Spontaneous Spinal Epidural Hematoma - Case Report and Literature Review

Hematoma Intrarraquidiano Extradural Espôntaneo – Relato de Caso e Revisão de Literatura

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RESUMO
Relatamos um caso de hematoma intrarraquidiano extradural espontâneo ao nível de T10-T12. Esta é uma causa rara de disfunção neurológica que representa 0,3-0,9% das lesões que ocupam espaço no canal vertebral epidural e que requer diagnóstico e tratamento imediato. Pacientes portadores de HIEE normalmente apresentam-se com aparecimento súbito de dor na coluna vertebral e sinais de déficit neurológico. Apresentamos o caso de uma paciente admitida no serviço de emergência com dor abdominal (radicular irradiada) e sinais e sintomas de compressão da medula espinhal. A ressonância magnética da coluna torácica evidenciou formação expansiva extramedular localizada ao nível de T10-T12 que comprimia e deslocava a medula espinhal anterolateralmente para a direita. A paciente foi submetida a tratamento cirúrgico em caráter de urgência, com remoção do hematoma epidural, sendo evitada a instalação de déficit neurológico permanente.

Palavras-chave: Hematoma intrarraquidiano espontâneo; Extradural; Tratamento Cirúrgico.

ABSTRACT
A case of spontaneous spinal epidural hematoma (SSEH) in the thoracic spine (T10-12) is reported. This is a rare cause of neurological deficit (represents 0,3-0,9% of the lesions that occupy epidural space in vertebral canal) requiring immediate diagnosis and treatment. Patients with SSEH typically present with acute onset of severe back pain and signs of neurological deficit. We report the case of a woman admitted to the emergency room with abdominal pain (radiating radicular pain) with signs and symptoms of spinal cord compression. A magnetic resonance imaging (MRI) of the thoracic spine showed expansive extramedullary formation located at T10-T12 level which pressed and displaced the spinal cord anterolaterally to the right. The patient underwent surgery on an emergency basis, and permanent neurological deficit was avoided.

Key words: Spontaneous spinal hematoma; Epidural; Surgical Treatment.
INTRODUCTION

Spontaneous spinal epidural hematoma (SSEH) consists of an uncommon but potentially disabling neurosurgical emergency, representing 0.3-0.9% of the lesions that occupy the vertebral epidural space\(^2,7\). Its diagnosis, based on the presentation of the patient’s symptoms, becomes a challenge since the clinical signs and symptoms overlap with those of other pathologies\(^13\). The classic presentation consists of acute back pain, often with radiation, associated with signs and symptoms of nerve root impingement and / or spinal cord compression\(^3,11,14\). Its true etiology remains unknown, although associations with certain predisposing conditions (coagulopathies, blood dyscrasias and arteriovenous malformations) have been described\(^2,5\). Early recognition, accurate diagnosis and prompt neurosurgical intervention (although there are reports of non-surgical treatments) may result in lower morbidity and mortality\(^15\). Therefore, physicians should keep in mind the possibility of this condition in their differential diagnosis when confronted with patients complaining of sudden onset of back pain with or without associated neurological signs, because the impact of a late diagnosis can be irreversible neurological sequelae. We here present the case of a previously hypertensive diabetic patient who was admitted to the emergency room with complaints of sudden pain in the abdominal region, with characteristics of radiating pain, and symptoms of spinal cord compression who underwent surgery on an emergency basis, showing improvement of neurological symptoms.

CASE REPORT

Female patient, 79 years-old, with past medical history of hypertension and diabetes mellitus type II. A three day history of sudden severe pain in the abdominal region associated with acute lower extremity paresthesia, urinary retention and constipation, without progressive symptoms. She denied any history of trauma, drug use or any physical exertion or other diseases such as bleeding disorders and blood dyscrasias. She was conscious and alert at admission, without respiratory distress and with normal vital signs. Neurological examination showed grade 5 muscle strength in upper and lower extremities. Lower limbs numbness, with T11 dermatome sensory level. Decreased reflexes of the lower limbs with bilaterally indifferent cutaneous plantar reflex response. Complete blood count, biochemistry and coagulation tests revealed no alterations. MRI of the thoracic spine showed an expansive extramedullary T10-T12, with anterolateral displacement the spinal cord to the right. (Fig.1). Discrete hypersignal in T2 and T1 weighted images, with no significant enhancement after intravenous contrast administration (Fig. 2). Laminectomy from T10 to T12 was performed with identification of coagulated epidural hematoma compressing posteriorly the spinal cord. During the operation, no vascular or tumoral lesions were found, but a complete removal was done. In the immediate postoperative period, the patient evolved with improvement in the signs and symptoms. After hospital discharge, the patient was referred to radiological examinations to confirm the spontaneous origin of the hematoma.

DISCUSSION

SSEH, initially described by Jackson and Bain, is defined as an accumulation of blood in the spinal epidural space whose etiology cannot be defined\(^9\). The incidence of SSEH as estimated by Holtas et al. is 0.1 per 100,000 people\(^6,15\).

In the brazilian literature there are very few publications concerning SSEH: we found only five articles since 1980\(^2,4,7,12,16\) the most recent one dating 12 years ago\(^2\).

Its pathogenesis remains unknown, even though the bleeding presents venous origin in most cases, once the epidural venous plexus presents itself vulnerable to variations in pressure of the thoracic and abdominal cavities. It is cavity, reason why most of the hematomas are located posteriorly to the spinal cord, consistent with the anatomical location of this plexus\(^5,10\). In an extensive literature search of reported cases of epidural hematomas of any etiology, Kreppel et al. described approximately...
75% of spinal hematoma as in a posterior location in the spinal cord. It can occur in all age groups, but more often after the fourth decade of life, especially in men (twice as common than in women). It is also known that the most common locations correspond to segments of the cervical and thoracolumbar junction.

The clinical presentation in most cases is similar to our case, ie, sudden pain associated with signs and symptoms of cord compression. However, due to its small frequency, the accurate diagnosis of this disease can be difficult. In its differential diagnosis there are abscesses, tumors, ischemia, transverse myelitis and acute diseases of the spinal disc. Since the prognosis depends on the duration of symptoms, the time taken for diagnostic procedures can have negative effects on the postoperative results. Many authors have reported that the promptness of surgical intervention correlates with a better neurological and functional recovery. A period of less than 12 hours of evolution from the initial ictus seems to be the best therapeutic window. Currently, MRI of the spine has been the method of choice due to its non-invasive characteristics in addition to showing the precise location and extent of the hematoma, as well as its effect on the spinal cord. In the past, other examinations (myelography, CT) were used for diagnosis, nevertheless those techniques did not prove to be specific and did not provide the exact extent of the hematoma, besides producing many false-negative results.

Based on the case reported and on pertinent literature, we emphasize that this framework consists of a neurosurgical emergency, which requires quick intervention. Although its infrequent occurrence, we should consider the diagnosis of SSEH in cases of sudden pain with signs and / or symptoms of spinal cord compression. MRI diagnosis and spinal cord decompression with drainage of the hematoma are imperative to achieve a better neurological outcome.

**CONCLUSION**

The diagnosis of SSEH must be suspected in cases of sudden pain in the spine or nerve roots paths with symptoms of spinal cord compression. Early recognition, accurate diagnosis and immediate surgical treatment can result in significant neurological improvement, even in severe and advanced cases.

**REFERENCES**


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