

CORRESPONDENCE

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Anesthetic Gas-scavenging in the Laboratory

To the Editor:—Exposure to subanesthetic concentrations of anesthetic gases is a potential hazard in the laboratory environment, where gas-scavenging may not be as readily available as in the operating theater. A search through recent publications of experiments with volatile anesthetics performed in a way that may create pollution problems (bubbling of anesthetic-enriched gas through the experimental solution, superfusion of anesthetic gas over a tissue-containing chamber) revealed that the subject of anesthetic gas-scavenging has been largely ignored. Because countries do not have equally strict laws regulating the use of hazardous materials and not every laboratory has wall suction available, a simple solution to this problem may be of general interest. We describe an inexpensive, simple, and effective system to reduce gross (above trace concentrations) pollution by anesthetic gases in the laboratory environment, which requires nothing but a customized aquarium pump (AP; we used the RENA 301, Germany, approximately \$20 U.S., but any simple pump operating on the same principle can be used), various sizes of polyethylene or soft rubber tubing, and access to outdoor atmosphere within meters of the experimental setup. Care must be taken that anesthetic-containing gas flow does not significantly exceed the pump's capacity. The RENA 301 has a measured pumping capacity of 2.14 l/min; the gas flow through the vaporizer was 2–3 l/min.

Modification of the AP is necessary to create a functional suction port. Simple APs entrain air from within the pump's case through a one-way valve mounted in the base of a bellows, which pumps the air through an internal manifold to a nipple-shaped exhaust port. To use the pump for gas-scavenging, soft rubber tubing must be fitted

into the orifice of the abovementioned one-way valve, sealed with silicone glue, and externalized through a hole drilled in the pump's case. This suction port is connected to the neck of an upside-down plastic funnel, which serves as a hood for the beaker with the gas-containing solution. The AP's exhaust port is connected with appropriate tubing to outdoor atmosphere.

When using this scavenging system, halothane concentrations of up to 8.5% did not cause noticeable contamination of the laboratory. Halothane was undetectable in the lab using a Datex Capnomac Ultima Multi Parameter Airway Gas Analyzer (Helsinki, Finland), whereas 8.5% halothane was measured at the distal end of the exhaust tubing.

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Efficacy and Safety of Cricoid Pressure Needs Scientific Validation

To the Editor:—The letter to the Editor by Kron¹ questioned the validity of the statement by Schwartz *et al.*² that cricoid pressure (the Sellick maneuver³) “may have decreased the incidence” of aspiration as a complication of tracheal intubation in critically ill adults. Kron objected to “mandating a clinically unproved technique as standard of care.” Although no such “mandate” appeared in Schwartz *et al.*'s article, Schwartz and Cohen, in their reply,⁴ stated that “the use of cricoid pressure to protect the airway in patients at risk for aspiration during the induction of anesthesia and intubation of the

trachea is and should remain the standard of care.” The cited substantiation^{3,5–7} for this dictum appears in their original paper and, albeit venerable, is less than scientifically overwhelming. Furthermore, there is no scientific validation for the commonly held belief that “improper application of cricoid pressure might explain any failures” to prevent aspiration.^{7,4}

In conclusion, I urge a scientific reevaluation of the efficacy and safety of the traditional techniques employed for the patient at risk for aspiration during tracheal intubation.