Correspondence

Epidural combined with propofol anesthesia does not suppress the hyperglycemic response to abdominal surgery

To the Editor:

In light of the results of most recent studies showing better survival of surgical patients with tight glycemic control the preservation of intraoperative normoglycemia gains clinical relevance.¹ Epidural anesthesia in the absence of general anesthesia has long been recognized to suppress the hyperglycemic and endocrine responses to pelvic surgery.² The failure of epidural anesthesia combined with inhalation anesthesia to maintain glucose homeostasis during major abdominal surgery was traditionally ascribed to incomplete inhibition of the counterregulatory endocrine response.³ Studies demonstrating that inhaled agents per se, in contrast to *iv* anesthetics such as propofol,⁴ provoke hyperglycemia, however, indicate that the use of inhaled anesthesia may be, at least in part, responsible.⁵ We thus speculated that combining epidural anesthesia with *iv* propofol anesthesia would prevent the hyperglycemic response to colorectal surgery.

After obtaining patient consent we studied six consecutive ASA II patients (three male, three female, mean age 69 ± 12 yr) who underwent resection of colorectal cancer (three hemicolectomies, three sigmoid resections) by the same surgeon (S.M.). An epidural catheter was inserted immediately before the operation between T10 and T12. Afferent neural blockade was established with bupivacaine 0.5% to achieve a bilateral sensory block from T4 to L2, and epidural anesthesia was maintained during the operation by boluses of bupivacaine 0.25%. General anesthesia was induced with propofol administered at a dose to abolish the eye reflex. Tracheal intubation was facilitated by rocuronium $0.6 \text{ mg}\cdot\text{kg}^{-1}$ *iv* and the lungs were ventilated to normocapnia with oxygen-enriched air. General anesthesia was maintained by continuous infusion of propofol at 6 to $10 \text{ mg}\cdot\text{kg}^{-1}\cdot\text{hr}^{-1}$. Normal saline 0.9% was infused at a rate of $6 \text{ mL}\cdot\text{kg}^{-1}\cdot\text{hr}^{-1}$. Blood losses were replaced by normal saline in a ratio of 3:1. Phenylephrine boluses ($100 \mu\text{g}$ *iv*) were given to maintain a mean arterial pressure above 60 mmHg. Arterial blood glucose concentrations were measured before anesthesia, 80 min and 120 min after surgical skin incision using the Accu-ChekTM glucose monitor (Roche Diagnostics, Basel, Switzerland).

Differences in blood glucose concentrations were determined using analysis of variance for repeated measures.

The blood glucose concentration increased from $5.5 \pm 0.6 \text{ mmol}\cdot\text{L}^{-1}$ prior to surgery to $6.7 \pm 1.2 \text{ mmol}\cdot\text{L}^{-1}$ at 80 min ($P < 0.05$) and $7.1 \pm 1.3 \text{ mmol}\cdot\text{L}^{-1}$ at 120 min of surgery ($P < 0.05$). The intraoperative values were numerically greater than values previously obtained in patients undergoing colorectal surgery under combined epidural and inhalation anesthesia.³

Our data suggest that a clinically modest hyperglycemic response to colorectal surgery occurs in patients receiving epidural anesthesia during propofol anesthesia.

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Another method to assist nasogastric tube insertion

To the Editor:

Insertion of a gastric tube can be a difficult and frustrating experience, especially in patients who are anes-