Spontaneous Spinal Epidural Hematoma with Initial Presentation Mimicking Aortic Dissection

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Spontaneous spinal epidural hematoma (SSEH) is a rare cause of acute nontraumatic myelopathy. A 50-year-old man presented with sudden onset of severe back pain with radiation to the chest. Initially, he had no neurologic dysfunction, but he developed bilateral lower leg weakness one day after admission. The diagnosis was made by magnetic resonance imaging. An emergency decompressive laminectomy revealed a spinal epidural hematoma from C7 to T6, which may have been provoked by transient elevation of uncontrolled hypertension. The patient was discharged with improvement.

The clinical picture of SSEH demonstrates a wide range of symptoms and it may be underestimated. Surgical intervention is still the mainstay of treatment. Early diagnosis and appropriate treatment are important for an optimal neurologic outcome.

Key words: back pain, hypertension, magnetic resonance imaging, spontaneous spinal epidural hematoma, surgical intervention

Case Report

A 50-year-old man came to the ED due to a sudden onset of sharp upper back pain with radiation to the chest accompanied by cold sweats. The patient was a chronic smoker with a history of hypertension without regular medication control. He walked into the ED apprehensively. His initial vital signs were normal, except for a high blood pressure of 280/174 mmHg. The physical examination was non-contributory. He was instructed to remain on bed rest. Blood pressure readings in his four limbs were as follows: right arm 152/109 mmHg, left arm 187/129 mmHg, right leg 243/150 mmHg, and left leg 243/150 mmHg. A 12-lead electrocardiogram revealed left ventricular...
hypertrophy (LVH) without ST-T abnormalities. His chest radiograph was normal. Echocardiography showed concentric LVH, and the aortal diameters were as follows: ascending 30 mm, descending 20 mm, and abdomen 24 mm. The chest pain got worse, despite of the treatment of intravenous morphine. To rule out an aortic dissection, the chest computed tomography revealed negative findings. His blood pressure was controlled by intravenous labetalol but the pain remained. As a result he was admitted for further management.

On the following day, progressive numbness and weakness developed in his lower limbs. Laboratory tests showed normal blood cell counts, coagulation profile, serum chemistry profile, and erythrocyte sedimentation rate. A neurologic examination showed decreased muscle strength over his lower extremities as follows: grade 2/5 with reflexes of 2+ over the right leg and 3+ over the left leg, impaired pinprick sensation below the T10 level, and urinary retention. Under the impression of suspected myelopathy above the T10 level, emergency magnetic resonance imaging (MRI) of T-spine was done. It showed a prominent posterior heterogenous lesion from C7 to T6 (Fig. 1). An immediate decompressive laminectomy was performed to rule out spinal epidural hematoma. A large epidural hematoma at the level of C7 to T6 with cord compression, especially between T1 to T3, was removed. Pathological study of the removed tissue disclosed a hematoma without organization and fragments of ligament with focal calcification. Postoperatively, the patient had a rapid neurologic recovery. He was discharged in good condition.

**Discussion**

SSEH is an uncommon cause of acute nontraumatic myelopathy. Many causes of SSEH have been reported, such as hypertension, medications, and spinal vascular malformations\(^\text{1-4}\). The lack of microscopic evidence of early organization strongly suggests that the hematoma was acute in our case. Although it was reported that no relationship between SSEH and chronic hypertension\(^\text{1}\), we proposed that acute exacerbation of hypertension in our patient, and perhaps an underlying spinal vascular anomaly or atherosclerotic change, may have provoked rupture of a spinal epidural vessel.

The most common clinical symptom of a spinal epidural hematoma is neck or back pain with radicular radiation to the chest and extremities followed by neurological deficits from spinal cord compression. These can appear insidiously or abruptly and progress in a wide clinical picture. MRI gives multiplanar accurate information on SSEH, and is useful to follow-up the resolution of the hematoma. There is presumptive evidence that recurrent episodes of back pain may result from repeated spinal epidural hemorrhage\(^\text{5}\). Before the MRI era, the incidence of SSEH, and especially self-limited cases, may have been underestimated. More than 500 cases have been reported. The recent increased in reports of SSEH may be due to the introduction of MRI in daily medical practice.

Traditional management of SSEH has emphasized early decompressive laminectomy for an optimal neurologic outcome. Some case reports illustrate that there appears to be a role for conservative, nonsurgical treatment\(^\text{2,3}\). However, surgical treatment seems more favorable, and conservative treatment should be based on the severity of the neurological deficit and on the clinical course\(^\text{6-9}\).

Sex, age, and size and position of the hematoma do not correlate with postoperative outcome. The level of the preoperative neurological deficit and the operative interval are the critical factors for recovery after SSEH\(^\text{6,10}\). In one study, the disease-related mortality rate was 5.7%, the surgery-related complication rate was 2.9%, and...
there were no operation-related deaths\(^9\). In another report, mortality correlated highly with cervical or cervicothoracic hematomas, especially in patients with cardiovascular disease or those who were undergoing anticoagulant therapy\(^8\). Only by recognition of the pathology and prompt aggressive management can satisfactory neurologic recovery be anticipated.

SSEH is a rare cause of acute nontraumatic myelopathy. The cause of SSEH in our case may have been provoked by transient elevation of uncontrolled hypertension. SSEH demonstrates a wide range of clinical picture and it may be underestimated in self-limited cases. With back pain being a common chief complaint in the ED, physicians first examining patients with back pain should be careful and promptly provide a thorough physical and neurologic examination. Surgical intervention is still the mainstay of treatment for SSEH, especially in clinically significant cases. Early diagnosis and emergency treatment are important for a better prognosis for SSEH.
References

初期被誤判為主動脈剝離之自發性脊髓硬膜外血腫

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對於多數臨床醫師而言，自發性脊髄硬膜外血腫是一個造成非創傷性脊髄神經功能障礙的罕見原因。一位有高血壓病史但不按時服藥的五十歲男性因為急性上背痛合併轉移至前胸處來到急診室，核磁
掃描顯示疑似急性自發性脊髄硬膜外血腫。經緊急手術之後，病患恢復狀況良好。自發性脊髄硬膜外血
腫臨床表現多變化，可以由輕微背痛至四肢癱瘓，核磁掃描對於診斷及追蹤都很有幫助，目前手術為治
療主項。及早診斷和積極治療對病患預後有很大的幫助。

關鍵詞：背痛，高血壓，核磁掃描，自發性脊髄硬膜外血腫，手術治療