



Case Report

Pure epidural spinal cavernous haemangioma

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Received : 12 August 2021
Accepted : 23 September 2021
Published : 19 October 2021

DOI
10.25259/SNI_805_2021

Quick Response Code:



ABSTRACT

Background: Pure epidural spinal cavernous hemangiomas (SCH) account for only 4% of all spinal epidural lesions. Our literature review identified 61 publications reporting on, a total of 175 cases in the magnetic resonance imaging era. Here, we reviewed those cases, and have added our case of what appeared to be a multifocal SCH.

Case Description: A 72-year-old male presented with a progressive paraparesis attributed to a T5/T6 dorsolateral extradural mass extending into the right T5/6 foramen. Surgical excision documented the lesion, histologically, was a SCH. A second similar lesion was noted involving the left C7/T1 foramen; as the patient was asymptomatic from this lesion, and no additional biopsy was performed. The patient returned to normal neurological function within 2 months postoperatively.

Conclusions: Here, a 72-year-old male presented with a pathologically confirmed T5/T6 epidural SCH and a secondary C7/T1 foraminal lesion suspected to represent a secondary focus of an epidural SCH.

Keywords: Cavernous hemangioma, Epidural, Myelopathy, Spinal, Surgical excision

INTRODUCTION

Pure epidural spinal cavernous hemangiomas (SCH) account for only 4% of all spinal epidural lesions. Notably, 61 studies identified 175 cases in the magnetic resonance imaging (MRI) era. Here, we reviewed those cases, and now add 72-year-old male with a pathologically confirmed T5/T6 epidural SCH lesion.

CASE DESCRIPTION

A 72-year-old male presented with slowly progressive incoordination and mild lower extremity weakness. The computed tomography (CT) scan documented an extradural T5/T6 lesion with the right T5/6 foraminal bony remodeling/extension. The MR further demonstrated that the lesion was well-circumscribed, and occupied the right T5/T6 dorsolateral spinal canal; it was hypointense on T1/hyperintense on T2-weighted images, and homogeneously enhanced with contrast [Figure 1]. Although it caused thoracic cord compression, there was no hyperintense intramedullary cord signal on the T2-weighted study. A second left C7/T1 asymptomatic foraminal lesion showed similar CT/MR imaging characteristics, but was not pathologically confirmed to be a SCH. Of interest, neither lesion involved the vertebral bodies themselves, nor spinal angiography documented no high-flow vascular malformation at either level.

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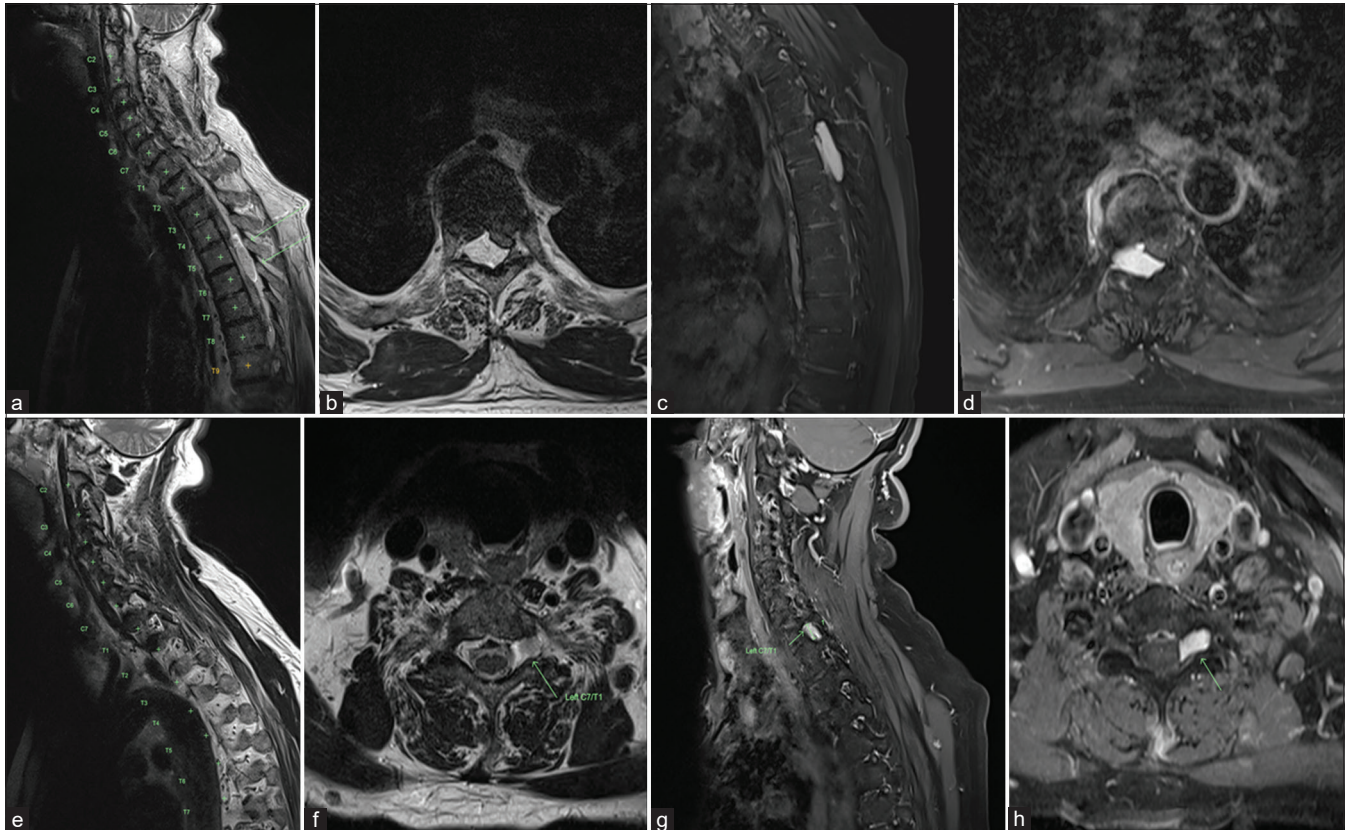


