Correspondence

Paroxystic systemic hypertension during inhalation induction with sevoflurane 8%

To the Editor:

The depth of anesthesia may be difficult to evaluate during mask induction with sevoflurane 8%. This may have major consequences in hypertensive patients. A paroxystic systemic hypertension was observed during single breath vital capacity induction of anesthesia with sevoflurane in a previously equilibrated hypertensive patient. This hypertension occurred despite two and a half minutes of inhalation of sevoflurane 8% in N_2O 50% (Figure 1A). Just before this hypertensive crisis, bispectral index value reached 65 and end-tidal concentration of sevoflurane 5.7%. Hypertension occurred at the time of insertion of a Guedel airway and lasted 3.5 min (peak arterial pressure: 337/201 min Hg) (Figures 1B-C). This was controlled by 20 $\mu g \cdot kg^{-1}$ alfentanil but was followed by hypotension and hypoxemia related to vasogenic pulmonary edema. The exact causes of such a hypertensive crisis remains to be elucidated. An increase in sympathetic reactivity in hypertensive patients as well as a nociceptive stimulus during light anesthesia may have triggered this hypertension already observed during anesthesia with sevoflurane.[1–3] A transient increase in sympathetic reactivity during induction with high concentrations of sevoflurane has been suggested by previous studies whereas a decrease in sympathetic reactivity has been measured during a progressive increase in sevoflurane up to 3% after propofol induction.[4–7] This adverse effect questions the use of sevoflurane inhalation without opioids for induction

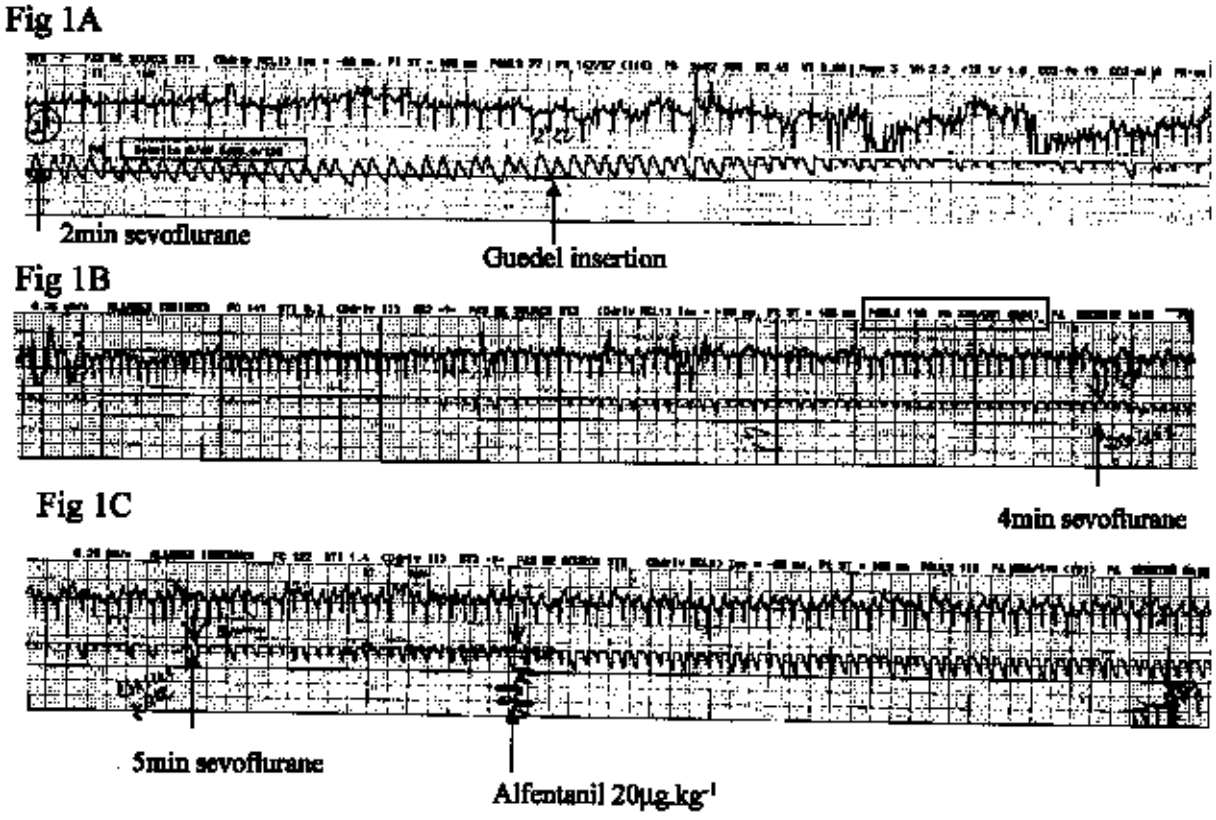

FIGURE 1 Continuous recording of arterial pressure and heart rate at the start of hypertensive crisis (Figure 1A), at its maximum (Figure 1B) and at the beginning of its decline when alfentanil was injected (Figure 1C).

