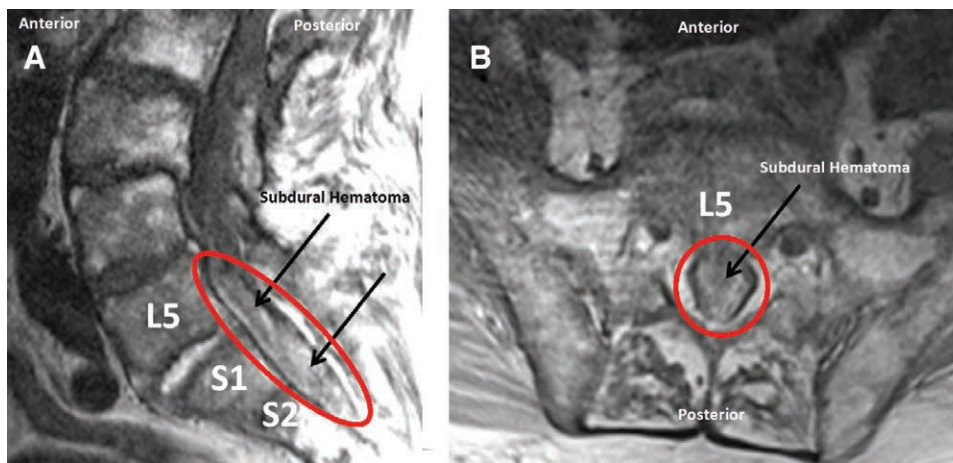


Images in Anesthesiology: Spinal Subdural Hematoma after Spinal Drain for Endovascular Thoracic Aortic Aneurysm Repair

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SPINAL drain is indicated as a standard of care in open and endovascular thoracic aortic aneurysm repair to protect the spinal cord from ischemic injury and paralysis. Unfortunately, subdural hematoma is a complication that can happen during needle insertion, cerebrospinal fluid drainage, and catheter removal. Symptoms of subdural hematoma can manifest as low back

pain, muscle weakness, paralysis, bowel or bladder incontinence, or *cauda equina* syndrome. These sagittal (panel A) and axial (panel B) T1-weighted magnetic resonance images of the lumbar spine demonstrate a subdural hematoma at the L5 to S2 vertebral levels that developed after difficult spinal drain placement.

During drain placement, the use of larger-sized needles is associated with higher rates of complication.¹ Multiple blind attempts at drain insertion can lead to hematoma, and fluoroscopy is a helpful alternative to the blind technique.² Anticoagulation at the time of spinal drain removal increases the risk of hematoma formation. A meta-analysis by Tryba found that the incidence of hematoma formation in neuraxial anesthesia was 10 times higher in the presence of a traumatic tap for patients already receiving heparin or aspirin.³ Diagnosis of hematoma can be suggested intraoperatively if motor and somatosensory evoked potentials are abnormal and should be confirmed postoperatively with magnetic resonance imaging, which can differentiate between ischemia and hematoma as causes of abnormal potentials. Management may either be conservative or urgent surgical decompression depending on patient symptoms. Spinal hematomas usually must be decompressed as soon as possible to maximize the extent of possible neurologic recovery, preferably within the first 12 h.

Competing Interests

The authors declare no competing interests.

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