Figure 1: (a) T2 sagittal magnetic resonance imaging (MRI) demonstrating T2 hyperintense extradural mass at T5/6; (b) T2 axial MRI demonstrating right-sided dorsolateral mass with cord compression; (c and d) T1 + Gad sagittal and axial MRI demonstrating homogenous enhancement; (e and f) T2 sagittal and axial MRI demonstrating T2 hyperintense mass at the left C7/T1 foramen; (g and h) T1 + Gad sagittal and axial MRI demonstrating homogenous enhancement.

Surgery

Following a T5-6 laminectomy, a soft, purple, well-circumscribed mass was easily dissected away from the underlying dura, allowing for complete resection in a piecemeal manner.

Pathology

The histopathology of the T5/T6 lesion proved to be an epidural SCH.

Postoperative course

Postoperatively, the patient experienced a full neurological recovery.

DISCUSSION

Pure epidural SCH are rare, accounting for only 4% of spinal epidural lesions,^[7] 3–16% of spinal vascular malformations,^[2] and 12% of all SCH.^[7]

Clinical findings

The 175 patients in 61 studies all had single SCH lesions. Patients typically presented with myelopathy (64%), followed by radiculopathy (30%), and axial pain (6%) [Table 1]. The majority demonstrated slow symptom progression with only 11% presenting acutely due to intra-tumoral hemorrhage or thrombosis.^[7]

SCH lesion locations

SCH lesions predominantly involved the thoracic spine (64%), followed by the lumbar (20%), cervical (10%), and sacral spinal levels (6%). Most lesions were dorsal/dorsolateral in location. Some lateral lesions produce foraminal remodeling. When present, dumbbell morphology frequently led to the misdiagnosis of these lesions as schwannomas.^[5]

Imaging findings

On MR imaging, epidural SCH were classically iso-intense on T1, hyper-intense on T2, and homogeneously enhanced

Table 1: Characteristics of previously reported cases (Classic MRI findings: T1 isointense, T2 hyperintense, and homogeneous enhancement).

| | |
|---------------------------------|--|
| Publications | Total 61 Case reports 43 Case series 18 |
| Total Cases | 175 |
| Age | Mean: 44 Range 9–78 |
| Sex | M: F 1:1.08 |
| Location | Cervical 10% Thoracic 63% Lumbar 20% Sacral 6% |
| Orientation | Dorsal/Dorsolateral 86% Foraminal 5% Ventral 9% |
| Presentation | Myelopathy 64% Radiculopathy 30% Axial Pain 6% Acute presentation 11% |
| MRI Findings | Classic (T1 iso; T2 hyper; Enhancing) 90% Other 10% |
| MRI: Magnetic resonance imaging | |

with contrast. Intralesional T2 hyper-intensity is thought to represent stagnant blood contained within large vascular channels.^[1] When intra-tumoral hemorrhage occurs, mixed T1 signal is seen within the SCH lesion and heterogeneous enhancement is produced.

Operative findings

Although recurrent lesions may be adherent to the dura, most epidural SCH were well-defined, encapsulated, and readily separated from the dura.^[3] Their relative vascularity originates from the plexus surrounding the posterior longitudinal ligament, and/or foraminal vessels.^[4] The mean intraoperative blood loss reported for these procedures averaged 200 ml, but was typically higher for dumbbell tumors.^[5,6]

Prognosis

Surgical outcomes for SCH are generally favorable. However, those who present with the rapid onset of new neurological deficits secondary to acute intra-tumoral hemorrhages have poorer prognoses.^[3,5]

CONCLUSION

Pure epidural SCH are rare and may mimic other more common benign tumors such as schwannomas. The natural history is one of slow symptom progression with favorable outcomes. However, the prognoses are guarded for the 10% who present with acute intra-tumoral hemorrhages and develop the rapid onset of paralysis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Manoharan R, Parkinson J. Pure epidural spinal cavernous haemangioma. *Surg Neurol Int* 2021;12:523.