of anesthesia in hypertensive patients when considering the poor value of the bispectral index, of end-tidal concentration of sevoflurane or its duration of administration in predicting the depth of anesthesia and the hemodynamic reaction to nociceptive stimuli.

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References

1 *Low JM, Harvey JT, Prys-Roberts C, Dagnino J.* Studies of anaesthesia in relation to hypertension VII: Adrenergic responses to laryngoscopy. Br J Anaesth 1986; 58: 471–7.
2 *Hickey S, Cameron E, Asbury AJ.* Cardiovascular response to insertion of Brain's laryngeal mask. Anaesthesia 1990; 45: 629–33.
3 *Iwasaki H, Omote T, Hamada I, Nakamura I, Namiki A.* Acute pulmonary edema in five patients undergoing sevoflurane anesthesia. (Japanese) Masui 1992; 41: 1183–7.
4 *Ebert TJ, Muzi M, Lopatka CW.* Neurocirculatory responses to sevoflurane in humans. A comparison to desflurane. Anesthesiology 1995; 83: 88–95.
5 *Yli-Hankala A, Randell T, Seppälä T, Lindgren L.* Increases in hemodynamic variables and catecholamine levels after rapid increase in sevoflurane concentration. Anesthesiology 1993; 78: 266–71.
6 *Hall JE, Ebert TJ, Harmer M.* Sevoflurane adult gaseous induction: an evaluation of stage II and its haemodynamic consequences. Br J Anaesth 1999; 82: A452.
7 *Constant I, Dubois MC, Piat V, Murat I.* Heart rate and blood pressure variability during halothane or sevoflurane anesthesia in children. Anesthesiology 1998; 89: A1253.

Transthoracic echocardiography pre-, intra-, and postoperatively

To the Editor:
We fully agree with Hadiç and co-authors concerning the use of transthoracic echocardiography (TTE) in the perioperative period.[1] In addition to its use pre- and postoperatively, we use TTE as an intraoperative noninvasive hemodynamic monitor in patients with severe cardiac disease undergoing surgical procedures in regional anesthesia. Thus, our indications for perioperative use of TTE include: 1) preoperative TTE to evaluate unclear cardiac status, e.g. clinical suspicions of aortic stenosis, in patients needing urgent surgery but no immediately available cardiologist-echocardiographer, 2) intraoperative TTE to monitor patients with severe cardiac disease undergoing surgery in regional anesthesia, and 3) postoperative TTE in patients with severe hemodynamic instability occurring after extubation. The use of TTE by anesthesiologists prevents unnecessary delays of surgery, allows extended noninvasive hemodynamic monitoring during regional anesthesia, and facilitates postoperative patient care. To obtain appropriate information from TTE, anesthesiologists-echocardiographers performing TTE need formal training in the transthoracic echocardiographic approach.

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Reference

1 *Hadiç A, Vloka JD, Koorn R, Thys DM.* Transthoracic echocardiography in perioperative medicine (Letter). Can J Anesth 1999; 46: 616.

Axillary blockade by the targeted method. Added benefit?

To the Editor:
We wish to comment on the article by Korscielniak-Nielsen *et al.*[1] regarding upper limb brachial plexus blockade by the targeted approach. First, the authors claim that this approach reduces total anesthetic time compared with the single injection approach because block supplementation for the single-injection recipients was time-consuming. However, the success rates for complete blockade in the single-injection group was only 54%. Even when the author excludes those supplementary blocks unnecessary for surgery, success increased to only 65%. This is a high failure rate. Most studies produce successful blockade in 85-100% of subjects[2–6] and the single-injection technique is faster. Second, 22% of the targeted group experienced tourniquet pain, compared with 4% in the single-injection group. As brachial plexus blockade is the regional technique of choice for prolonged surgery, tourniquet pain to this degree may become a limiting factor when using the targeted approach. Third, the author states that the