Thoracic Vertebral Hemangioma With Spinal Cord Compression Presenting With Cauda Equina–Like Symptoms: A Case Report

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Abstract

A 59-year-old woman presented with progressive lower limb weakness and sensory loss, back pain, urinary retention and difficulty with bowel movements. Lumbar CT showed no obvious explanatory abnormality. A T6 sensory level and myelopathic findings prompted thoracic imaging. CT showed a hemangioma involving the T5 vertebral body and right pedicle. MRI showed extraosseous extension with severe spinal cord compression at T5–T6 and intramedullary T2 hyperintensity from T4 to T6. The neurosurgical plan included preoperative embolization followed by decompression and stabilization. This case illustrates how thoracic cord compression may present with symptoms that initially suggest a cauda equina lesion and how the neurological examination can guide imaging beyond the lumbar spine.

Keywords: Vertebral hemangioma, thoracic myelopathy, spinal cord compression, cauda equina-like symptoms

Introduction

Vertebral hemangiomas are vascular lesions that are often incidental. Symptomatic lesions may extend beyond the vertebra and compress neural structures [1,2,3,4,5,6,7,8,9,10,11,12,13]. This report describes a thoracic vertebral lesion in a patient with progressive leg and sphincter symptoms.

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Clinical Case

A 59-year-old right-handed woman with hypertension and deep vein thrombosis presented with progressive lower limb weakness and sensory loss. Her surgical history included appendectomy, cesarean section and cholecystectomy. Medications included apixaban, levothyroxine, omeprazole, oxycodone and trazodone.

She recalled mild symptoms as early as May 2024, with worsening after a fall at work on 25 December 2024. She subsequently required a walker and developed right lower limb deep vein thrombosis in March 2025. Leg sensory loss progressed over months. Weakness worsened over the two days before presentation, and she reported four days without urination or bowel movements, with back pain. Approximately 1 L of urine was found in the bladder in the emergency department.

Brain MRI with gadolinium showed mild nonspecific white matter changes. Unenhanced lumbar CT showed no obvious explanatory abnormality (Figure 1). Examination showed paraparesis, a T6 sensory level, persistent lower limb reflexes and an upgoing toe. The findings prompted thoracic imaging. The documented initial plan included bed rest, treatment of urinary tract infection and monitoring of urinary retention.



Figure 1. Lumbar CT showed no obvious explanatory abnormality.

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Thoracic Imaging

Thoracic CT showed a hemangioma involving the T5 vertebral body and right pedicle. MRI showed an enhancing T2-hyperintense osseous lesion at T5 with involvement of the right pedicle, transverse process and spinous process. Enhancing posterior and right epidural soft tissue was centered at T5. Extraosseous extension produced severe cord compression at T5–T6, leftward cord deviation and severe thecal sac stenosis. Intramedullary T2 hyperintensity extended from T4 to T6, raising concern for myelopathy.



Figure 2A. Sagittal contrast-enhanced MRI of the thoracic spine.

