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Case Report

Spinal epidural cavernous haemangioma: a case report and review of literature

A Goyal*[,1], AK Singh[1], V Gupta[1] and M Tatke[2]

[1]*Department of Neurosurgery, G.B. Pant Hospital, Delhi, India;* [2]*Department of Pathology, G.B. Pant Hospital, Delhi, India*

Study design: A case report of purely epidural cavernous haemangioma with MRI appearance and pathological features.
Objective: To present a rare case of extradural mass with differential diagnosis.
Setting: Delhi, India.
Method: A 55-year-old man presented with progressive weakness and diminished sensation in both lower limbs. MRI demonstrated a pure extradural mass with no bony invasion. Histopathology of the lesion revealed a typical cavernous haemangioma.
Result: The patient showed significant improvement after surgery.
Conclusion: Radiological presentation could be confusing in a purely epidural cavernous haemangioma. Awareness of the characteristics of the lesion will facilitate diagnosis and treatment of the lesion.
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Keywords: cavernous haemangioma; epidural space; magnetic resonance imaging

Introduction

Cavernous haemangiomata are not considered to be vascular neoplasms,[1] but rather hamartomas or malformations of the microcirculation. They may affect any part of the neuraxis.[2] Most of these lesions are encountered intracranially, supra tentorial sites being most commonly affected. Spinal cord cavernomas were thought to be rare lesions, but with the advent of MRI this lesion is more frequently diagnosed, and the frequency may be greater than previously thought.[3–5]

Cavernous haemangiomas presenting as a purely epidural lesion are very rare,[6–11] with only 10 cases based on MR studies having been reported so far.[12] In the current study the authors describe one case of epidural haemangioma, presenting as chronic progressive spinal cord compression, its MRI features and review of the literature.

Case report

A 55-year-old man was admitted with a 2.5 year history of mid thoracic back pain and progressively decreasing sensation in both lower limbs. For the last 2 years he had noticed progressively increasing weakness of both lower limbs, and for the last 6 months he was bedridden. There was no other significant positive or negative history.

Examination

Neurological examination revealed grade 3–4 power in both lower limbs, bilaterally symmetrically brisk, deep tendon reflexes and bilaterally extensor planter responses. He had 50–80% sensory loss for all modalities below D9 level. No bowel or bladder involvement was noted.

Investigation

His routine investigations showed Hb: 10.5 g%, TLC: 7600/cmm, DLC: P 64%, L 30%, M 4%, E 2%, ESR 20 mm in first hour, bleeding time 2.30 min, clotting time 3.5 min, fasting blood sugar 78 mg%, liver function test: serum billirubin 0.8 mg%, SGOT 20 U/l, SGPT 28 U/l, Hbs Ag −ve, kidney function test: blood urea 23 mg%, serum creatinin 0.7 mg%, urine examination normal, HIV −ve, and ECG and X-ray chest were normal.

MRI showed a posteriorly situated extradural mass at D5–D7, pushing the cord anteriorly. It was isointense with the muscle and spinal cord on T1

*Correspondence: A Goyal, 60, Anand lok, Khel Gaon marg, New Delhi, 110049, India

Figure 1 (**a**) Sagital section, T1 Weighted image showing isointense extradural mass compressing the thecal sac anteriorly. (**b**) Sagital section T2 Weighted image showing hyperintense extradural mass

weighted images but on T2 weighted images the lesion was of consistently high intensity, slightly less intense than cerebro-spinal fluid (CSF) (Figure 1a,b).

Preoperatively the first possibility considered was epidural tubercular granulation tissue (more common in this part of the world).

Operation notes

D5 – D7 laminectomy was done and no bony erosion was noted. An extradural mass of 7×1.5 cm was seen on the posterior aspect. It did not have any lateral extension and there was no relation to any exiting nerve root. The pink coloured mass, soft to firm in consistency, was highly vascular but was easily separable from the dura. Using microsurgical technique, total excision of mass was achieved.

Histopathology

The lesion consisted of a large number of thin walled vascular channels in collagenous connective tissue (Figure 2), lined by a single layer of endothelial cells. Some of these were filled with blood. A diagnosis of cavernous haemangioma was made.

Postoperative course

The patient made a good recovery after surgery both in motor strength and sensations and was able to walk with support. At 5 months follow-up his muscle strength in the legs was MRC grade 4 to 5, the deep tendon reflexes of both lower limbs well within normal range with bilaterally flexor plantar responses, and a minimum sensory deficit of 10% to 20% for all modalities.

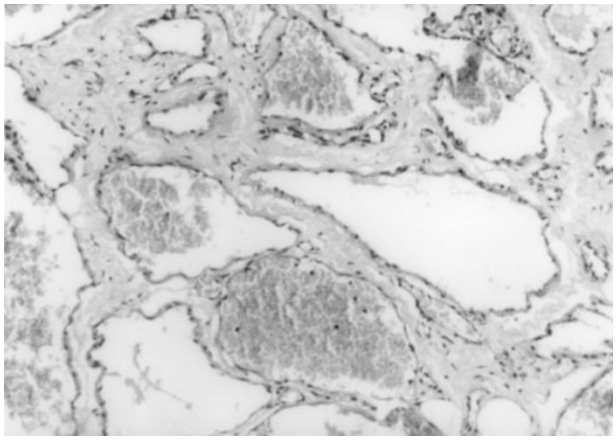

Figure 2 Micro section showing a large number of vascular channels in collagenous tissue most of which are cavernous, some filled with blood. HE × 160

Discussion

Cavernous haemangiomas may develop anywhere in the neuraxis and its surrounding membranes.[2] They represent approximately 5% to 12% of the vascular lesions of the spine.[13] Epidural spinal cavernous haemangiomas are rare lesions, and commonly affect the vertebral bodies sometimes extending intraspinaly

into the epidural space. So far only 56 cases have been reported in the literature.[7,8,13–16,20]

The most frequent clinical presentation of spinal cord cavernous haemangioma is a progressive compressive myelopathy, an acute onset is rare and is caused by an intramedullary haemorrhage. Turjman in his 11 cases of spinal cord haemangiomas, described only two acute presentations.[21]

The lesion or abnormality usually develops in the thoracic or lumbar regions.[1] The most common site is the posterior part of the epidural space. The MR imaging of spinal cavernous haemangiomas are not as characteristic as those of cranial cavernomas. In most of the cases the T1 weighted images of spinal cavernous haemangioma shows a homogenous signal intensity similar to that of spinal cord and muscle, while on T2 weighted images the signal of the lesion is consistently high (as observed in the current case). Frequently the lesion is characterized by its extension, into the intervertebral foramen.[9,10,22] The rim of hypointensity resulting from haemosidirin deposits, seen in intramedullary cavernous haemangioma is not seen in epidural cavernous haemangioma.[22,23]

These radiological characteristics help to distinguish cavernous haemangiomas from other lesions of the spine. In the present case due to its location (epidural) and MR characteristics (isointense on T1 and hyperintense on T2 weighted images) we considered the possibility of a tubercular granulation tissue. The other differential diagnoses for these types of lesion include neurinoma, meningioma, lymphoma and metastasis.[24,25]

The diagnosis is much easier when the lesion is associated with epidural haemorrhagic changes, but then other vascular informations can have similar MRI appearance. Conventional or MR angiography is useful and should be performed whenever there is doubt to differentiate these from other lesions.

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