Spontaneous Cervical Epidural Hematoma Masquerading as an Abscess on Magnetic Resonance Imaging Scan

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Abstract

Objective: The aims of the study are to describe a case of spontaneous spinal epidural hematoma (SSEH) without any predisposing factors and magnetic resonance imaging (MRI) features of epidural abscess and to highlight the importance of high clinical suspicion.

Clinical Features: A 75-year-old male presented to the emergency department after a severe neck pain. He progressively showed sensory and upper motor signs on the left side of the body. The MRI scans were suggestive of cervical epidural abscess with peripheral enhancement of the lesion.

Interventions and Outcomes: He underwent a multiple level (C3-T1) laminectomy when he was found to have an SSEH. There has been no history of trauma or other predisposing factor, and presence of arteriovenous malformation was ruled out by MR angiography.

Conclusions: The MRI features of SSEH may be misleading and mimic other spinal lesions such as abscess. Presence of tapering superior and inferior margins, spotty Gadolinium enhancement in the mass, along with abrupt clinical onset of pain and neurologic deficit, should raise the suspicion toward epidural hematoma. Enhancement in the hyperacute stage of the hematoma itself might indicate continued bleeding and, in the case of deteriorating neurologic status, will necessitate decompression. (J Manipulative Physiol Ther 2009;32:391-395)

Key Indexing Terms: *Hematoma; Epidural; Spinal; Neck Abscess*

Spontaneous spinal epidural hematoma (SSEH) is a rare disease entity requiring urgent diagnosis.[1] Its incidence is estimated to be 0.1 per 100 000 patients annually; most patients are beyond the age of 50 years.[1,2] A variety of contributing factors have been described in the literature, including coagulopathy, anticoagulation, vascular anomaly, disk herniation, Paget disease of the bone, use of the Valsalva maneuver, and hypertension.[3] Most of the lesions are found in the thoracolumbar area in adults.[4] A case of SSEH in the cervical spine without any causative factor is described. Diagnostic magnetic resonance imaging (MRI) was suggestive of an epidural abscess; definitive diagnosis of SSEH was made during surgery. The purposes of this study are to describe a case of SSEH without any predisposing factors and MRI features of epidural abscess and to highlight the importance of high clinical suspicion.

Case Report

This study was reviewed by the institutional review board of the authors' institution. Although the requirement to obtain authorization for use and disclosure of personal health information was waived by the institutional review board, the patient consented to allowing his medical information regarding this case to be used for the purposes of this study and its subsequent publication.

A 75-year-old male presented to our emergency department with sudden severe pain in the distal portion of his posterior cervical spine, extending into both shoulders without any history of trauma, strenuous exercise, or use of anticoagulant medication. At first, he had been transported to a community hospital emergency department, where he was found to be afebrile; laboratory analysis revealed a prothrombin time of 10.6 (normal), an international normalized ratio of 0.9 (normal), a partial thromboplastin time of 26 (normal), and a white blood cell (WBC) count of 6700 (cells/mL) (normal). Because of the progressive weakness, a gadolinium MRI scan of the cervical spine was obtained. The results of this scan were interpreted as a probable epidural

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Fig 1. *Sagittal T1-weighted MRI scan of the cervical spine, showing a posterior lesion extending from C3 to T2 (asterisks). Showing the tapering ends of the lesion (black arrow).*

Fig 2. *T2-weighted MRI scan of the cervical spine. Sagittal plane, showing the presence of hypodense signal due to hemosiderin (white arrow).*

abscess, extending posterior and lateral along the left spinal canal from C4 to T1, causing severe spinal cord compression. He was placed on bed rest, intravenous antibiotics, and intravenous dexamethasone.

Neurologic evaluation showed the patient to be awake, alert, and oriented without any fever. He had full strength of all upper and lower extremity muscle groups on the right side. Motor strength throughout the left upper extremity was 0/5, except in the biceps, where it was 2/5. Examination of the left lower extremity revealed minimal contraction of the quadriceps, minimal plantar flexion strength (2/5), and no function of any other muscle group (0/5). Sensation was decreased throughout the left lower extremity. Patellar and ankle reflexes were absent bilaterally, there were 2 beats of clonus in the left ankle, and there was a positive Babinski sign. Sensation in the remaining limbs was normal. Anal tone and squeeze were normal. He felt radiating pain to both arms during neck extension. The patient had no Hoffman's signs. White cell count was 6.4; erythrocyte sedimentation rate (ESR) was 6; prothrombin time was 12.1; partial thromboplastin time was 24; international normalized ratio was 1.0; and C-reactive protein was less than 0.4. Blood and urine cultures were negative for bacterial growth. A repeat gadolinium MRI scan was obtained at our hospital, which was interpreted by the neuroradiologist as an epidural abscess from C3 to T2, causing severe spinal cord compression (Figs 1-3) The plan was to proceed with cervical decompression and evacuation of the probable abscess.

Because the patient refused the operation at first, approximately 50 hours after symptoms first appeared, nondestabilizing laminectomies and decompression of the spinal cord from C3 to T1 were performed without