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CASE REPORT

Spontaneous Spinal Epidural Hematoma; a Case Report

Maryam Motamedi[1], Alireza Baratloo[1], Alireza Majidi[1], Farhad Rahmati[1*], Ali Shahrami[2]

1. Department of Emergency Medicine, Shohadaye Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran
2. Department of Emergency Medicine, Imam Hossein Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract

Spontaneous spinal epidural hematoma (SSHE) is a rare entity can have several reasons. Its prevalence in population is 0.1 per 100,000 with the male to female ratio of 1/4:1. For the first time Jackson in 1869 reported a case of SSHE and after that, it was declared as several hundred cases in literatures. Here, a case of SSHE was reported in a 52-year-old male referred to emergency department following severe low back pain.

Key words: Hematoma, epidural, spinal; back pain; case reports

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Introduction:

Spontaneous spinal epidural hematoma (SSHE) is a rare entity can have several reasons. For the first time Jackson in 1869 reported a case of SSHE and after that, it was declared as several hundred cases in literatures. Its prevalence in population is 0.1 per 100,000 with the male to female ratio of 1.4:1. SSHE is rare among children and no sexual preference was seen from fetus to 14 years-old (1). Based on the severity of neurologic deficits two therapeutic approaches, conservative and surgical, have been suggested. Here, a case of SSHE was reported in a 52-year-old male referred to emergency department following severe low back pain.

Case report:

A 52 year-old male was admitted to the emergency department (ED) with chief complaint of low back pain. The pain began two hours prior to admission. The patient was unable to walk because of severe pain; the severity of pain based on numeric rating scale (NRS) was 10. He stated that his pain has suddenly initiated from two hours before referring and the pain severity in the early was the half of intensity of his current pain. He tried to relieve his pain at home by using drugs like muscle relaxants and non-steroidal anti-inflammatory drugs (NSAIDs), nevertheless due to increasing the pain he was referred to the ED. The patient did not have a serious trauma history and just mentioned that he jumped from a chair with 40 centimeters height in the previous day, without any hurt in his back or knees. The subject did not have any positive past medical history except a suspicious non-documented history of ischemic heart disease. He has not had any heart problem since that time but has been continuously taking 80 mg aspirin daily. The subject has had the history of smoking and snuff opium since many years ago. On admission to the ED, he had oral temperature of 36.5°C, 19/minute respiratory rate, 85/minute pulse rate, and 130/85 mmHg blood pressure; and 96% oxygen saturation on room air. In physical examination, he did not have tenderness in the spinal column while it presented in left buttock and left inguinal ligament. His pain had diffuse nature toward knees while the knees examination was normal. The patient kept his hip and knees in flexion position, as antalgic. The sensory and motor examination as well as deep tendon reflexes were normal. On laboratory tests, white blood cell (WBC) =12000/ µl, platelet count =224000/ µl, hemoglobin =14.7 mg/dl, sodium=139 mEq/L, potassium=4.3 mEq/L, blood sugar=120 mg/dl, erythrocyte sedimentation rate (ESR) = 10 millimeter/hour, prothrombin time (PT) = 13.6 seconds, partial thromboplastin time (PTT) = 33 seconds, and international normalized ratio (INR) = 1.1 were reported. Urinalysis was normal. Although the treatment of the patient was initiated with an appropriate dose of venous analgesic agent, he did not show an affected response to the treatment and after a short time, the pain began again with the same intensity. In fact, noticing to the history of opium consumption by the patient, it was thought that maybe he wanted to exaggerate his pain to receive more opium. Because of tenderness in the inguinal region, the possibility of renal stone was also assumed that rule outed by doing abdomino-pelvic computerized tomography (CT) scan without contrast. Therefore, it was planned to do lumbosacral MRI for the patient. The radiologist reported a small epidural hematoma in the L_1/L_2 regions, as shown in Figures 1. Immediately a neurosurgical consultant was requested and the patient with SSEH diagnosis hospitalized in the neuro-

***Corresponding Author:** Farhad Rahmati; Department of Emergency Medicine, Shohadaye Tajrish Hospital, Tajrish Square, Tehran, Iran.
Tel/Fax: +98212272115; Email: f.rahmati2000@yahoo.com

