

**Case Report:**

## **Good outcome after delayed diagnosed, post lumbar puncture foot drop – A Case Report**

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**Abstract:**

While spinal subdural hematoma is not a common disease, the prognosis may be critical in the event of an outbreak. Its symptoms include sudden and localized back pain, sensorimotor deficit, and sphincter disturbance. In previous reports, SSH has been attributed by coagulation disorder, anticoagulant therapy, spinal trauma, tumor, vascular malformation, and aneurysm. A case is presented here with post lumbar puncture iatrogenic spinal subdural hematoma that had no apparent cause and operative removal of the hematoma alleviated the patient's neurological problem. In our case , a 25-year-old male patient visited the outpatient department of our hospital due to weakness over right ankle and foot with severe headache and fever for about 25 days; he did not have any underlying disease. A diagnostic lumbar puncture was performed in the local hospital 15 days back to rule out meningitis. SSH is a rare complication of diagnostic lumbar puncture that may lead to disability if not properly treated in patients with neurologic deficits. Patients who complain of acute back pain or who demonstrate neurologic symptoms following lumbar puncture or similar spinal procedure should undergo MRI. If the diagnosis is confirmed to be SSH, surgical decompression of the spinal cord and cauda equina and hematoma evacuation must be done immediately to ensure neurologic recovery.

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**Introduction**

While spinal subdural hematoma is not a common disease, the prognosis may be critical in the event of an outbreak. Its symptoms include sudden and localized back pain, sensorimotor deficit, and sphincter disturbance. In previous reports, SSH has been attributed by coagulation disorder, anticoagulant therapy, spinal trauma, tumor, vascular malformation, and aneurysm. A case is presented here with post lumbar puncture iatrogenic spinal subdural hematoma that had no apparent cause and operative removal of the hematoma alleviated the patient's neurological problem.

**Case report:**

A 25-year-old male patient visited the outpatient department of our hospital due to weakness over right ankle and foot with severe headache and fever for about 25 days; he did not have any underlying disease. A diagnostic lumbar puncture was performed in the local hospital 15 days back to rule out meningitis. 2 days after lumbar puncture, the patient complained of mild weakness in his right lower limb and hypoesthesia below L3. Neurological examination showed weakness of motor function in the right ankle and foot with hypoesthesia and L4, L5 (0/5) motor function in the right lower limb. Whole-spine magnetic resonance imaging (MRI) was Performed, which showed high intensity signal at L2-S2 in the T2-weighted sagittal and axial Cut images, indicating an acute intradural hemorrhage

The patient's hematologic tests were normal, and he was not taking any medications, including anticoagulants. We performed immediate L3-L5 decompressive laminectomy and evacuation of hematoma after diagnosis.

**Diagnoses:**

Thoraco lumbar magnetic resonance imaging detected a subdural hematoma extending from 2<sup>nd</sup> lumbar to 2<sup>nd</sup> sacral vertebra.

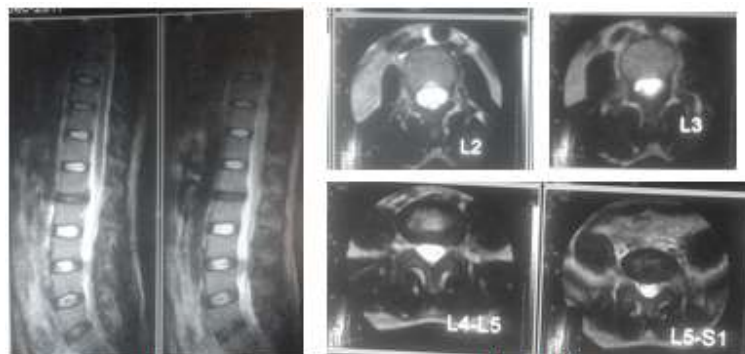


Figure (a) and (b): T2 weighted thoraco lumbar MRI imaging detected an subdural hematoma extending from 2<sup>nd</sup> lumbar to 2<sup>nd</sup> sacral vertebra

**Interventions:**

15 days after the onset of sensorimotor symptoms, lumbar decompression and removal of the hematoma were performed via L3-L5 laminectomy and evacuation via primary durotomy and closures under general anesthesia.



Figure (c): Showing subdural hematoma from L3-L5.  
Figure (d): Evacuation of hematoma with primary durotomy.

**Outcomes:**

The patient was discharged 1 months after the operation with a 3/5 score on the Muscle Strength Grading System for L4 and L5. Patient was regularly followed in OPD and complete recovery was noted at end of 1 year follow up.

**Lessons:**

Laminectomy and evacuation of hematoma may be effective in achieving a good prognosis despite a considerable delay in diagnosis.

**Discussion:**

Spontaneous spinal hematomas were first described by Schiller and colleagues<sup>1</sup> more than 60 years ago. Several causes have been identified, including acquired and congenital clotting abnormalities and underlying vascular lesions. Among the acquired coagulopathies, those associated with use of aspirin, warfarin, tissue plasminogen activator, and heparin have been implicated.<sup>2</sup> Spontaneous spinal hematomas (SDH) (unrelated to trauma, surgery, arteriovenous malformation, underlying neoplasm, or lumbar puncture) are a rare clinical entity.<sup>1</sup> Furthermore, Spinal subdural hemorrhage is an even more rare cause of acute spinal cord compression.

The diagnosis of spinal subdural hemorrhage is difficult because it is uncommon and presents with nonspecific spinal symptoms and slow development.<sup>3</sup> The usual location is thoracolumbar, in the lateral epidural space, where the radiculomeningeal artery contacts the radicular vein, generating a shunt near the nerve roots,<sup>4</sup> and they are usually isolated injuries. The spinal cord signs (spasticity, sensory disturbances and dysfunction of sphincters) are due to impairment of venous drainage, which causes congestion and increased venous pressure, edema and spinal hypoxia with myelopathy.<sup>4</sup>

Diagnosis of SDH requires prompt radiological assessment. Magnetic resonance imaging is the preferred method. On magnetic resonance images, SDH is apparent as a space-occupying lesion, usually ventral, contained within the dura mater.<sup>1</sup> Other methods used to confirm SDH are computed tomography and myelography.<sup>5</sup> Anticoagulation therapy should be discontinued in patients who have SDH. Reversal of anticoagulation also is necessary. SDH requires emergent decompressive laminectomy and evacuation of the hematoma to prevent or minimize permanent neurological damage caused by spinal cord compression, ischemia, and spinal cord injury.<sup>5</sup>

The timing of the surgery and the anatomic location of the hematoma determine a patient's functional outcome.<sup>6,7</sup> Spontaneous remission of an intraspinal hematoma has been reported rarely.<sup>8</sup> The degree of preoperative neurological deficit and the spinal level of the subdural hematoma correlate significantly with early and long-term functional outcome despite prompt evacuation.<sup>8,6</sup>

**Conclusion:**

SSH is a rare complication of diagnostic lumbar puncture that may lead to disability if not properly treated in patients with neurologic deficits. Patients who complain of acute back pain or who demonstrate neurologic symptoms following lumbar puncture or similar spinal procedure should undergo MRI. If the diagnosis is confirmed to be SSH, surgical decompression of the spinal cord and cauda equina and hematoma evacuation must be done immediately to ensure neurologic recovery.

**Abbreviations:**

MRI = magnetic resonance imaging, MSGS = Muscle Strength Grading System.

SDH = spinal subdural hemorrhage.

Keywords: lumbar puncture, subdural hematoma, foot drop.

**References:**

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