

Idiopathic spinal cord herniation

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A 45-year-old woman presented with mild weakness of her right foot and decreased temperature sensation of her left foot. These symptoms were slowly progressive for the previous 3 years. She had no history of spinal trauma or surgery of the spine. Neurological examination demonstrated right-sided Brown-Sequard syndrome below T7. The clinical examination revealed a spastic gait and weakness in the right lower extremity. On the right side, the patellar and Achilles tendon reflexes were hyperactive and Babinski sign was present. There was reduced pain and temperature sensation on the left side up to the T8 level. Computed tomography (CT) myelography and magnetic resonance imaging (MRI) of the thoracic spine [Figures 1-3] showed ventral displacement of the thoracic spinal cord. A diagnosis of idiopathic spinal cord herniation was made on the basis of characteristic imaging features.

Idiopathic spinal cord herniation is spontaneous displacement of the spinal cord through an anterior or antero-lateral dural defect.^[1-5] It is a rare clinical condition of progressive thoracic cord dysfunction seen in middle-aged patients, with a female predominance.^[1-5] Clinical findings are nonspecific and patients usually present with slowly progressive Brown-Sequard syndrome or paraplegia. The thoracic spine is commonly involved between the T4 and T7 vertebrae. The spinal cord gets tethered at the side of herniation with its ventrolateral shift or rotation, which causes unilateral damage of the lateral funiculus and, thereby, the symptoms.^[2] Characteristic MRI findings include dural defect through which ventral displacement of the thoracic spinal cord occurs with enlargement of the dorsal subarachnoid space.^[1] CT myelography or phase contrast MRI help in excluding a posterior compressing cystic lesion like arachnoid cyst. "Nuclear trail" sign, i.e. linear area of hyperattenuation at CT, which represents a calcific defect in the vertebral body endplate adjacent to the herniated disc, opposite the cord herniation, is also described as the characteristic sign.^[2]

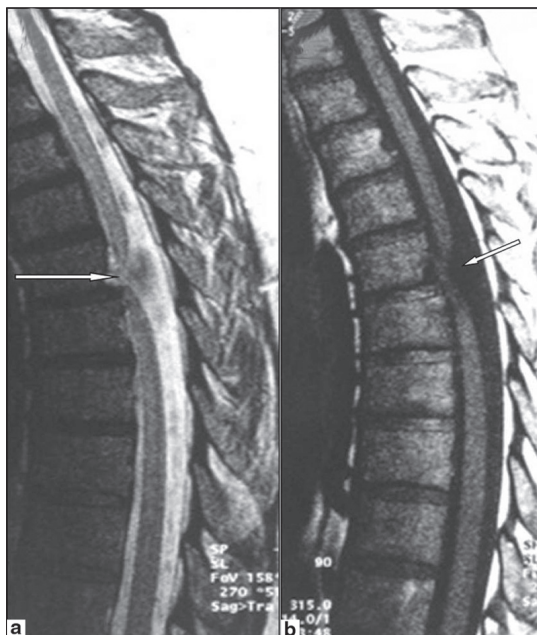


Figure 1: T2 W (a) and T1 W (b) sagittal images showing focal anterior kinking with ventral displacement of the spinal cord (arrow) at the T7-8 level. In addition, there is focal thinning of the cord and widening of the posterior subarachnoid space. A cerebrospinal fluid flow void is seen dorsal to the cord at the level of herniation

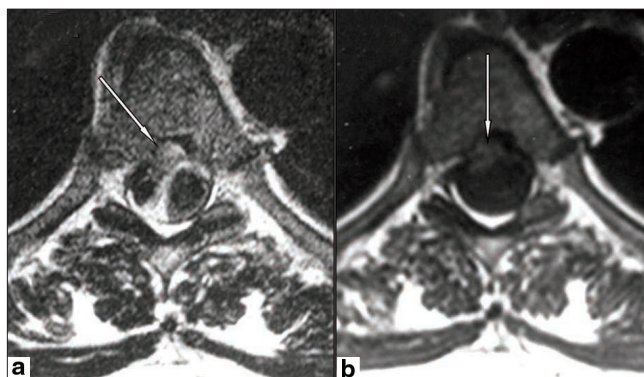


Figure 2: T2 W (a) and T1 W (b) axial images show spinal cord adhered to the anterior dura, abutting the posterior vertebral margin and is rotated (arrows). Flow-related artifact is seen in the widened cerebrospinal fluid space on the T2 axial image

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Figure 3: Axial (a) and sagittal reformatted (b) computed tomography myelogram images showing cord herniation of the anterior portion of the cord into sclerotic notch along the posterior vertebral margin (white arrows). A linear area of hyperattenuation (black arrows) suggestive of “Nuclear trail” sign is also seen in the axial images. Areas of sclerosis and paravertebral calcification are also seen

References

1. Parmar H, Park P, Brahma B, Gandhi D. Imaging of idiopathic spinal cord herniation. *Radiographics* 2008;28:511-8.
2. Spissu A, Peltz MT, Matta G, Cannas A. Traumatic transdural spinal cord herniation and the nuclear trail sign: Case report. *Neurol Sci* 2004;25;151-3.
3. Maira G, Denaro L, Doglietto F, Mangiola A, Colosimo C. Idiopathic spinal cord herniation: Diagnostic, surgical and follow-up data obtained in five cases. *J Neurosurg Spine* 2006;4:10-19.
4. Iyer RV, Coutinho C, Lye RH. Spontaneous spinal cord herniation. *British journal of neurosurgery* 2002;16:507-22.
5. Sasaoka R, Nakamura H, Yamano Y. Idiopathic spinal cord herniation in the thoracic spine as a cause of intractable leg pain: Case report and review of the literature. *J Spinal Disord Tech* 2003;16:288-94.

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