## CORRESPONDENCE

Anesthesiology
79:1150, 1993


*In Reply:*—Yemen is correct that standard criteria and blinding are important in comparing the effect of treatment on the time of discharge. The decision to discharge patients from the surgical wards was made by the attending surgeon. All of the medical staff taking care of the patients were scrupulously blinded to the analgesia regimen throughout the hospital stay. The discharge criteria were those commonly used for all the patients on surgical wards.

In response to de Leon-Casasola and Lema, we have explained in the Discussion of our paper why we chose the doses of bupivacaine and morphine. The risk with low doses of either parenteral or epidural morphine is insufficient relief of pain, and the potential risk of higher doses is to increase the number of severe episodes of hemoglobin oxygen desaturation.[1] Because we combined bupivacaine and morphine and because all of our patients were on regular surgical wards, we used a low dose of epidural morphine (0.25 mg/h) that has been reported to be safe.[1] One of the inclusion criteria was elective major abdominal surgery for cancer *via* a bisubcostal or a large midline incision extending into the upper part of the abdomen for all patients in the study. The different types of surgery were: hepatectomy, 22%; gastrectomy, 15%; pancreatectomy, 7%; colectomy, 21%; rectal surgery for cancer, 19%; cystectomy with ileoplasty, 7%; and laparotomy, 9%. Therefore, it is difficult to compare our results to those of de Leon-Casasola *et al.*,[2] which were obtained in patients having undergone radical hysterectomy with lymph node dissection. The longest mean length of hospital stay in de Leon-Casasola *et al.*'s study was 14 days, which is not very different from the 18 days in our study, given that the types of surgery were different.

**Docteur Christian Jayr**
Department d'Anesthesie–Analgesie–Reanimation
Institut Gustave-Roussy
rue Camille Desmoulins
94805 Villejuif, Cedex, France

## References

1. Shafer AL, Donnelly AJ: Management of postoperative pain by continuous epidural infusion of analgesics. Clin Pharm 10:745–764, 1991

2. de Leon-Casasola OA, Parker B, Myers DP, Bacon DR, Peppriell J, Harrison P, Kent E, Rempel J, Lema MJ: Experience using epidural bupivacaine–morphine infusions for postoperative analgesia in 2,843 cancer surgical patients (abstract). ANESTHESIOLOGY 77:A856, 1992

*(Accepted for publication August 11, 1993.)*

Anesthesiology
79:1150–1151, 1993


# Spurious Anesthesia Alarm in an Anesthetized Patient

*To the Editor:*—A 46-yr-old man entered the hospital for full-month dental extractions under general nasotracheal anesthesia. The patient was healthy except for a smoking history of 20 pack-yr and a hearing impediment. Fentanyl and midazolam were used for premedication. Monitoring consisted of an electrocardiogram and a skin temperature probe *via* a Protocol Systems, Inc. PROPAQ 106EL and blood pressure, pulse oximetry, and capnography *via* a North American Drager NARKOMED 3 anesthesia machine. Nasotracheal intubation was performed after an oxygenation, thiopental, and succinylcholine induction sequence. Ventilation was mechanically controlled and anesthesia maintained with nitrous oxide, oxygen, and isoflurane.

Approximately 3 min after induction, a loud, piercing, constant, high-pitched sound was heard. The patient's blood pressure at this time was 130/74 mmHg; the hemoglobin oxygen saturation was 99%; and the capnography tracing (end-tidal carbon dioxide 36 mmHg) and ventilatory pressures and volumes were normal. The PROPAQ electrocardiogram revealed a normal sinus rhythm with a rate of 76 beats/min, and the skin temperature was 35.3° C. No visual alarms were seen activated on either the PROPAQ or the Drager machine. The sound was consistent in intensity and character with the audio alarm from the PROPAQ, and this machine was shut off for a few seconds without cessation of the alarm noise. The Drager machine audio alarms are pulsatile. It then was noted that a hearing aid, which the patient had worn to the operating room, had fallen out of the patient's ear and was the source of the audio alarm. The hearing aid, a WIDEX #A12197948, was turned off, and the alarm sound ceased.

The noise was produced *via* feedback resulting from the proximity of the hearing aid microphone and the earpiece speaker[1] (the same mechanism that creates a loud high-pitched tone in an auditorium if the amplifier is not properly adjusted). Dentists ask patients to turn off hearing aids when drilling intraorally to prevent auditory damage due to acoustic feedback.* Auditory communication was necessary with this patient and was the reason the patient wore the hearing aid to the operating room. We recommend turning off hearing aids after anesthesia induction to avoid the above problem.

* Kovalich PJ, Karras SC, Colton TS: Personal communication, 1993.