Clinical Reports

Temporary back and leg pain after bupivacaine and morphine spinal anaesthesia

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Transient neurological symptoms have been reported after hyperbaric lidocaine 5% spinal anaesthetics. We report a patient with neurogenic back and leg pain after uncomplicated bupivacaine and morphine spinal anaesthesia. A healthy 39-yr-old woman received 1.6 ml hyperbaric bupivacaine 0.75% and 250 μg morphine intrathecally. Two hours later, the patient experienced discomfort during suturing of the peritoneum and surgery was completed under general anaesthesia. Recovery was uncomplicated until 13 hr after intrathecal injection, when the patient complained of burning pain in her back extending to the front of the abdomen and similar pain in her thighs. Neurological consultation was obtained. Treatment was started with amitriptyline and the symptoms resolved slowly. Complete recovery occurred over three months. Further studies to assess symptoms after spinal anaesthesia are indicated.

Des symptômes neurologiques transitoires ont déjà été observé après une rachianesthésie à la lidocaïne 5%. Nous rapportons ici le cas d'une patiente qui a présenté des douleurs neurogènes au dos et aux jambes après une rachianesthésie non compliquée à la bupivacaïne et à la morphine. Cette patiente de 39 ans avait reçu 1,6 ml de bupivacaïne 0,75% hyperbare et 250 μg de morphine par la voie sous-archnoïdienne. Deux heures plus tard, le patiente s'est sentie incomfortable pendant la suture du péritoine et la chirurgie à dû être complétée sous anesthésie générale. La récupération s'est déroulée normalement jusqu'à la treizième heure après l'injection sous-arachnoïdienne, alors qu'elle s'est plainte d'une sensation de brûlure s'étendant de l'abdomen antérieur jusqu'aux cuisses. Une consultation neurologique fut demandée. Un traitement à l'amitryptiline a été institué et les symptômes sont disparus lentement. La guérison complète est survenue au bout de trois mois. Des études ultérieures s'imposent dans le but d'évaluer les symptômes qui surviennent après une rachianesthésie.

Key words
ANAESTHETIC TECHNIQUES: spinal;
ANAESTHETICS, LOCAL: bupivacaine;
COMPLICATIONS.

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Pain and dysaesthesia have been reported after spinal anaesthesia. In the previous reports, hyperbaric spinal lidocaine 5% was the local anaesthetic involved. Reports from Riger *et al.*[1] and Schell *et al.*[2] suggested an association among very small continuous spinal catheters, maldistribution, spinal lidocaine, and neurological toxicity. These were followed by reports of transient neurological toxicity or radicular irritation from Schneider *et al.*,[3] Hampl *et al.*,[4] Snyder and Blass,[6] and Pinczower *et al.*.[7] These reports have led to questions about the safety of lidocaine 5% solution for spinal anaesthesia. We recently had a patient who developed neurogenic back and leg pain after bupivacaine and morphine spinal anaesthesia.

Case report

A 39-yr-old woman with pelvic pain was scheduled for abdominal hysterectomy and possible bilateral oophorectomy. Preoperative assessment revealed that she had had tubal ligation, ovarian cystectomy for endometriosis and laparoscopy under general anaesthesia. In the postoperative period, she had had severe pain, nausea and vomiting after those previous procedures. Her medical history included an allergy to sulpha medications, smoking of half a pack cigarettes per day, hypothyroidism treated with levothyroxine 0.1 mg OD and a remote history of whiplash with no residual symptoms and no history of lower

back pain. Preoperative laboratory results were all within normal limits.