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Axial MRI

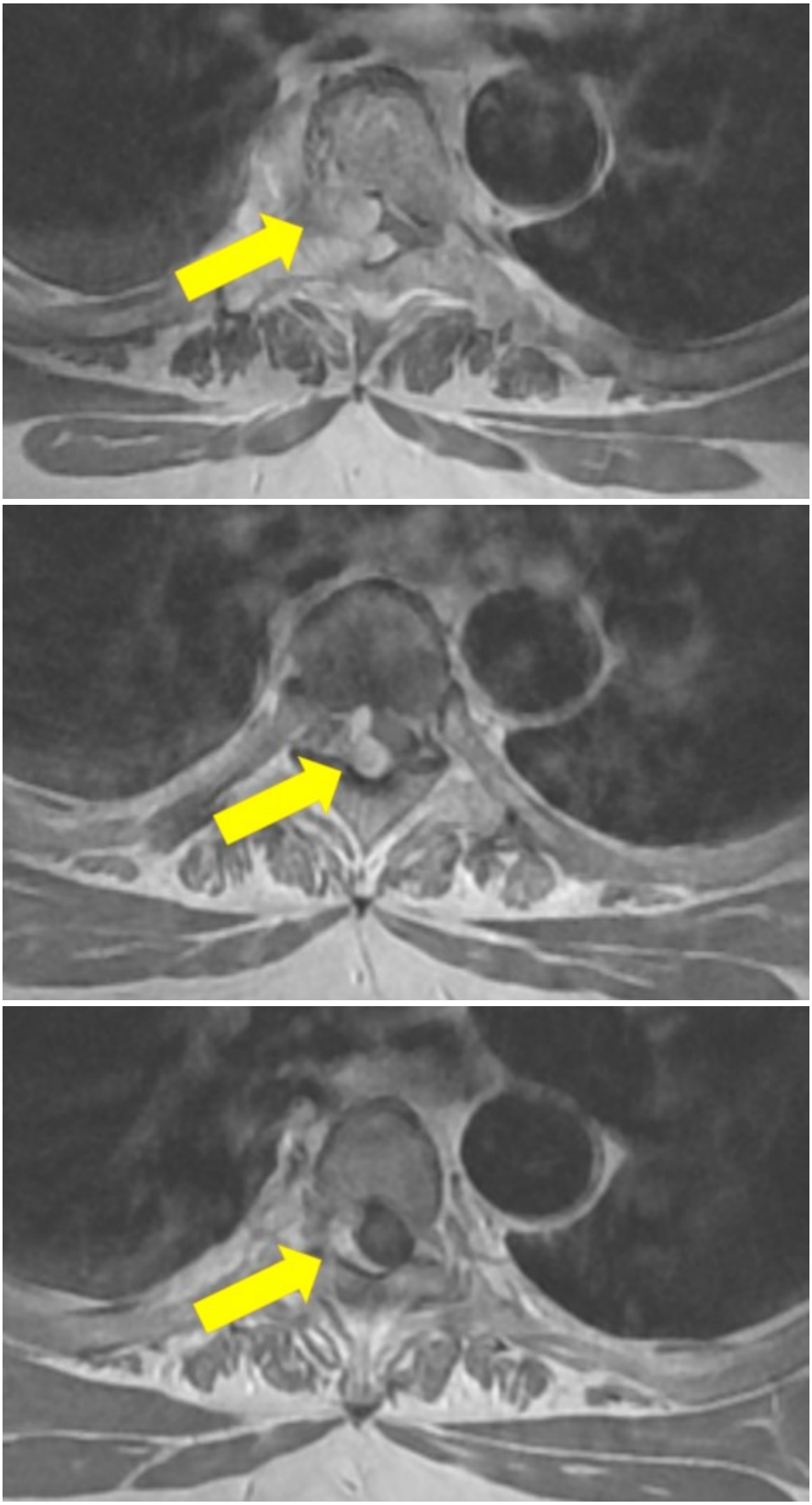


Figure 2B. Axial thoracic MRI. Arrows mark the findings depicted in the published panels.

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Management Plan

Neurosurgery planned preoperative embolization followed by resection, decompression and stabilization. The proposed operation included transpedicular decompression at T5 and T6, decompression of the neural elements from T4 to T6 and fusion from T3 to T8.

Discussion

A thoracic sensory level and myelopathic signs helped localize the lesion in this case. CT and MRI provide complementary information about vertebral architecture, extraosseous extension and cord compression. Trabecular patterns on imaging can support the diagnosis, while atypical lesions may overlap with other vertebral or epidural abnormalities [10,11,18,19,20,21,22,23,24,25,26,27].

Reported approaches to symptomatic vertebral hemangiomas include decompression, stabilization and selected use of embolization or other adjuncts [13,14,15,16,17,28,29]. Management depends on the degree of neural compression, vertebral stability and clinical findings.

Conclusion

Progressive paraparesis and sphincter symptoms may occur with thoracic cord compression. In this case, a thoracic sensory level guided imaging to a T5 vertebral hemangioma with extraosseous extension and severe cord compression.

Declarations

The authors report written informed consent for publication, preservation of patient anonymity and compliance with the Declaration of Helsinki and applicable standards. No competing interests or funding were reported. Ethics approval, data availability and acknowledgements: not applicable.

Author Contributions

Conceptualization: S.H.K. and D.T. Methodology: S.H.K. and S.A. Investigation and original draft: S.H.K. Review, editing and visualization: S.H.K. and D.T. Supervision and project administration: D.T.

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