withdrawn after a second attempt at intubation was completed using the same endotracheal tube through the same nostril but being certain that the fiberscope was advanced through the distal opening of the tube. To prevent this complication, one must make sure to identify both the side and distal openings of the endotracheal tube and take care to pass the fiberscope through the distal one.

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Simple Charcoal Filter for Closed Circuit Anesthesia

To the Editor.—Activated charcoal avidly adsorbs the potent fluorocarbon agents. A modification of the Engstrom* EDITH™ provides a simple way to introduce charcoal in the inspiratory limb without permanent modification of the anesthesia machine.1

The filter is shown in the figure. The sponge is removed from the EDITH™. A small piece of sponge (about 0.3 cm) is cut off and placed in the narrowed part of the EDITH™. The EDITH™ is then filled with charcoal (Fisher Scientific, 6–14 mesh) to within 2.0 cm of the top. A 1.5–2.0 cm section of sponge is then inserted to contain the charcoal. The filter has little resistance. However, if an excessive quantity of sponge is compressed into the narrow portion, high resistance can result. A 15–22 mm adapter is placed on the distal end. To use the filter, the inspiratory limb of the circuit is momentarily disconnected and the filter interposed between the machine and the circuit. The filter is not connected directly to the endotracheal tube.

The filter holds 30–45 ml of charcoal and will adsorb approximately 1,500 ml of vapor. The filter will reliably awaken two adult patients. The filter does not pose an infection hazard, since it is placed proximal to the bacterial filter. The filter is easily recharged with fresh charcoal by removing the proximal sponge. Used charcoal can be discarded or saved in a closed container for reprocessing.

This simple device allows rapid decreases in inspired concentration whenever required by the clinical situation. While maintaining a closed circuit, rapid emergence is produced without resorting to the use of nitrous oxide.

Richard K. Baumgarten, M.D., Major, MC
Anesthesia and Operative Service
Brooke Army Medical Center
Fort Sam Houston, Texas 78234-6200

REFERENCE

1. Ernst EA: In-circuit charcoal filter to rapidly reduce alveolar anesthetic concentration while maintaining a closed circuit. Anesthesiology 57:349, 1982

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