J Anesth (2012) 26:634–635
DOI 10.1007/s00540-012-1384-8

LETTER TO THE EDITOR

Spinal anesthesia under sedation using propofol and ketamine for laparoscopic cholecystectomy in a patient during 13th week of gestation

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Received: 30 January 2012 / Accepted: 20 March 2012 / Published online: 7 April 2012

Keywords: Laparoscopic cholecystectomy · Spinal anesthesia · Pregnancy

To the Editor:

Non-obstetric surgery during gestation is rare [1]. Anesthesia management during gestation should focus on preservation of maternal hemodynamic stability, uteroplacental blood flow, and avoidance of maternal and fetal hypoxia during surgery [2]. Regional anesthesia confers some benefit in this patient population with less fetal drug involvement and simplified airway management. Spinal anesthesia (SA) offers the least amount of drug transfer for the achieved degree of anesthesia, and thus may be advised whenever possible [2]. Advantages of laparoscopy during pregnancy include decreased pain, earlier return of respiratory and bowel function, and earlier ambulation [3]. Despite its advantages, there may also be increased risk of fetal acidosis from carbon dioxide absorption and decreased uteroplacental blood flow secondary to increased intraperitoneal pressure during laparoscopy [3]. In addition to SA-related hypotension, increased intraabdominal pressure may also result in persistence of hypotension during laparoscopy; however, incidence of hypotension is no different whether laparoscopic surgery or laparotomy is being done with SA, provided that a low intraperitoneal pressure (<15 mmHg) is maintained which does not result in decreased venous return and hypotension [4, 5]. Another demerit of SA during laparoscopy might be the insufficiency of this method to overcome shoulder pain induced by peritoneal irritation. This pain results in employment of sedation, which may induce hypoventilation and hypercapnia during the procedure. However, reducing intraperitoneal pressure also improves the pain, allowing a decreased amount of drug administered for sedation, and end-tidal carbon dioxide monitoring is an effective method for early detection of hypoventilation that may increase patient safety during the procedure [4, 5].

A 26-year-old woman, 155 cm and 60 kg, was referred for laparoscopic cholecystectomy caused by acute cholecystitis during the 13th week of her gestation. Obstetric ultrasonography revealed a healthy fetus in accord with gestational age. Following 1,000 ml normal saline infusion, SA was performed in left lateral decubitus position in the intervertebral space between L4 and L5. Hypertonic 0.5 % bupivacaine was administered to the subarachnoid space with a total dose of 12.5 mg in 20 s. The operation started after sensory neural block reached T3–T4 dermatome level in supine position. An incision was made; CO_2 was used as the insufflating gas via Veress needle. Intraperitoneal pressure did not exceed 12 mmHg throughout the operation. Initially, propofol 2–3 mg/kg/h and additionally, upon patient request, 40 mg ketamine, which previously was shown to be non-uterotonic in the current dose [4], was administered against shoulder pain. Patient remained hemodynamically stable, without more than 20 % reduction of mean arterial pressure from baseline. Monitoring of the patient revealed neither oxygen desaturation nor hypercapnia, with well-maintained respiratory functions. Operation was successfully performed and finished in 60 min. Postoperative sensory motor block recovered completely in 3 h. Obstetric ultrasonography, performed at first and sixth postoperative hours, did not reveal any fetal adverse event.

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The patient was discharged from the hospital on the third postoperative day without any complications. A healthy term neonate was delivered by vaginal route under epidural analgesia in the 40th week of gestation.

In conclusion, with low-pressure CO_2 pneumoperitoneum and avoidance of hypotension, laparoscopic cholecystectomy under spinal anesthesia during pregnancy was performed successfully in our patient.

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