs which increase brain opiate activity (narcotics or nitrous oxide) would make their rigidity worse, while drugs which have been shown to have central muscle relaxant properties (benzodiazepines, barbiturates, ketanserin, inhalational agents) would attenuate the rigidity.

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## Yet Another Reason to Use a Fiberoptic Bronchoscope to Properly Site a Double Lumen Tube

*To the Editor:*—Among the various methods for one-lung ventilation, a recently introduced endotracheal tube with a movable blocker (Univent tube,<sup>®</sup> Fuji Systems Co. Ltd., Tokyo, Japan) has the advantages of ease of suctioning through its large main lumen, and for one-lung high-frequency ventilation through its small tube.<sup>1</sup> We describe an unusual complication with the use of this tube.

A 77-yr-old male patient (weight 37.5 kg, height 163 cm) with esophageal carcinoma was scheduled for esophagectomy. Following induction of anesthesia and paralysis, the trachea was intubated with an Univent<sup>®</sup> tube (size 37 F). After intubation, a fiberoptic bronchoscope (FOB; Olympus BF type 4B2, outer diameter 4.8 mm) was introduced into the main tube through a suction adaptor used for ventilation. Under direct vision, the tube was twisted approximately 90° toward the right side to be occluded, and the small tube was advanced. At that time, the silicon cap covering the tip of the small tube was dislodged and remained on the wall near the carina (fig. 1). The patient was placed in a head-down position to prevent the cap from moving distally, and the cap was successfully removed with a biopsy forceps *via* the suction

channel of the FOB. The tube was removed, and another Univent tube<sup>®</sup> was placed without incident. There were no long-term sequelae.

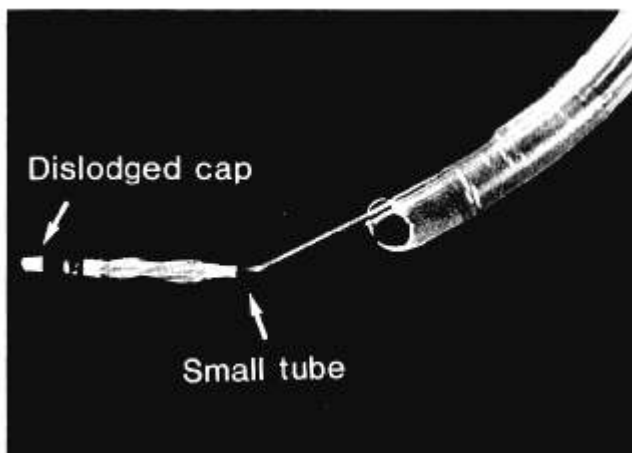


FIG. 1. The tip of the small tube of the Univent<sup>®</sup> tube and the dislodged cap.

We routinely use a FOB for introduction of the small tube into the right or left main bronchus, although the blind insertion of the small tube into either bronchus is reported to be possible.<sup>1</sup> In this case, without the use of an FOB, the foreign body might have produced postoperative pulmonary disease of unknown origin, because the cap is very small and may not be detected in a roentgenogram.

The present case emphasized that a FOB is an important adjunct for detecting trouble associated with one lung ventilation.

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### Diazepam and the Hypercarbic Response to Carbon Dioxide

*To the Editor:*—A recent paper<sup>1</sup> and subsequent correspondence<sup>2,3</sup> has considered the extent to which diazepam may depress the ventilatory response to carbon dioxide.

The negative findings of Bailey *et al.*<sup>1</sup> have been criticized on the grounds that the dose of diazepam (0.1 mg/kg) was insufficient to demonstrate respiratory depression in fit, young volunteers.<sup>2</sup> In attempting to defend this, Bailey *et al.*<sup>3</sup> argue that similar negative effects also occur at higher doses,<sup>4</sup> but they ignored the unequal bioavailability of different injectable preparations of the drug. Power *et al.*<sup>4</sup> used an emulsion of diazepam in soybean oil (Diazemuls) in a dose of 0.15 mg/kg, but there is no information on the nature of the preparations used in other studies.<sup>1,5</sup>

It is known that, in the emulsion form, the bioavailability of diazepam is reduced by up to 30% compared with the propylene glycol preparation (Valium®),<sup>6</sup> and it is, therefore, questionable whether the work of Power *et al.*<sup>4</sup> lends support to the view that higher doses failed to depress the hypercarbic ventilatory response.

There are now four injectable preparations of diazepam available around the world, and it has been shown that they all have different bioavailabilities.<sup>6,7</sup> Consequently, comparison of the pharmacodynamic effects of intravenous diazepam is meaningless without specific information on the nature of the preparations used.

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*In Reply:*—We would like to thank Dr. Fee for bringing to our attention that the bioavailability of different preparations of diazepam may vary. Although, to our knowledge, only one injectable form of diazepam (Valium®,

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Hoffman-LaRoche) is available in the United States, several other preparations exist worldwide. If the data from Fee *et al.*<sup>1</sup> are correct, then the dose of 0.15 mg/kg that Power *et al.*<sup>2</sup> used is equivalent to 0.105 mg/kg of the