Vaporizer Overflow a Preventable Hazard

To the Editor:—Sharrock and Gabel\(^1\) described a death caused by halothane overdose due to a mechanical fault in an anesthesia machine equipped with a side-arm Vernitrol\(^\circ\) vaporizer. The authors believe that if the machine had not been effectively scavenged, they might have been able to recognize the problem of liquid halothane delivered from the vaporizer to the patient breathing system. The equipment used suffers from an inherent design deficiency, in that when by coincidence a high flow of gas is passed through the side-arm Vernitrol vaporizer filled to the maximum level, liquid anesthetic may be displaced from the reservoir and into the patient breathing system of the anesthesia machine. This hazard was reported nine years previously from the same city.\(^2\)

If the anesthetists had considered gross overdose of anesthetic owing to delivery of liquid volatile anesthetic as a possible cause of the dysrhythmias, then disconnection of the scavenging transfer hose from the scavenged pop-off valve would have verified the cause of the problem. The difficulty is to keep in mind the ever-present possibility of equipment failure as the cause of unexpected happenings. Confirmation of the coincidental faults and subsequent patient condition is possible within the design of a proper scavenging system. The correct diagnosis of the problem was made by visual recognition of the abnormally located rotameter bobbin and the “missing” halothane. There also existed an audible warning, the “gurgling” sound as the halothane was being displaced from the reservoir downstream into the machine. The authors’ emphasis on the scavenging system diverts one’s attention from the basic cause, a design fault in the vaporizer. It is hoped that the manufacturer of this vaporizer will make known to every individual and institutional owner of such equipment that a retrofit device is available at a reasonable cost to correct the design fault and obviate the hazard.

Leslie Rendell-Baker, M.D.
Professor and Chairman

Ralph A. Milliken, M.D., M.B.A.
Associate Clinical Professor
Department of Anesthesiology
Mount Sinai School of Medicine
Mount Sinai Medical Center
One Gustave L. Levy Place
New York, New York 10029

REFERENCES


(Accepted for publication November 21, 1978."

R. P. Husemeyer, M.B., M.R.C.O.G.
Member of Clinical Scientific Staff

D. C. White, M.B., F.F.A.R.C.S.
Consultant Anesthetist