Transient radicular irritation after spinal anaesthesia with 2% isobaric lignocaine

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Summary
A typical case of transient radicular irritation after spinal anaesthesia with 2% isobaric lignocaine is described. The definition and history of this syndrome and the implications of the use of pencil point needles with lignocaine for spinal anaesthesia are discussed. (Br. J. Anaesth. 1997; 79: 394–395).

Key words
Anaesthetic techniques, subarachnoid. Anaesthetics local, lignocaine. Complications, transient radicular irritation.

In the past 5 yr, 5% hyperbaric lignocaine has been implicated increasingly in the cause of neurotoxicity after spinal anaesthesia. Its association with the cauda equina syndrome in continuous spinal anaesthesia with microcatheter techniques has been documented previously. Sacral accumulation of the local anaesthetic (caused partly by the low flow rates of the hyperbaric solution through the microcatheter) together with its neurotoxicity were thought to be responsible.

It became apparent that the use of 5% lignocaine with pencil point spinal needles may also cause transient neurological deficits. The term “transient radicular irritation” (TRI) has been used to describe such deficits. Pinczower and colleagues noted some features common to this syndrome involving the use of 5% hyperbaric lignocaine. These were mainly: (1) bilateral radicular-like leg pain with or without back pain; (2) moderate or severe pain; (3) onset of pain within 24 h of surgery; (4) duration of pain greater than 24 h and (5) no previous history of severe back or leg pain.

More recently 2% hyperbaric, and now 2% isobaric solutions of lignocaine have also been implicated in TRI.

We report a case of TRI which occurred when 2% plain isobaric lignocaine was injected through a 27-gauge Whitacre needle, when the aperture of the needle was directed caudally.

Case report
A 62-yr-old man presented for cystoscopy having been admitted in urinary retention. He had undergone cystoscopy, bladder neck incision and a transurethral resection of his prostate (TURP) 1 month previously, having had a 12-month history of hesitancy and frequency. This had been performed under an uneventful spinal anaesthetic using 0.5% heavy bupivacaine 2 ml via a 27-gauge Whitacre needle.

His past history included coronary artery bypass grafts in 1982, hypertension and congestive heart failure. He still had symptoms of angina with moderate exercise. He had no history of diabetes or chronic back pain. His medications included nifedipine, enalapril, frusemide, amiloride and aspirin. Routine preoperative tests, including a clotting profile, were within normal limits.

On this occasion, atraumatic dural puncture was performed in the sitting position at the first attempt at the L3–4 interspace, using a 27-gauge Whitacre needle. The side port of the spinal needle was directed caudally and injection of 2% plain isobaric lignocaine 3 ml was given over 4–5 s. No discomfort was elicited during insertion of the spinal needle or during injection of the local anaesthetic.

Cystoscopy, carried out in the lithotomy position, was uneventful and of short duration. Necrotic tags in the previous resection cavity were excised and adhesions to the verumontanum were divided. The patient remained haemodynamically stable during the procedure.

Twelve hours after operation, in the ward, he developed bilateral “burning” pain radiating from his buttocks to mid calves. This was uncomfortable enough for him to request oral analgesia (paracetamol–codeine) from which he gained partial relief. In particular he gave no history of motor symptoms and was able to walk freely. He had no headache, tinnitus or diplopia.

On examination he was afebrile and had no evidence of sensory loss or motor weakness, although he had diminished ankle jerks in comparison with his knee jerks. There was no record of his lower limb reflexes on admission. Sphincter tone was normal.

It was decided after consultation to treat him conservatively and his symptoms settled over the next 5 days. His urinary catheter was removed 2 days after operation and he voided successfully. He was
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It is unlikely that trauma played a causative role as there was no discomfort elicited on placing the spinal needle and the symptoms were bilateral.

As the patient remained haemodynamically stable, ischaemia was also unlikely. Chronic lumbar disc pathology was also probably unlikely as he had no history of chronic back pain. Furthermore, 2% lignocaine has been reported previously to cause a cauda equina syndrome, although this involved accidental intrathecal injection of 2% lignocaine 32 ml intended for extradural anaesthesia.

Pinczewer and colleagues, in a study of 17 cases, implicated 2% isobaric lignocaine in the cause of neurotoxicity, although no patient had symptoms typical of their definition of TRI. More recently, Hampi and colleagues found that the incidence of TRI was similar with 2% hyperbaric lignocaine and 5% hyperbaric solutions. Furthermore, Pollock and colleagues implicated 2% isobaric and 5% hyperbaric solutions of lignocaine in causing similar rates of TRI.

In summary, we believe that the use of 5% hyperbaric lignocaine and 2% isobaric lignocaine for spinal anaesthesia should be re-evaluated and that the possible maldistribution of local anaesthetics intrathecally and their consequences should be considered when directing pencil point needles caudally.

References