

Spontaneous shutoff of desflurane vaporizer

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Received: 14 March 2013 / Accepted: 25 March 2013 / Published online: 7 April 2013
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Keywords Vaporizer · Desflurane · Failure · Equipment

To the Editor:

We would like to report the intraoperative failure of a desflurane vaporizer. The incident occurred as a 57-year-old man underwent parathyroid surgery. After induction and intubation, anesthesia was maintained with 5 % inhaled desflurane, using a Tec 6 Plus vaporizer (GE Healthcare Japan Co., Tokyo, Japan), via a semiclosed circuit with a 3 l/min fresh gas flow. Approximately 7 min into the case, the “no output” vaporizer alarm sounded and the desflurane concentration in the anesthesia circuit began to fall. We immediately turned off the vaporizer. After several seconds, the vaporizer automatically reset but within several minutes, the “no output” error occurred again. The surgery was then completed using sevoflurane, without assessing the depth of anesthesia. The patient emerged from anesthesia uneventfully, with no recollection of the intraoperative events.

We purchased the vaporizer 2 months prior to the incident; it was used almost every day for 2 months. Although clinical engineers and anesthesiologists maintain anesthetic machines and circuits, vaporizers are not inspected usually in our operating rooms. According to the manufacturer’s technical department, 10 incidences of initial failure have been confirmed in 431 products since the vaporizer’s 2011 release in Japan. The vaporizer was

exchanged at no charge following this initial failure. Afterward, the manufacturer reported to us that the failure of an electronic pressure transducer caused this incident. They recommended the immediate use of alternative anesthetics if the “no output” error recurred.

Reports of spontaneous shutoff during surgery of a correctly mounted desflurane vaporizer have not previously been published [1–3]. Unlike conventional mechanical vaporizers, the desflurane vaporizer has sophisticated electronic components. As a fail-safe, it completely halts agent output if an electronic failure occurs. Since the washout for desflurane is more rapid than that for other inhalation agents, patients emerge from anesthesia soon after shutoff of the vaporizer. The incidence of initial failure reported by the manufacturer seems relatively high. This case serves to emphasize the importance of fully understanding the features of equipment that is in frequent use [4].

Conflict of interest None.

References

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