

Paraplegia Caused by Undiagnosed Metastatic Spinal Tumour in a Patient Receiving Epidural Anaesthesia

The Editor

Sir,

The pre-existing spinal pathologies may increase the incidence of severe neurological complications, (1, 2). Here, we report a patient without obvious symptom of spinal cord or root compression previously who developed paraplegia early following epidural anaesthesia, which was possibly caused by an undiagnosed metastatic spinal tumour.

A 68-year old, 70- kg, 178- cm, ASA II man was scheduled for rectal carcinectomy. No obvious symptoms of spinal cord or root compression, such as back pain, numbness in the lower-extremity, were presented. An epidural catheter was uneventfully inserted at the L1-2 interspace, and a test dose of 4 mL 2% lidocaine and 5 mL 0.5% ropivacaine were injected, respectively, after negative aspiration of cerebrospinal fluid (CSF) or blood, the initial sensory block level was at T11-L2. No discomfort was reported by the patient. The general anaesthesia was induced by intravenous administration of sufentanil 20 µg, propofol 100 mg and rocuronium 50 mg. The operation lasted for about 160 minutes and the haemodynamic parameters were stable.

The patient complained of numbness and weakness in both lower-extremities at about 36 hours postoperatively. The symptoms progressed, physical examination demonstrated the ebbing pain and tactile sensation extended to sensory area below T10, and muscle power of both lower limbs were 0/5, knee jerk reflex and Babinski sign were not elicited at 72 hours postoperatively. The laboratory coagulation tests were in normal ranges. The emergency total spine magnetic resonance imaging (MRI) demonstrated obvious bone destruction at T8-9 and L1 vertebral bodies, and soft-tissue mass at T8-9 level was revealed, the mass with clear edge appeared as low signal intensity on T1 and T2-weighted images and high signal intensity on Stir sequences, the mass intruded into the vertebral canal and compressed the spinal cord. The pre-existed metastatic tumour of the thoracic spine was diagnosed (Figs. 1, 2). The symptoms were not relieved after medication, and the patient rejected emergency laminectomy or radiotherapy because of financial difficulty and was discharged at the 10th day, post-operatively.

Since Nicholson *et al*, first reported paralysis caused by a metastatic spinal tumour after continuous spinal anaesthesia in 1946 (6), several mechanisms have been speculated. Obstruction of CSF flow by a space-occupying lesion above the puncture site may influence the dilution of the injected material, which may increase both the concentration and neurotoxicity of local anaesthetic. The second hypothesis is about



Fig. 1: Sagittal magnetic resonance imaging of spinal. Sagittal T1- and T2-weighted MRI shows bone metastasis at T8-9 and L1 vertebral bodies. A soft-tissue mass at T8-9 level can be noted, resulting in the compression on spinal cord.

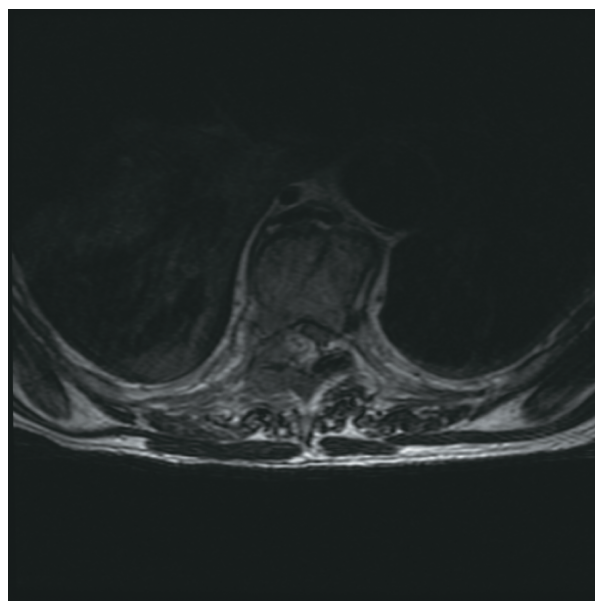


Fig. 2: Axial magnetic resonance imaging (MRI) of spinal. Axial MRI slice at T9 level shows bone destruction, a soft-tissue mass intrudes into the vertebral canal with compressing on the spinal cord.

“spinal coning” with an incidence of 14%–26%, which results from compartmental pressure differences (7, 8). The lumbar puncture exacerbates the dangerous pressure differentials above and below the spinal tumour and can induce neurologic complications (8). For epidural anaesthesia in this case, the

spinal tumour might block the CSF flow and also lead to vein drainage disturbance, this may increase the pressure in the epidural space below the block, which could be aggravated by epidural local anaesthetic administration.

Keywords: Epidural anaesthesia, paraplegia, spinal tumour

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