J Anesth (2005) 19:323–324
DOI 10.1007/s00540-005-0337-x

Journal of
Anesthesia

Immediate postoperative refeeding in orthopedic surgery is safe

Thomas Rimmelé[1], Emmanuel Combourieu[2], Pierre-François Wey[2], Emmanuel Boselli[1], Bernard Allaouchiche[1], Dominique Chassard[1], and Jacques Escarment[2]

[1] Anesthesiology and Critical Care Medicine, Edouard Herriot Hospital, 5 Place d'Arsonval, 69003 Lyon, France
[2] Anesthesiology and Critical Care Medicine, Desgenettes Teaching Military Hospital, Lyon, France

Abstract
The purpose of this retrospective study was to investigate the morbidity of immediate postoperative refeeding after orthopedic surgery. We included all the 1077 patients who underwent orthopedic surgery between January and December 2003 at our military teaching hospital. General anesthesia was performed in 37% of the patients ($n = 398$), 24% ($n = 259$) had combined general and regional anesthesia, and 39% ($n = 420$) had isolated regional anesthesia (spinal anesthesia and/or peripheral regional anesthesia). After surgery, each patient was allowed free access to solid and liquid food immediately after discharge from the postanesthetic care unit. Although no systematic nausea and vomiting prophylaxis was performed, only 7% ($n = 75$) of the patients had postoperative nausea and vomiting during the first 48 h. Moreover, neither deglutition trouble nor aspiration syndrome was observed during that period. Our results suggest that immediate postoperative refeeding after orthopedic surgery is safe, does not increase postoperative nausea and vomiting, and probably increases the comfort of patients.

Key words Early oral intake · Postoperative nausea and vomiting · Regional anesthesia

Introduction

After nonabdominal surgery, postoperative refeeding is generally allowed by anesthesiologists about 4 to 6 h after the patient is discharged from the postanesthetic care unit. With this practice, anesthesiologists aim at decreasing the aspiration risk linked to postoperative deglutition trouble. However, this common practice is not based on recommendations, and the medical literature is hopelessly blank concerning this topic. We conducted a retrospective, single-center survey on all the patients who underwent orthopedic surgery between January and December 2003 at our teaching military hospital. After surgery, all patients were permitted to drink and eat immediately after discharge from the postanesthetic care unit when they returned to their hospital rooms. Postoperative nausea and vomiting, deglutition trouble, and complications linked to regurgitation and aspiration were recorded during the first 48 h.

Address correspondence to: T. Rimmelé
Received: November 22, 2004 / Accepted: May 23, 2005

Patients and methods

One thousand and seventy-seven patients, American Society of Anesthesiologists (ASA) physical status I–IV, were included in the study. The patient population was composed of 59% men ($n = 635$) and 41% women ($n = 442$), with a mean ± SD age of 49 ± 20 years (range, 14 to 93 years). General anesthesia was performed in 37% of the patients ($n = 398$), 24% ($n = 259$) had combined general and regional anesthesia, 8% ($n = 86$) had isolated spinal anesthesia, 3% ($n = 32$) had combined spinal and peripheral block anesthesia, and 28% ($n = 302$) had peripheral regional anesthesia. The types of orthopedic surgery included total and partial hip replacement, total knee replacement, shoulder surgery, carpal tunnel syndrome surgery, upper and lower limb fractures and luxations, disk hernia, hand microsurgery, orthopedic material ablations, arthroscopies, and ligamentoplasties. Peripheral block anesthesia included continuous and single-shot brachial plexus blocks, sciatic nerve blocks, and lumbar plexus blocks. When general anesthesia was carried out, propofol was used for induction and sevoflurane was used for maintenance of anesthesia. Remifentanil, sufentanil, or alfentanil were used as opioids. No nitrous oxide was used during anesthesia management. No systematic nausea and vomiting prophylaxis was performed. Only those patients ($n = 54$) who reported an antecedent episode of postoperative nausea and vomiting received

antiemetic prophylaxis before the induction of anesthesia; this consisted of intravenous droperidol 1 mg and intravenous dexamethasone 10 mg. After surgery, discharge from the postanesthetic care unit was allowed when the criteria of postoperative recovery of Aldrete and Kroulik [1] were achieved. When the patients arrived in their hospital rooms, all patients immediately had unrestricted free access to solid and liquid food, and they could start drinking and eating when they wanted. Postoperative nausea and vomiting and deglutition trouble were recorded during the first 48 h, by a nurse who regularly asked the patients about these topics.

