Acute Postoperative Pain Management and Malfunctioning Epidural Catheter

Case Study

J.S., a 30-year-old male, was diagnosed with leiomyosarcoma of the small bowel with extension into the retroperitoneal space one month before admission. Abdominal x-rays and an ultrasound confirmed the presence of a 17 cm x 10 cm mass protruding from the edge of the jejunum and extending approximately 8–10 cm posteriorly up to the medial edge of the right kidney.

General anesthesia was required for the lengthy (i.e., four hours) radical resection of this large tumor, with epidural analgesia planned for postoperative pain management. In the preoperative holding area on the morning of surgery, an epidural catheter was inserted at J.S.’s thoracic spinal level of T-8. Accurate catheter placement was confirmed by administration of 5 ml of 2% lidocaine with epinephrine 5 mcg/ml and a subsequent mild sensory block from T-12 to T-6. General endotracheal anesthesia was induced and maintained with propofol and isoflurane intraoperatively. To effect analgesia, a 3 mcg/kg bolus of fentanyl was administered prior to surgical incision, followed by a constant IV infusion of 2 mcg/kg per hour.

During the final hour of surgery, the epidural catheter was activated with a bolus of 5 ml of 0.0625% bupivacaine plus 40 mcg/ml morphine at 8 ml per hour. J.S. appeared to have adequate analgesia and a neuraxial sensory block of the trunk. With a bolus of 5 ml of the maintenance infusion solution, which was restarted at 8 ml per hour. Within 10 minutes, J.S. was extremely drowsy, he was difficult to arouse, and his respiratory rate dropped to six per minute. A pulse oximeter was applied, and his O2 saturation was 80%. Oxygen was started per nasal cannula, and naloxone 0.2 mg was administered via IV. A fluid bolus of 500 ml normal saline was given to compensate for a drop in blood pressure to 80/40. Fifteen minutes later, the patient was drowsy but arousable, with a blood pressure of 100/60, respirations of 10 per minute, and a pain score of 0–1. The remainder of the postoperative course was problem free. He was placed on IV opioid patient-controlled analgesia as a “bridge” to oral pain medication before discontinuing the epidural infusion on postoperative day four. He was discharged.

Clinical Problem Solving

Responding to this clinical challenge are Charles Griffis, CRNA, MS, and Shelly Gierat, CRNA, MS. Both are nurse anesthetists in the Department of Anesthesiology at the University of California, Los Angeles, Medical Center.

What are the benefits associated with epidural analgesia?

S. Gierat: Pain management using epidural analgesia is appropriate for abdominal or thoracic surgical procedures because it produces a neuraxial sensory block of the trunk. With the ability of this technique to spare motor

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