

## Back Pain and Inability to Walk in a Young Girl

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### Abstract

A 20-year-old woman presented to the emergency department (ED) with progressive weakness, paresthesia, and back pain lasting for 8 days. She was conscious and her vital signs were normal. Her past medical history was unremarkable. No abnormality was found on radiography and computed tomography (CT). However, magnetic resonance imaging (MRI) showed an intramedullary mass at the dorsal cord at approximately the T8-T9 level, accompanied by mild perilesional edema. Consequently, the patient was diagnosed with hemangioma. The patient underwent preoperative embolization, with minimal bleeding during surgery. (*JAEM 2015; 14: 47-8*)

**Key words:** Hemangioma, back pain, paresthesia

### Introduction

Hemangioma is a common congenital vascular malformation. However, spinal cord arteriovenous malformations (SCAVMs) are extremely rare, both in pathological and clinical series. Although less than 10 cases of SCAVMs have been reported in the literature since 1969, SCAVMs are the most common spinal vascular anomaly (1). They can be differentiated into 3 categories: fistula, glomerular, and juvenile (2).

We report one such uncommon case of a 20-year-old woman with an 8-day history of back pain, paresthesia, and inability to walk.

### Case Presentation

A 20-year-old female patient was admitted to the emergency department (ED) with paresthesia of both lower limbs and progressive inability to walk over the last 8 days. She experienced temporary but severe low back pain localized in the thoracolumbar region. During this period, she had consulted a general practitioner, who prescribed her omeprazole 20 mg per day. However, there was no significant clinical improvement, indicating that she did not respond to proton pump inhibitors (PPIs).

On admission to the ED, her vital signs were as follows: BP: 120/50 mmHg, PR: 97 beats/min, RR: 18 breaths/min, BT: 37°C, O<sub>2</sub> sat: 97% (in room air).

She was conscious (GCS=15). Physical examination revealed a decrease in muscle forces: grade 3/5 muscle weakness in the right

lower limb and 2/5 in the left lower limb. No muscular atrophy was detected. Her deep tendon reflexes were increased in both lower limbs. Her plantar reflexes were abulia. Thoracic and lumbar vertebral X-rays did not show any significant findings. Subsequent computed tomography (CT) was also not helpful and did not show any abnor-



**Figure 1.** T2-weighted image of the thoracic spine, axial view

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**Received:** 07.10.2014 **Accepted:** 24.12.2014

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DOI: 10.5152/jaem.2015.29052





**Figure 2.** T2-weighted image of the thoracic column, sagittal view **Figure 3.** T2-weighted image of the thoracic column

mal findings in the vertebral bone and space. Therefore, magnetic resonance imaging (MRI) was recommended.

T1- and T2-weighted MRI revealed a heterogeneous high-signal-intensity intramedullary mass with a signal-void rim at the dorsal cord at approximately the T8-T9 level, accompanied by mild perilesional edema. These findings resulted in the diagnosis of hemangioma (Figure 1-3).

Many treatment modalities are currently available for the management of hemangiomas, including careful observation, drug therapy, laser therapy, and surgery. We decided to perform endovascular treatment by embolization under CT guidance.

## Discussion

Data about the natural history of SCAVMs is limited. Even minor trauma can cause vertebral hemangioma with spinal cord compression (3). SCAVMs of the thoracic spine (usually at the T6 level) are relatively easy to diagnose (4). SCAVMs responsible for neurological symptoms that cause acute paraplegia are investigated in 4 categories. The most common is distortion of the spinal canal by the mass enlargement effect of the vertebral body. The second one is mass extension to the epidural space, and the other 2 categories are compression fractures and bleeding from the mass extended into the epidural space (5).

Approximately 45% of aggressive hemangiomas are associated with neurological deficits. The remaining 55% are characterized only by pain, particularly back pain. In a study of the natural history of 59 patients with SCAVMs by Fox and Onofrio from Mayo Clinic, the most common manifestation was neurological deficit. They recommended annual neurological and radiological examinations for patients with subacute thoracic myelopathy suffering from back

pain. These examinations play an important role, particularly in young females (6).

Although surgical decompression of intramedullary AVMs is extremely difficult because of the high rate of unacceptable complications, it is still the modality of choice for neurological deficits.

Vertebroplasty or selective endovascular embolization performed preoperatively for painful SCAVMs can be helpful in minimizing bleeding during surgery to reduce the postoperative complications of epidural hemangiomas. Careful follow-up is important and repeated embolization is recommended in case of significant recanalization or recurrent clinical progression (7-9).

## Conclusion

This case shows that hemangioma is an important and rare finding in patients with back pain, paraparesis, and paraplegia. In this case, we decided to perform preoperative embolization, which resulted in minimal bleeding during surgery and there was no need for blood transfusion.

**Informed Consent:** Written informed consent was obtained from patient who participated in this case.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept - S.S.V.; Design - F.E.M., S.S.V.; Supervision - F.E.M., S.S.V.; Funding - F.E.M., S.S.V.; Materials - F.E.M.; Data Collection and/or Processing - F.E.M.; Analysis and/or Interpretation - F.E.M., S.S.V., R.G., R.F.; Literature Review - F.E.M., S.S.V., R.F.; Writer - F.E.M., S.S.V.; Critical Review - F.E.M., S.S.V., R.G., R.F.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study has received no financial support.

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