Results

The mean ± SD time of discharge from the postanesthetic care unit was 89 ± 74 min. An incidence of only 7% ($n = 75$, consisting of $n = 46$ for general anesthesia, $n = 24$ for combined general and regional anesthesia, and $n = 5$ for isolated regional anesthesia) of postoperative nausea and vomiting was recorded during the first 48 h. Neither deglutition trouble nor aspiration syndrome was observed during all that period.

Discussion

The medical literature is very poor concerning data on early postoperative refeeding after surgery. Indeed, and in contrast to preoperative fasting, optimal fasting time after surgery has never been extensively studied [2]. However, a few studies have reported interesting results with early oral feeding after surgery as an important determinant in improving postoperative outcome and decreasing hospital stay after surgery [3,4]. Guedj et al. [5] were probably the first to demonstrate, in patients after cesarean section performed under epidural anesthesia, that no significant differences were seen, between those who were permitted immediate postoperative refeeding and those who fasted for 24 h, in the incidence of nausea and the time to first gas emission and defecation. The first prospective, randomized study concerning the tolerability of early oral feeding after lower extremity surgery carried out under regional anesthesia was performed by Hoshi et al. [2] a few years ago. The results of this Japanese study suggest that immediate postoperative refeeding accelerates the recovery of bowel function after surgery. Overall, these authors found that early oral intake was well tolerated in patients undergoing minor surgical procedures under spinal anesthesia.

In our survey, conducted in a very large number of patients, the postoperative nausea and vomiting rate was very low compared to data reported in the medical literature, in which one-third of patients who underwent surgery experienced postoperative nausea and vomiting [6]. Our low rate can be partially explained by the fact that 39% our patients had isolated regional anesthesia ($n = 420$). Moreover, nitrous oxide was never used, and the 5% of patients who reported an antecedent episode of postoperative nausea and vomiting received antiemetic prophylaxis with droperidol and dexamethasone [7].

Absolutely no complication linked to postoperative deglutition trouble, regurgitation, or aspiration was observed. To the best of our knowledge, this is the first survey including both regional and general anesthesia which suggests that immediate refeeding after orthopedic surgery is safe and does not increase postoperative nausea and vomiting. Therefore, this immediate refeeding may also increase the comfort of patients.

To conclude, this concept of immediate postoperative refeeding is particularly interesting, because it is in contradiction with postoperative clinical habits which consist of waiting a few hours before allowing refeeding after surgery, even if it is nonabdominal surgery. Therefore, this study calls this old dogma into question, and may be at the origin of a modification of the practice if our findings are confirmed by other trials.

References

1. Aldrete JA, Kroulik D (1970) A postanesthetic recovery score. Anesth Analg 49:924–934
2. Hoshi T, Yamashita S, Tanaka M, Motokawa K, Toyooka H (1999) Early oral intake after arthroscopic surgery under spinal anesthesia. J Anesth 13:205–208
3. Bardram L, Funch JP, Jensen P, Crawford ME, Kehlet H (1995) Recovery after laparoscopic colonic surgery with epidural analgesia, and early oral nutrition and mobilisation. Lancet 345:763–764
4. Akyol MU, Ozdem C, Celikkanat S (1995) Early oral feeding after total laryngectomy. Ear Nose Throat J 74:28–30
5. Guedj P, Eldor J, Stark M (1991) Immediate postoperative oral hydratation after caesarean section. Asia Oceania J Obstet Gynaecol 17:125–129
6. Apfel CC, Korttila K, Abdalla M, Kerger H, Turan A, Vedder I, Zernak C, Danner K, Jokela R, Pocock SJ, Trenkler S, Kredel M, Biedler A, Sessler DI, Roewer N; IMPACT Investigators (2004) A factorial trial of six interventions for the prevention of postoperative nausea and vomiting. N Engl J Med 350:2441–2451
7. Gan TJ, Meyer T, Apfel CC, Chung F, Davis PJ, Eubanks S, Kovac A, Philip BK, Sessler DI, Temo J, Tramèr MR, Watcha M (2003) Consensus guidelines for managing postoperative nausea and vomiting. Anesth Analg 97:62–71