References

1 American Society of Anesthesiologists Task Force on Management of the Difficult Airway. Practice Guidelines for Management of the Difficult Airway. Anesthesiology 1993; 78: 597–602.

2 *Fisher JA.* A "last ditch" airway. Can Anaesth Soc J 1979; 26: 225–30.

Cardiac ischemia and desflurane

The four fatalities described by Murray and Luney[1] might represent a sympathetically-mediated interaction between desflurane and beta adrenergic inotropic drugs. They also remind us that increasing myocardial oxygen consumption in coronary artery disease patients may be hazardous. Unfortunately, the cardiac outputs/hemodynamic profiles prior to instituting inotropic agents were not reported.

In retrospect, although these operations were not cavity/vascular, a cardiac epidemiologist might have suggested more extensive preoperative investigation to assess cardiac ischemic risk because of the proposed lengths of the surgery. The post-mortem examination in patient #2 indicates recent plaque disruption in addition to extensive occlusive disease. If present, the former may have been elucidated preoperatively by angiography, and the latter by exercise/thallium tests.

This report is valuable because of the high prevalence of coronary artery disease and the common use of desflurane, a newer anesthetic, in a wide variety of patients. Even in coronary artery bypass operations, there is sometimes pressure to begin inotropic medicines prior to instituting cardiopulmonary bypass. The report warns that this may be hazardous during desflurane anesthesia.

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References

1 *Murray SM, Luney SR.* Fatal cardiac ischaemia associated with prolonged desflurance anaesthesia and administration of exogenous catecholamines. Can J Anaesth 1998; 45: 1200–2.

More on equipment failure

To the Editor:

In Dr. Jolly's recent letter reporting the failure of a Baxter manual fluid pump,[1] the reply from Baxter indicated that 50 samples were all tested successfully. However, the reply failed to indicate the peak pressures generated during testing. Anyone with an understanding of materials engineering, however, would regard the maximum pressure the unit can handle before bursting to be an obvious safety parameter, one that would be subject to study and indicated, for example, on the package labeling.

I would suggest that sensible clinical design calls for the unit to tolerate internal pressures of 1000 mmHg. My reasoning is as follows. From clinical experience, I know that during some high-blood loss operations (such as liver transplants) it may be necessary to utilize hand-pump augmentation of blood or fluid bags with wrap-around pressure bag devices inflated to 300 or even 400 mmHg in order to keep up with the torrential blood loss. I would estimate that good strong hand-pumping on top of a ("red-line-region") baseline pressure of 400 mmHg, could add another 300 mmHg or more. Adding a small margin of safety brings us to 1000 mmHg.

From previous discussions with Baxter with regard to experiences with blood warmers bursting along a defective seam (during a liver transplant and in other cases), Baxter does not appear to have a formal pressure bursting specification that applies to all of their *iv* supplies.

Reference:

1 *Jolly DJ.* Manual pump failure. Can J Anesth 1999; 46: 201–2.

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REPLY:

The functional testing that is done on our Y-Type Blood/Solution Set with Pressure Pump, product code 2C7613, to qualify the Hand Pump is 30 psi, which is equivalent to 1552.5 mmHg. In addition, we conduct a 10 ± 1 psi (517.5 ± 51.75 mmHg) air pressure test on incoming hand pump lots to observe for leakage due to inadequate assembly or materials. Lastly, we air pressure test the finished sets at 8 psi, (414 mmHg).

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