

Spinal epidural lipomatosis: a potential cause of complications with neuraxial anaesthesia in the obstetric population?

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References

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Spinal Epidural Lipomatosis (SEL) is a rare finding of excess adipose tissue within the spinal canal (1,2). Most are asymptomatic, however, symptoms can include those of myelopathy or radiculopathy such as limb weakness, paraesthesia, back pain or cauda equina like symptoms (1). SEL is associated with long-term corticosteroid use, obesity, endocrine disorders, post-operative spinal changes and use of protease inhibitors for the treatment of Human Immunodeficiency Virus (HIV) (1,2). We present a case diagnosed after complications following central neuraxial blockade (CNB).

Description

A 19-year-old primigravida with a raised BMI (34.kg/m²) was admitted for induction of labour due to reduced foetal movement at 39+5 weeks gestation. She requested an epidural for labour which was complicated by a recognised accidental dural puncture (ADP). The procedural anaesthetist reported an indistinct end point with no loss of resistance to saline until ADP at 5cm in the L3/L4 interspace. A second epidural was inserted but resulted in patchy analgesia. The patient later required a Caesarean section due to foetal hypoxia. A single pass spinal was performed with 10mg hyperbaric bupivacaine, diamorphine and alfentanil. A high spinal block occurred with shortness of breath and reduced oxygen saturations, the patient was supportively managed while the surgery proceeded uneventfully. She reported symptoms typical of a post-dural puncture headache (PDPH) on day one post-operatively. The PDPH was treated conservatively as the patient had developed a urinary infection with raised inflammatory markers requiring intravenous antibiotics. By day five she reported lower back pain and imaging of the lumbar spine was arranged. This showed 'no acute pathology but an incidental epidural spinal lipomatosis extending from L4 towards the sacral canal encasing the distal cauda equina'. On day seven, the patient had an uneventful epidural blood patch with immediate headache relief following consecutive days of reducing infection markers. She was discharged home on oral antibiotics and reviewed six weeks later where she reported continued resolution of all her symptoms.



T1 Weighted sagittal MRI segment of case patient showing epidural fat deposits

Discussion

This patient with an undiagnosed SEL had neuraxial anaesthesia complicated by ADP, high spinal and PDPH, with a delayed blood patch due to raised inflammatory markers. We propose that accumulation of epidural fat may alter tactile feedback from the Tuohy needle and alter the quality of loss of resistance to saline. Extra adipose tissue may reduce the epidural space volume increasing the risk of an ADP while slow cerebrospinal fluid flow could cause an unrecognised accidental dural puncture (2). Additionally, the risk of an ADP may be increased in patients with SEL due to extra epidural adipose tissue compressing and reducing the size of the epidural space (2). The incidence of spinal epidural lipomatosis may increase due to rising rates of maternal obesity and patients with a diagnosis of SEL who undergo CNB may require counselling about the potential for additional procedural risks.