

CASE REPORT

An Unusual Case of a Large Hematorrachis Associated with Multi-Level Osteoporotic Vertebral Compression Fractures; a Case Report

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Abstract

Spinal epidural haemorrhage may present as back pain associated with radicular symptoms and can be a catastrophic clinical scenario with progression to paraplegia or even sudden death. Being a rare entity, it needs a high index of clinical suspicion to diagnose it. Fractures have been documented as a cause of hematorrachis but such hematomas only extend to one or two vertebral segments. Large epidural hematomas are usually associated with conditions like bleeding diathesis, arterio-venous malformations, plasma cell myeloma, and non-Hodgkin's lymphoma. Surgical management with immediate evacuation of the hematoma is the usual line of management in patients with neurological deficits. Though rare, monitored and careful conservative management can lead to recovery of neurological symptoms and resolution of the hematoma. We report a case of a very large post traumatic epidural hematorrachis extending to 11 vertebral segments from D3 to L1 vertebral bodies, who had a gradual spontaneous recovery.

Key words: Compression fracture, Epidural hematoma, Hematorrachis

Introduction

Hematorrachis is a hematoma in the spinal epidural space and has always been considered an interesting entity due to its rarity and grave prognosis. The spinal epidural space in the bony vertebral canal contains an extensive internal venous plexus that communicates with external venous plexus and is referred to as Batson's plexus. Epidural hematomas have been described in the literature as most commonly occurring due to venous bleed (1). In a traumatic event, stretching of spinal epidural vessels are considered to be a causative factor (2). Bleeding may be spontaneous for example due to a primary epidural hematoma or be secondary to trauma, vascular malformations, bleeding diathesis, anticoagulant therapy and pregnancy (3, 4). Usually a spinal epidural hematoma begins as a venous ooze laterally and extends to the posterior space (5). Commonly the hematoma is confined to two or three

vertebral segments, but rarely may extend up to 8 or 10 vertebral segments (6). Large hematomas are usually associated with vascular anomalies or coagulation disorders but hardly after a trauma.

Traumatic spinal hematoma is common in adults compared to the paediatric population. The overall incidence is more of a spontaneous spinal hematoma and its traumatic causes include blunt trauma, iatrogenic following lumbar punctures and epidural anaesthesia and missile injury (7). Patients usually present with low back pain with radiculopathy or grave presentation including paraplegia or sudden death.

Immediate decompressive laminectomy and hematoma evacuation have been recommended in the literature for patients having neurological deficits and conservative management is restricted to patients with signs of spontaneous recovery and small epidural hematoma.

Due to the rarity of this condition, only isolated case

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Figure 1. previous MRI showing L2 fracture (axial section).



Figure 2. previous mri showing L2 and L3 compression fracture with no epidural bleed.



Figure 3. D11,D12,L2,L3 vertebral compression fracture.



Figure 4. large hematoma extending from D3-L1.

reports or small case series have been described in the literature. We report a very large hematorrachis associated with multiple osteoporotic vertebral fractures secondary to a trivial fall in an elderly individual who showed exceptional recovery in his neurosensory and posterior column symptoms.

Case Report

A 56-year-old male patient presented to the emergency department with severe low back pain, bilateral lower limb radiculopathy and weakness following a trivial fall 10 days previously. Detailed neurological evaluation revealed motor weakness in the hip, knee, and foot with 3/5 power and features of posterior column involvement with decreased vibration and position sensations in both lower limbs. One year ago he had a history of severe back pain following a fall for which he had undergone a MRI scan, with evidence of an L2 vertebral fracture with no signs of epidural hematoma [Figure 1]. The patient was managed conservatively with a brace and analgesics along with osteoporotic management. Radiological evaluation revealed acute D11 and D12 vertebral compression fractures and old L2 and L3 compression fractures [Figure 2]. The MRI scan confirmed the above fractures with a large epidural hematoma extending from D3 to L1 vertebral segments [Figure 3; 4]. Contrast enhanced scans confirmed the epidural hematoma with no evidence of arteriovenous malformations.

A workup for other causes of large epidural hematomas like bleeding diathesis, coagulation disorders, lymphomas and myelomas were negative. A diagnosis of a post traumatic hematorrachis was then confirmed after exclusion. In view of the neurological involvement and associated posterior column signs, surgical decompression and hematoma evacuation was recommended. But the patient requested a trial of conservative management and hence was started

on oral steroids. The patient was mobilized using a Knight Taylor brace and physical therapy and gait training was given for 15 days with careful monitoring of his neurological status. He showed gradual spontaneous improvement in his gait balance, posterior column signs, and marked improvement of both lower limb power to 4/5 at the end of 15 days. Another MRI has been planned after 3 months to confirm the resolution of the hematoma.

Discussion

Traumatic injuries may be associated with spinal epidural hematomas, which being catastrophic, need to be diagnosed early to prevent devastating effects like paraplegia (8). A high index of suspicion for vertebral compression fractures and epidural bleeding should exist in osteoporotic patients with back pain associated with radiculopathy. Large epidural hematomas are more commonly seen in the thoracic vertebral segment and are associated with AV malformations or are secondary to tumours.

It is imperative to rule out other causes of epidural hematomas like coagulation disorders in order to prevent recurrent episodes and catastrophic events following surgical interventions. Epidural hematomas associated with neurodeficits need surgical intervention and should be operated on early for a better prognosis (9). Decompressive laminectomy and immediate evacuation of the epidural hematoma has been the main line of management in the literature.

Though immediate surgical management is better, in patients with improving neurodeficits or chronic bleeds conservative management can be attempted, keeping in mind the risk associated with it (10).

In our case, we report a very large epidural hematoma

associated with a multiple osteoporotic compression fracture and with no other justifiable causes. To the best of our knowledge such a large bleed has not been documented in the literature. Thorough surgical evacuation of the epidural hematoma leading to decompression of the spinal canal and prevention of impending paraplegia is the usual advocated line of management. However, spontaneous recovery of neurological deficits and resolution of the hematoma is possible, although uncommon.

Hematorrachis, large or small if acute and associated with neurosensory deficits, is a spinal emergency and the orthopaedic surgeon should be aware of the associated complications with this condition and the need for an immediate surgical evacuation of the hematoma. Though rare, monitored and careful conservative management

can lead to the recovery of neurological deficits and resolution of the hematoma.

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