

Spontaneous spinal epidural hematoma (SSEH) after cesarean section under epidural anesthesia

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Introduction

Spontaneous spinal epidural hematoma (SSEH) is an exceedingly rare condition, with an estimated annual incidence of approximately 0.1 per 100,000 in adults. SSEH is characterized by its acute onset, potentially leading to catastrophic compression of neural tissue, either through direct injury or ischemia, necessitating immediate surgical intervention upon the emergence of neurological dysfunction. Various gestational complications, including thrombocytopenia or preeclampsia, and the epidural vascular dilation, can amplify the risk of SSEH. Furthermore, the use of intraspinal anesthesia and analgesic techniques can obscure neurological manifestations, thereby complicating early diagnosis.

Case presentation

Basic information

A 29-year-old primigravida woman had no history of complications and no anti-coagulation therapy with heparin. Prenatal laboratory testing showed normal results. She was scheduled for transvaginal delivery after pregnancy for 41 + 2 weeks.

Anesthesia and surgical procedures

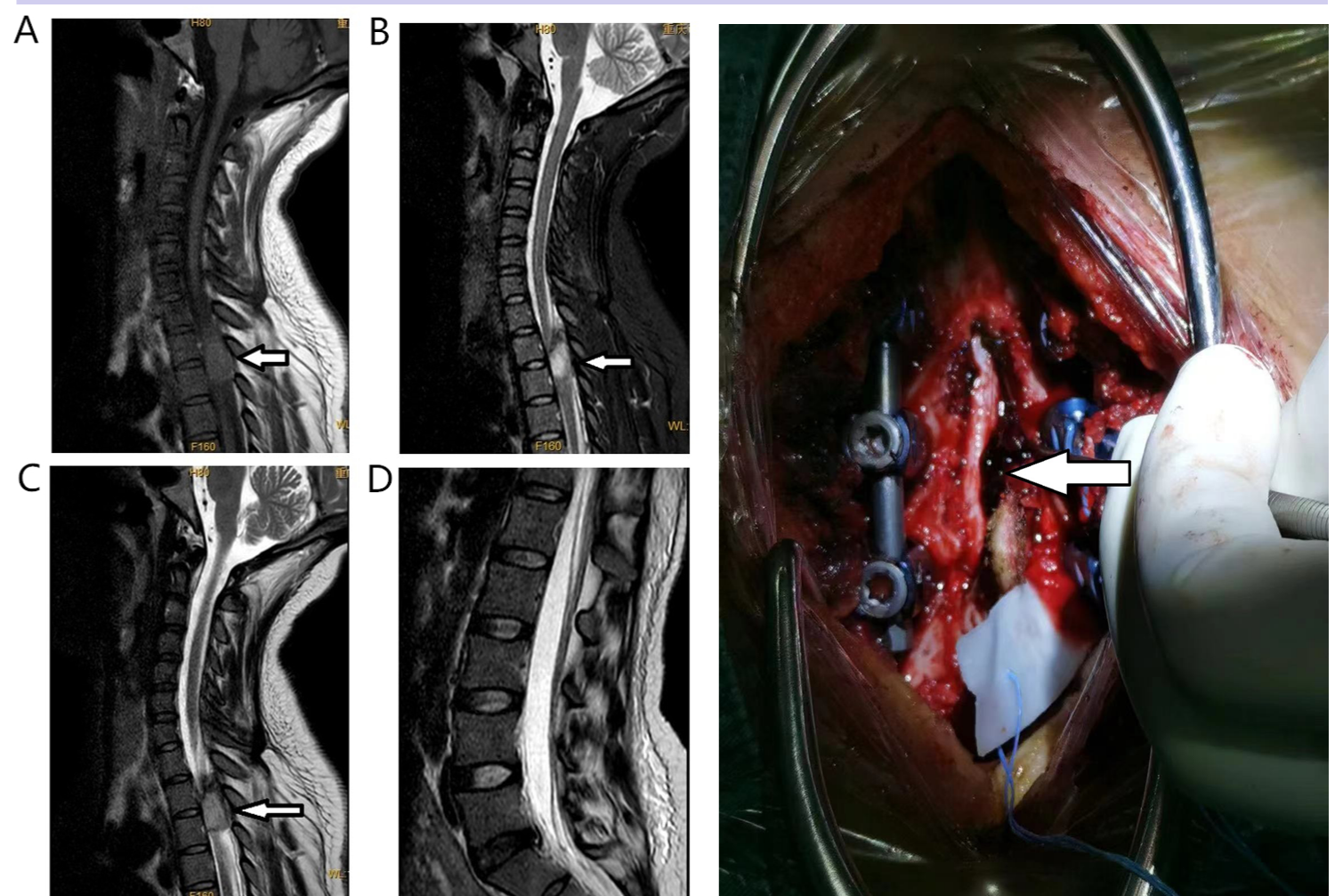
She received epidural labor analgesia when the cervix dilated to 2 cm: A selective epidural puncture was performed at the L2-3 level, and a 4 cm catheter was inserted and securely fixed. Subsequently, the patient-controlled epidural analgesia (PCEA) pump was connected to the catheter.

3 h later, the patient underwent an emergency cesarean section due to grade 2 amniotic fluid turbidity. Anesthesia for the cesarean section was administered via the pre-implanted epidural catheter. Post-surgery, patient-controlled intravenous analgesia (PCIA) was initiated.

Postoperative situation

15 hours following the puncture, the sensation and muscle strength in the right lower limb fully recovered, but mild soreness and swelling were noted in the left lower limb, accompanied by a manual muscle testing (MMT) grade of 2.

- 45.5 hours following the puncture, hypesthesia and flaccid paralysis occurred. MRI examination revealed a space-occupying lesion at the left epidural site of T2-3.
- The patient subsequently underwent laminectomy 14.5 hours after paralysis onset.
- 17 months post-operation, sensory function in both lower limbs and muscle strength in the right lower limb had been fully restored to normal levels, while the left lower limb achieved a MMT grade of 4.



Discussion

- While injuries resulting from epidural puncture are recognized as direct causes of secondary epidural hematoma, the hematoma in this case was located relatively distant from the puncture site, and MRI did not reveal any abnormalities at the site of puncture. We postulate that the epidural puncture itself was not the primary instigator of the epidural hematoma in this instance.
- However, it remains plausible that the entire epidural procedure, encompassing both the puncture and the administration of local anesthetics, may elevate the risk of epidural hematoma by increasing epidural pressure. In situations where patients who have undergone intraspinal anesthesia develop sudden postoperative neurological dysfunctions, anesthetists typically focus on ascertaining the presence of hematoma at the puncture site within the spinal canal, especially in the absence of neurosurgeons, potentially leading to delayed diagnosis.

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