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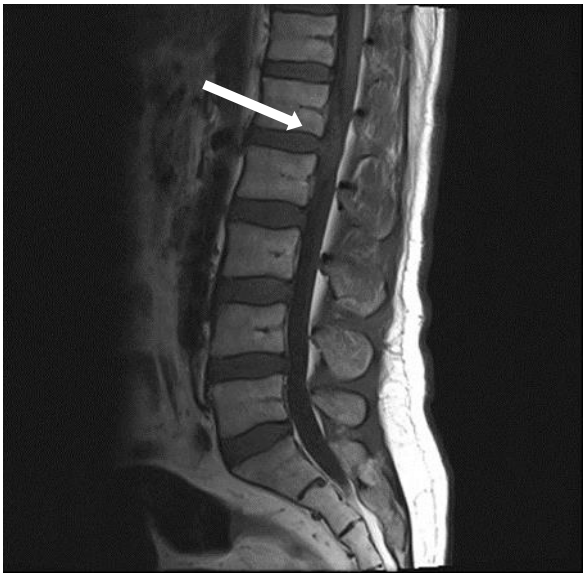
T_2 weighted axial cut

T_2 weighted sagittal cut

T_2 weighted coronal cut



T_1 weighted sagittal image

Figure 2: Lombo-sacrale magnetic resonance imaging (MRI) of patients without contrast

surgery ward. The patient's pain was controlled by a pain specialist and then he underwent conservative treatment there. Finally, the patient was discharged from the hospital without surgery and any neurologic deficit after six days.

Discussion:

Patients with back pain are the common referrals to the ED and consist of 2.3% of all physician visits. In addition, 84% of adults experience the back pain in their life (2-4). Some important elements in the history and physical examination can differentiate serious reasons of the back pain. The important point in this case was the presence of severe pain resistant to the treatment, which was not mentioned as red flags. SSHE is an idiopathic aggregation of blood in epidural space which can be as acute, chronic, spontaneously, post traumatic, or iatrogenic (5). SSEH concludes less than one percent of space occupied lesions; its pathogenesis is still unknown but believed that bleeding has a venous origin because the lack of valves in the epidural network disposes the intrinsic change in pressure. Albeit in terms of recent theories, it is supposed that arterial bleeding causes to traction and mechanic disruptions on nerve roots and in some studies, it was attributed to the spontaneous rupture of an arteriovenous malformation. Miyagi et al. declared that because the pressure of in-

travenous network is lesser than epidural space, arterial bleeding is more possible for that (6). Totally, epidural hematoma is along with a series of underlying diseases and predisposing factors such as organic vascular disease, hemodialysis, coagulation disorders, hemophilia B, thrombolysis for myocardial infarct, factor IX deficiency, long term aspirin using, and vascular malformations as well as vertebral hemangiomas; liver disease, alcoholism, and thrombocytopenia (7). The patient usually refers with a sudden sharp and radicular low back pain. The pain maybe exacerbated by percussion on the spine or with maneuvers that increase the intraspinal pressure like coughing and sneezing. The sensory and motor findings of the patient depend on the lesion site and hematoma size which can include weakness, paresis, bladder dysfunction, and sensory deficit (8). The spinal epidural hematoma is one of the potentially reversible pressure lesions on the spinal cord and roots, thus its diagnosis and treatment have a vital importance (5). Presently magnetic resonance imaging (MRI) is considered as the first diagnostic method of choice, which can show a biconvex hematoma in the epidural space with well-defined borders that taper towards up and down. In case of lacking MRI, computed tomography scan could be used (9, 10). The initial surgical intervention is a general treatment for SSEH (9). If neurologic deficit was complete, decompressive surgery should be performed within 36 hours (11). Conservative treatment has been suggested just in cases that neurologic deficit improves in the early phase of disease or coagulopathy disorder subjects (12). Functional recovery mostly depends on duration of symptoms at presentation and its improving after 72 hours is rare, although some cases improved without surgery has been reported. Two cases were showed by Hentsched et al. in 2001, one with complete quadriplegia and another one with complete paraplegia that both of them were cured without surgery and had good neurological function during three months following. Another study was performed by Kim T and colleagues that 15 patients were evaluated in to two groups. Ten patients underwent decompressive surgery and the rest conservative treatment. These two groups did not show any difference in initial neurological status after treatment (10). It seems that the hematoma length is a clue in aspect of spontaneous recovery happens in some SSEH cases (11, 13). In confronting with a patient complains from the pain, one of the important and priority duties of the physician is relieving the pain. But it is not enough alone and a logical diagnosis is required for justify the pain. Of course noticing to the limited time and facilities in the ED, sometimes there is no possibility to the definitive diagnosis. However, at least it should be rule out the critical causes and only in such condition, it is reasonable to discharge the patient to outpatient follow-up.

In the case of unknown psychiatric and neurologic manifestations, measuring serum level of thyroid hormones and CSF titer of anti-thyroid antibodies could be helpful in limitation of differential diagnosis and timely initiation of proper treatment.

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