



Spinal Epidural Hematoma Associated with Neurological Deficit after Osteoporotic Vertebral Fracture: Case Report

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Abstract

Post-traumatic Spinal Epidural Hematoma (SEH) is rare and represents less than 1% to 7% of all spine injuries. SEH is an important cause of cord compression and in some cases it leads to neurological deficit. The authors report a rare case of an 82-year-old woman admitted with neurological deficit and a previous history of osteoporotic vertebral fracture (L2) two months before admission that was chosen for conservative treatment. The diagnosis was made by Magnetic Resonance Imaging (MRI) of the lumbar spine which revealed a spinal epidural hematoma. The article reports a rare case and discusses the clinical aspects and surgical treatment.

Keywords: Epidural hematoma; Osteoporotic fracture; Hemilaminectomy; Lumbar spine

Introduction

Spinal Epidural Hematoma (SEH), although rare, is an important event and may lead to compression of the spinal cord [1]. In some of the cases already reported, there is a history of associated trauma, but the absence of fracture or displacement [2]. Even rarer than spontaneous SEH are epidural hematomas associated with fracture of the spine, with an incidence of 0.5% to 7.5% [3]. The majority of posttraumatic HE symptoms occur immediately after the trauma, making the onset of symptoms with subsequent evolution a rare event [4,5]. In this paper, we describe a case of post-traumatic epidural hematoma due to fracture of the spine due to osteoporosis in which the rewire associated neurological symptoms, in order to report a rare case and discuss the topic about this pathology.

Case Presentation

A female patient, 82 years old, admitted to the emergency room of a Tertiary Hospital with a sudden onset of aphasia, deviation of the labial commissural to the right and hemiparesis of the lower left limb. When investigating the previous history, it was observed a fall out of the height itself, with a consequent fracture of L2 by osteoporosis, being treated conservatively. Initially, stroke was suspected, leading to hospital admission for initial clinical treatment. Computed tomography of the skull performed at admission showed no signs of ischemia or hemorrhage. On the first day of hospital stay, the patient presented complete improvement of aphasia and deviation of the labial commissural, however, he maintained a left inferior neurological deficit. Magnetic Resonance Imaging (MRI) of the lumbar spine, which showed fracture due to osteoporosis in L2 and epidural hematoma extending from the T12/L1 to the L2/L3 level (Figure 1 and 2), was performed, compressing the Dural sac and the cone medullar. Old fractures were also observed in T10 and L1. The patient underwent left the hemilaminectomies from L1 to L3, with emptying of the hematoma. It evolved with progressive improvement of the neurological deficit, presenting complete remission of symptoms 1 month after the surgery.

Discussion

Spinal Epidural Hematoma (SEH), is an uncommon condition, considered a diagnostic challenge, and is associated with spontaneity or trauma. The latter is less common, corresponding to 1% to 1.7% of all lesions of the spine [3]. It is more frequent in men, and in transitional regions of the cervicothoracic and thoracolumbar spine [1].

The causes are vertebral fractures, obstetric trauma, lumbar puncture, epidural anesthesia, and post operative bleeding. In addition, cervical spondylolysis, rheumatoid arthritis, ankylosing spondylitis and Paget's disease are considered risk factors [1,6].

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Received Date: 16 Jan 2019

Accepted Date: 04 Feb 2019

Published Date: 07 Feb 2019

Citation:

de Oliveira Júnior AN, Sauer Hehn FH, da Silva Karnikowski V, Stipp WN, de Souza Menegaz P, Martins RO, et al. Spinal Epidural Hematoma Associated with Neurological Deficit after Osteoporotic Vertebral Fracture: Case Report. *Clin Surg*. 2019; 4: 2325.

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Figure 1: Sagittal image sequence in T2-weighted MRI showing a fracture in L2 and L1 with epidural hematoma extending from T12 to L3.



Figure 2: Axial image T2-sequence MRI demonstrating, at the level of the L2 and L1 fractures, epidural hematoma compressing the dural sac.

The patho physiological mechanism still remain sun certain, it is believed that SEH originates from the epidural venous plexus, due to the lack of venous valves and the oscillatory pressure of the thoracic and abdominal cavities [1,6].

The clinical picture of the post-traumatic personally begins after the accident. Its symptoms are progressive, and include signs of spinal compression with motor, sensory or bladder deficits, and may be associated with pain in the back. In addition, it is important to perform the differential diagnosis with herniated intervertebral disc, acute ischemia of the spinal cord, tumor or abscess [1,3,6]. To per form

the diagnosis, Magnetic Resonance Imaging (MRI) is considered the best examination, and to mography should be performed only in its absence. If the exact location of the hematoma cannot be visualized, the durra mater should be opened to look for bleeding in the subdural space. The images demonstrated on MRI vary according to age and may even help to identify the duration of symptoms [1,2,7].

Treatment consists of early surgical decompression. The procedure to be performed includes laminectomy and removal of the hematoma. The ideal time for intervention is 48 hr and 38 hr for in complete and complete neurological deficits, respectively [1,8].

As prognostic factors, in addition to early decompression, the onset of symptoms, the patient's age, and the patient's neurological status prior to the procedure influence the outcome. In addition, the post operative result seems to be better in patients without vertebral lesions [2,3].

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