



Texas Society of Neuroradiology (TSNR)

Excerpta Abstract

2026 Annual Meeting – Dallas, TX

February 21–22, 2026

Rare Case of Aortic Spinal Fistula

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Clinical History

A 69-year-old male with history of remote cervical spine injury and subsequent quadriplegia, hypertension, atrial fibrillation, and recent fall with spinal fracture presented for elevated blood pressure with systolic measurements greater than 180 mmHg over the days prior to presentation. The patient became hemodynamically stable in the ED. Limited chart review from an outside institution revealed the patient had a Chance fracture at L2 three months prior. Imaging at this current admission demonstrated an aortic spinal fistula at the L1-L2 level. Given the patient's co-morbidities and need for a high-risk open surgical approach, the patient and his family decided on hospice and comfort care measures.

Imaging Findings

CTA chest, abdomen and pelvis: There is a background of nearly completely fused and ankylosed rigid spine. There are abnormally distracted, angulated, and remodeled L1 and L2 vertebral bodies with adjacent new bone formation. Vascular outpouching from the posterior aspect of the abdominal aorta at L1-L2 (A) with extravasation of contrast filling the distracted space between the L1-L2 vertebral body osseous elements and extending posteriorly towards the spinal canal (B, C). These findings are consistent with ruptured aortic pseudoaneurysm.

MRI entire spine without IV contrast: Redemonstrated nearly completely ankylosed rigid spine and distracted remodeled L1-L2 vertebral bodies. T2 hypointense lobulated signal consistent with hemorrhage fills the distracted space between the L1-L2 vertebral body osseous elements and corresponds to the ruptured pseudoaneurysm/contrast extravasation on CT (D). The hemorrhage continues from the aorta, through the osseous elements, and into the spinal canal. Hemorrhage fills the thecal sac from L2 through the sacral spinal canal with dark T2 hemorrhage surrounding the cauda equina nerve roots (D, E) as well as the inferior conus medullaris (D, F). These findings are consistent with aortic spinal fistula. Of note, there is prior cervical spinal cord injury with myelomalacia from C5-C7 (G).

Discussion

Many cases of aortic fistula described in the literature include aortoenteric fistulas but very few between the aorta and spinal column, and often in the context of a prior aortic aneurysm repair. This case presents a rare example of an aortic spinal fistula with connection from the posterior aspect of the abdominal aorta to the spinal canal and thecal sac. The patient's ankylosed and rigid spine in the context of remote cervical spinal cord injury is consistent with Charcot spine. A background of Charcot spine and recent history of Chance fracture at L2 likely led to the L1-L2 osseous abnormality and contributed to creation of the aortic spinal fistula.



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Teaching Point

Aortic spinal fistula is a rare variant of aortic fistula that may be seen in the background of Charcot spine and recent vertebral fracture. Imaging characteristics associated with the fistulous tract through the vertebral column can potentially mimic other pathologies of the spine such as discitis/osteomyelitis and malignancy.

References

Farnsworth P, Bailey K, Baardsen E, et al. An aortic wall to vertebral body fistula presenting as a lytic lesion. J Radiol Case Rep 2020;14:1-9. DOI: <https://doi.org/10.3941/jrcr.v14i9.3270>.

Figures

