from a nasal cannula-and-tubing assembly (Airlife®, no.001810, American Pharmacal Co.), then fit a 4.0-mm endotracheal tube adapter. The adapter in turn fit the 15-mm gas outlet of the anesthesia machine. The proximal end of the cannula assembly was firmly applied to the cut-off barrel of a 1-cc syringe. The Luer taper was applied to a catheter placed transtracheally. This assembly readily sustained the 55-psig pressures available at the gas outlet fitting when oxygen was applied at the "flush" valve.

This system is identical to that described by Benumof and Scheller, except that their system used oxygen supply tubing, whereas ours used the tubing from a nasal cannula. We also found that the suction tubing (Bard/Devil no. 3428; 4.8 mm [ID]) used in our operating rooms can sustain these pressures; it can be attached to the common gas outlet via the adapter from an 8.0-mm endotracheal tube and to the transtracheal catheter via a cut-off 3-cc syringe.

In the process of testing these systems, two problems of which the practitioner should be aware emerged. First, the polypropylene endotracheal tube adapter must be applied to the gas outlet very firmly in order to avoid its being blown out of the gas outlet fitting. This is less of a problem with the metal adaptors. Second, some modern machines are equipped with pressure relief valves in the "flush" circuit which prevent their delivering oxygen at the theoretical 55 psig. The Narkomed 2B is equipped at the vaporizer outlet with a relief valve that opens at about 20 psig (1344 torr); the Ohmeda Excel is equipped with a pressure relief valve that opens at 3–7 psig (224–502 torr). Other machines vary in their delivered pressure; in fact, older machines deliver 55 psig oxygen at the gas outlet fitting.

The practitioner therefore should evaluate his or her machine before planning on transtracheal jet ventilation via the gas outlet as an emergency "back-up" system.

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Transtracheal Jet Oxygenator from Capnographic Monitoring Components

To the Editor:—Benumof and Scheller recently recommended that every anesthetizing location have the immediate availability of transtracheal jet ventilation for the rare cannot-ventilate or cannot-intubate emergency.1 I fully support this recommendation and the use of the more efficient systems described in their paper. However, anesthesiologists should be aware that an effective transtracheal jet oxygenator can be made quickly from the capnographic monitoring components in use in many hospitals. The T-piece capnographic adapter with attached sampling tubing is placed in the common gas outlet, and the other end of the sampling tubing is attached via a double male adapter to a catheter inserted in the trachea (fig. 1). By activating the flush valve of the anesthesia machine and intermittently closing the opening of the T-piece at the common gas outlet, effective oxygenation can be produced.

Advantages of this system include Luer lock connections, noncompliant tubing, and immediate availability wherever these capnographic components are used. Disadvantages include the limitation of flow by the small diameter tubing (<4,000 cc/min) and the need for a double male adapter. The anesthesiologist can ensure that a double male adapter will be available by attaching an adapter to the safety pin holding the keys to his or her scrub clothes.

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