- 5 Tornetta FJ. Clinical studies with the new anti-emetic metoclopramide. *Anesth Analg* 1969; 48: 198-204.
- 6 Diamond MJ, Keeri-Szanto M. Reduction of post-operative vomiting by preoperative administration of oral Metoclopramide. *Can Anaesth Soc J* 1980; 27: 36-8.
- 7 Assaf RAE, Clarke RSJ, Dundee JW, Samuel IO. Studies of the drugs given before anaesthesia XXIV: Metoclopramide with morphine and pethidine. *Br J Anaesth* 1974; 46: 514-9.
- 8 Ellis FR, Spence AA. Clinical trial of metoclopramide as an antiemetic in anaesthesia. *Anaesthesia* 1970; 25: 368-71.
- 9 Shah ZP, Wilson J. An evaluation of metoclopramide as an antiemetic in minor gynaecological surgery. *Br J Anaesth* 1972; 44: 865-7.
- 10 Korttila K, Kauste A, Auvinen J. Comparison of domperidone and metoclopramide in the prevention and treatment of nausea and vomiting after balanced general anaesthesia. *Anesth Analg* 1979; 58: 396-400.
- 11 Kris MG, Tyson LB, Gralla RJ et al. Extrapyramidal reactions with high dose metoclopramide. *N Engl J Med* 1983; 309: 433.

three minutes, the child again reacted to the needle and then started coughing on the endotracheal tube. The smell of halothane from the fresh gas line was barely discernable.

Since the child had been satisfactorily anaesthetized initially it was assumed that a fault had developed in the vapourizer and that this had produced the audible click. The anaesthetic was completed uneventfully using methoxyflurane.

When the Fluotec Mark II vapourizer was examined after the case, it was found that the circlip had broken, cutting off the fresh gas flow through the vapourizer.

J.R. Maltby MB FRCP(C)
Department of Anaesthesia
Foothills Hospital at the University of Calgary
Calgary, Alberta

REFERENCE

- 1 Lamberty JM, Lerman J. Intraoperative failure of a Fluotec Mark II vapourizer. *Can Anaesth Soc J* 1984; 31: 687-9.

Intraoperative failure of a Fluotec Mark II vapourizer

To the Editor:

The description by Lamberty and Lerman¹ of the intraoperative breaking of the internal circlip of a Fluotec Mark II vapourizer is most interesting. A similar case occurred in our hospital in 1970.

A two-year-old boy was scheduled for pneumoencephalogram under general anaesthesia. An inhalation induction was performed with nitrous oxide and halothane using a Jackson Rees circuit. Tracheal intubation was easy and did not cause coughing. Nitrous oxide was discontinued and the halothane concentration reduced from four to two per cent. A distinct click was heard from the direction of the anaesthetic machine. There was no obvious cause for this and the child was positioned for lumbar puncture. When the radiologist attempted the lumbar puncture the child reacted to the needle. The vapourizer dial was returned to four per cent but, after inhaling this higher concentration for two to

Nitrous oxide analgesia and the endogenous opioid system

To the Editor:

We read with interest the review by Milne and Jhamandas concerning new therapeutic roles for naloxone.¹ We would like to extend the scope of their article by referring to some of our own work using nitrous oxide.

Firstly, as we have noticed in many cases, as with this review,¹ anaesthesia and analgesia are lumped together, without any clear differentiation being made between these very different states. This probably adds to the controversy regarding the opioid effects of analgesic concentrations of nitrous oxide. During administration of nitrous oxide at analgesic concentration, the level of consciousness of the subject is such that full contact with the environment and co-operation with the investigator