General and spinal anaesthesia options were discussed with the patient who then elected spinal anaesthesia with intrathecal morphine for the procedure. She received 5000 heparin *sc*, 10 mg diazepam *po*, and 2 g cefazolin *iv* before surgery. In the operating room, with the patient in left lateral position and using aseptic technique, a #25 g Whitacre needle was inserted into the subarachnoid space between the third and fourth lumbar spinous processes. The insertion was technically easy with no report of paraesthesia by the patient. Twelve milligrams (1.6 ml) hyperbaric bupivacaine 0.75% and 250 μg of epidural morphine was injected slowly into the subarachnoid space. Twenty minutes later, surgery started and the patient was comfortable. The patient received 7 mg midazolam and 20 μg sufentanil incrementally for sedation during surgery. About two hours later, when the surgeon started to suture the peritoneum, the patient became uncomfortable and general anaesthesia was induced with 250 mg thiopentone. The trachea was intubated after 100 mg succinylcholine and anaesthesia was maintained with nitrous oxide, oxygen and isoflurane. After completion of surgery and after the patient had regained consciousness, the endotracheal tube was removed and she was moved to the Postanaesthesia Care Unit (PACU). The patient was discharged from the PACU after one hour of observation, and 25 mg diphenhydramine *iv* for facial pruritus. In the PACU, the patient also received naproxen 400 mg *po*, 2 tabs of plain Tylenol *po* to prevent postoperative pain. After returning to the surgical ward, she complained of slight abdominal discomfort but was able to get up and leave the ward to smoke a cigarette.

About 13 hr after the intrathecal injection, the patient started to complain of a burning pain in her back radiating to the front of the abdomen and into her thighs. She was assessed by the anaesthetist on call, who found the patient to be afebrile. Physical examination showed no change in sensory or motor functions in the lower limbs, no evidence of inflammation or tenderness in the back and no sign of meningeal irritation. Analgesics were ordered to provide comfort and close observation was continued. By 48 hr after the surgery, the symptoms persisted even though the patient was ambulating and voiding without any difficulty. A neurological consultation confirmed the lack of any other neurological change except for patient's complaints. On the advice of the neurologist, 25 mg amitriptyline *po* twice a day was started. By the next day, she was feeling better but said the burning pain had not changed. The patient went home 24 hr later. The patient continued taking amitriptyline and Tylenol #3 tablets after discharge from hospital.

Two weeks later, the patient reported less back and leg discomfort. Three months later, the symptoms had resolved completely.

Discussion

As far as we are aware, this is the first case of temporary neurogenic pain after bupivacaine and morphine spinal anaesthesia. It suggests that neurological irritation may not be unique to hyperbaric lidocaine 5% spinal anaesthetics.

Bupivacaine has been a popular drug for spinal anaesthesia in surgical cases that are expected to last more than one and a half hours. With concerns of transient radicular irritation after lidocaine spinal anaesthesia raised by recent reports,[3-7] some anaesthetists have considered using bupivacaine as the primary local anaesthetic agent for spinal anaesthesia. Our experience with this patient suggests that bupivacaine may not be free of neurological irritation.

In the previous reports[3-7] and in this case, the transient neurological toxicity all presented with moderate to severe pain in the legs or pain in the back radiating into the legs. The pain appeared 2–20 hr after uneventful spinal anaesthesia. None of the patients had any motor deficit, or previous history of back or leg pain. All patients recovered within two to seven days and the pain was relieved by oral analgesics. Our patient had a rapid initial improvement after starting amitriptyline therapy, but her symptoms did not resolve completely until three months later.

Although a number of case reports[3-7] of transient neurological symptoms after spinal anaesthesia have appeared recently, there is no reason to suspect that the safety of spinal anaesthesia has suddenly changed. A number of other explanations are also possible. The reports may be a reflection of the increasing popularity of spinal anaesthesia with the availability of atraumatic spinal needles, and better postoperative analgesia with intrathecal opioids. Pain related to surgery may previously have masked neurological pain of short duration. In our case, the patient had such good analgesia for her surgical sites from the spinal morphine, that she was able to distinguish the subsequent onset of neurogenic pain. The reports may also be the results of better follow-up and reporting of symptoms by patients and their anaesthetists. Another possibility is early ambulation. Many patients have ambulated early with this particular technique, but none of them has reported such symptoms. The patient received bupivacaine and morphine intrathecally: there is no data to implicate or exclude morphine's involvement in this case. The spinal anaesthetic solution could have been contaminated with some unknown neurotoxic agent, but this was very unlikely because these symptoms appeared in only one patient rather than a

group of patients receiving similar spinal anaesthesia at the same institution.

The number of case reports suggests that neurogenic symptoms after spinal anaesthesia do occur. The anecdotal reports, however, cannot establish how frequently such symptoms do occur. Further prospective studies are needed to assess symptoms after spinal anaesthesia.

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