but did not continue during maintenance of anesthesia with isoflurane or reappear on recovery supports a role for nitrous oxide, since the effect of nitrous oxide would be most prominent on induction (i.e., before the development of anesthesia with the more soluble isoflurane). Perhaps nitrous oxide produced the seizure and isoflurane subsequently suppressed the convulsive activity. Isoflurane has been shown to possess anticonvulsant activity. Such a hypothesis also is consistent with the absence of convulsive activity on recovery, since isoflurane would be eliminated more slowly than nitrous oxide and thus would continue to suppress any tendency toward nitrous oxide-induced seizures.

The publication by Krenn et al. may be used to support the hypothesis that nitrous oxide rather than isoflurane produced the seizure seen. Krenn et al. administered halothane three times to a 5-year-old boy, twice with nitrous oxide and once without nitrous oxide. Convulsive activity occurred during induction on both occasions when nitrous oxide was given but did not occur when halothane was given alone.

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REFERENCES
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In reply—Dr. Eger makes a valuable and welcome point. We were unaware of the reference by Krenn et al. at the time the manuscript was originally prepared. It certainly does support the possibility that nitrous oxide rather than isoflurane may have produced the seizure observed in our patient.

It is noteworthy that, since publication of the manuscript, I have communicated with an established investigator who years ago was a junior member of a research team that prepared one of the early reports cited in my manuscript. On condition of strict confidentiality of my source, that investigator shared with me his recollection that "two or three" unpremedicated subjects experienced seizures during isoflurane anesthesia but were not reported in the published series. The reason for the failure to report the data was attributed to "the pressure under which we were working."

Information presented in this manner cannot be investigated, therefore, it is of questionable value. Nonetheless, coupled with our finding in one patient, it reinforces the notion that perhaps a new and carefully structured critical investigation is warranted.

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Simple System for Portable Positive End-expiratory Pressure

To the Editor—Positive end-expiratory pressure (PEEP) frequently is required when transporting ventilated patients to and from the intensive care units and operating rooms. The two most common systems used in conjunction with a nonbreathing resuscitation bag are the Magnetic PEEP valves (Instrumentation Industries) and PEEP Accessory (Puritan-Bennett Corporation). These products are internally complex and require testing and calibration prior to use. We have assembled an accurate, lightweight, inexpensive, and simple-to-use system that has been employed successfully in our institution (fig. 1). It avoids the necessity of monitoring PEEP levels in transit and limits the risk of undetected disconnection because all parts are simple in function and within the operator's view.

An expiration diverter (Laerdal Medical Corporation)
A Simple Device for Delivering Bronchodilators into the Anesthesia Circuit

To the Editor—The use of nebulized beta-adrenergic agents given through the anesthetic breathing circuit has been reported to be effective in the treatment of intraoperative bronchospasm.1 Employment of these agents may be hampered by the need for special adaptors required to place the agents in the anesthetic delivery system. We have devised a simple system for the delivery of metaproterenol (Alupent®) into the anesthetic breathing system.

An 18-ga disposable needle (Abbott Hospital Products, North Chicago, Illinois) with a plastic hub is inserted through a standard disposable elbow connector. (fig. 1) The needle hub is trimmed about 3 mm to permit proper function of the inhaler. A 15-ml Alupent Medi-Haler® (Riker Laboratories Inc., Northridge, California) is inserted into the shortened hub; when the Medi-Haler® is depressed, a metered dose of metaproterenol (0.65 mg) is discharged from the stem and through the

connected to a Boehringer PEEP valve. The calibrations available include 2.5, 5, 10, and 15 cmH₂O. When using these valves it is important to ensure that they are maintained in an upright position.

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