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Low-Dose Low-Concentration Spinal Anesthesia for Inguinal Herniorraphy in a Patient with Claustrophobia

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To the Editor

Complete lower limb motor block after spinal anesthesia can cause a negative memory in certain patients, who may later reject spinal anesthesia as an option in further procedures.

A 51-year-old woman (height 167 cm, weight 90 kg) with American Society of Anesthesiologist's physical status classification (ASA) III with history of moderate chronic obstructive pulmonary disease was scheduled for elective inguinal herniorraphy. Five years ago she suffered a car accident and was trapped in her car for one hour. Since then she developed a claustrophobic fear. Two years ago she had a panic attack after a knee arthroscopy related to spinal anesthesia lower limb residual paralysis. On this occasion the patient was concerned about motor block and asked to receive general anesthesia. The patient was informed about her personalized risks with general anesthesia and about the advantages of a low-dense low-dose spinal anesthesia, to which she gave consent.

This time she received 4 mg levobupivacaine 0.5% (0.8 mL, Abbott Laboratories, Madrid, Spain), mixed with 10 μg fentanyl (0.2 mL) and made up to a total volume of 3 mL with sterile water (final concentration: 0.13%). This solution had a specific gravity of 0.998945 $mg{\cdot}ml^{-1}$ (density measurement system for liquids and gases. Anton Paar K.G.A-8054 Graz Austria). Spinal anesthesia was administered in the sitting position with a midline approach at the L3-4 level using a 27-G Whitacre spinal needle (Becton Dickinson Medical Systems, Franklin Lakes, NJ, USA) with the orifice needle cephalad at approximately 0.5 mL/s. After sitting for 2 minutes, the patient was placed in a 20º reverse Trendelenburg position until the level of sensory anesthesia (tested to cold loss sensation at 1-min intervals) reached T8. A 0.025 mg/kg/min propofol IV infusion was also used for anxiolysis. Surgery proceeded without any complication.

At the end of surgery the patient was able to perform a straight leg raise >30º with both legs. Lower limb propioception and light touch were also preserved. She had a PACU bypass score of 10, so she bypassed the PACU and went directly to the day surgery unit [1]. Discharge home was realized 160 minutes later. Patient satisfaction at time to discharge home was excellent compared to previous spinal experience.

Low-dose, low-concentration Selective Apinal Anaesthesia (SSA) has already been used with lidocaine and fentanyl for gynecological laparoscopy. SSA allowed good-excellent operating conditions with minimal motor block and preserved light touch and proprioception [2,3]. However there are no studies of a low-dose low-concentration spinal anesthetic technique for inguinal herniorraphy surgery. We chose levobupivacaine, a long-acting amide local anesthetic, instead of lidocaine, because of the duration of surgery and because it is suggested to produce differential neuraxial block when administered intrathecally at low doses [4]. The addition of fentanyl to the spinal anesthesia solution improved the quality of the block and did not affect motor function [5].

An epidural block or T11-L2 Paravertebral Block (PVB) could have also been a good option. However, the longer onset time and the possibility (although very small) of pneumothorax in the case of PVB made us choose the SSA option. Another approach could have been to perform an inguinal field block with an ilioinguinal/iliohypogastric nerve block with moderate-deep sedation. Nevertheless patients with moderate-severe COPD are at increased risk for complications under moderate-deep sedation because of the pre-existing hypoxemia and blunted ventilatory response to CO_2.

Selective spinal anesthesia may offer a helpful alternative in patients concerned about residual lower limb motor block after spinal anesthesia. However more studies are needed to confirm this advantage.

References

1. Williams BA (2004) For outpatients, does regional anesthesia truly shorten the hospital stay, and how should we define postanesthesia care unit bypass eligibility? Anesthesiology 101: 3-6.
2. Vaghadia H, Viskari D, Mitchell GW, Berrill A (2001) Selective spinal anesthesia for outpatient laparoscopy. I: characteristics of three hypobaric solutions. Can J Anaesth 48: 256-260.
3. Vaghadia H, McLeod DH, Mitchell GWE, Merrick PM, Chilvers CR (1997) Small-dose hypobaric lidocaine- fentanyl spinal anesthesia for short duration outpatient laparoscopy I. A randomized comparison with conventional dose hyperbaric lidocaine. Anesth Analg 84: 59-64.
4. Camorcia M, Capogna G, Berritta C, Columb MO (2007) The relative potencies for motor block after intrathecal ropivacaine, levobupivacaine, and bupivacaine. Anesth Analg 104: 904-907.
5. Goel S, Bhardwaj N, Grover VK (2003) Intrathecal fentanyl added to intrathecal bupivacaine for day case surgery: a randomized study. Eur J Anaesthesiol 20: 294-297.

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