system. In a non-rebreathing system $\dot{V}CO_2$ is the only variable affected and the hypercapnia which occurs is not aggravated by rebreathing.

Secondly, the use of a Bain circuit during a hypermetabolic state such as an MH reaction is limited by the maximum oxygen flow rate available from the anaesthetic machine. Even with a fresh gas flow of $12\text{ L}\cdot\text{min}^{-1}$ we did not achieve normocapnia as we discovered when we inserted the capnograph into our circuit. Of interest, prior to modifying this machine, the oxygen flowmeter allowed a flow of only $6\text{ L}\cdot\text{min}^{-1}$.

Finally, we feel that protocols for anaesthetic management of malignant hyperthermia should emphasize the problem of excessive CO_2 production during an MH reaction and gas-free machines should avoid T-piece circuits. The present protocol of the Anaesthesia Section of the Ontario Medical Association⁷ suggests "all new tubing, plus fresh soda lime where being used." We feel that a circle system plus fresh soda lime should be recommended as the circuit of choice and that a T-piece system (such as a Bain circuit) or a circuit incorporating only a non-rebreathing valve should not be used unless very high flows of oxygen can be provided.

Kent H. Rogers MD FRCP
D. Keith Rose MD FRCP
Robert J. Byrick MD FRCP
Department of Anaesthesia,
St. Michael's Hospital, 30 Bond Street,
Toronto, Ontario,
M5B 1W8

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Increased resistance to breathing: potentially lethal hazard across a coaxial circuit-connector coupling

To the Editor:

We wish to acknowledge Drs. Branson and Lam's¹ recent findings related to the use of "high shoulder" ET tube connectors and the CPRAM™ coaxial breathing circuit.

The design of the CPRAM™ circuit was intended to forego the use of this type of connector, also known as "low dead space," with its extended tip design. It has been recognized that these connectors in combination with any fresh gas adapter which has an extended tip design, could cause increased resistance to breathing.

In a US Food and Drug Administration Safety Alert, dated September 2, 1983, this potential hazard was addressed.² A mailing to various hospital departments as well as publication in several journals was done.

In support of this, we have always included a "Warning" in our product labelling regarding this matter. This warning reads as follows: *Do not use with endotracheal tube, tracheostomy tube or airway connectors/adapters (including gas sampling) which have small internal orifices or "low dead space." Occlusion of the fresh gas flow may result.*

As the sole manufacturer of the CPRAM™ circuit, we feel a strong obligation to the clinician to inform them of any potential hazard.

We again, appreciate the concern of Drs. Branson and Lam.

Paul E. Dryden
President
Dryden Corporation
10640 East 59th Street
PO Box 36038
Indianapolis, Indiana 46236
U.S.A.

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- 1 Branson R, Lam AM. Increased resistance to breathing: a potentially lethal hazard across a coaxial circuit-connector coupling. *Can Anaesth Soc J*. 1987; 34: S90-S91.
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