

Correspondence

Factitious readings from anaesthetic agent monitors

To the Editor:

The use of anaesthetic agent monitoring as a component of airway gas monitoring has recently become commonplace in some hospitals. In principle, anaesthetic agent monitoring may alert the anaesthetist to possible differences between intended and obtained anaesthetic concentrations, as well as provide information regarding anaesthetic agent uptake and release.

I would like to report two cases of factitious readings from such a monitor. In the first case, shortly after intubation and hook-up to a Puritan Bennett PB254 Airway Gas Monitor (set for isoflurane mode) readings of approximately one per cent isoflurane were obtained for both inspiratory and expiratory readings, despite the fact that the vaporizer had not yet been turned on. In the second case, no anaesthetic agent had been selected, as the monitor was used to assess respiration in a heavily sedated patient whose procedure was being done under local anaesthesia. In this case airway gas sampling was achieved using a nasal catheter. Shortly after the monitor was connected, the front panel anaesthetic agent selection lights flashed and an audio alarm sounded, indicating that the monitor sensed the presence of an anaesthetic agent and was requesting that the operator select the agent used. To silence the alarm it was necessary to select an agent; halothane was chosen arbitrarily, even though no vaporizers were on. A reading of approximately 6% halothane was then obtained for both inspiratory and expiratory readings.

In both cases the anaesthetic machines had been checked preoperatively and no fault was found. As well, when the unexpected anaesthetic concentration readings were obtained, no evidence of malfunctioning vaporizers could be found.

However, in both cases when the anaesthetic circuits were opened and smelled, olfactory evidence of the presence of isopropyl alcohol was found. Inquiries quickly revealed that a solution containing 70 per cent isopropyl alcohol was used to clean the anaesthetic circuit components. Evidently, residual isopropyl alcohol in recently cleaned anaesthetic circuitry can cause factitious anaesthetic agent concentration readings.

Subsequent discussions with Puritan Bennett Limited concerning this matter revealed the following informa-

tion. The problem is known to them, and is a characteristic believed to be common to all anaesthetic agent monitors which use infrared spectrophotometric methods, not just the Puritan Bennett unit. Not only will evaporated alcohol or other organic vapours affect the readings, but readings from patients with alcohol in their blood will be higher than the actual anaesthetic agent concentration.

D.J. Doyle MD PHD FRCPC
Department of Anaesthesia
Toronto General Hospital
200 Elizabeth Street
Toronto, Ontario M5G 2C4

Safe vaporizers

To the Editor:

Anaesthetic vaporizers may, inadvertently, be left "on" during an anaesthetic, with disastrous consequences for the patient.

The current Canadian Standards Association Standard applicable to vaporizers states that the control dial should be marked to indicate vapour concentration in volume per cent and the OFF position, with a lock in the OFF



FIGURE