Management of a patient with spinal cord herniation caused by intraspinal bone spur: A case presentation

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Abstract

Objective: The pathophysiology of idiopathic spinal cord herniation (ISCH) remains unknown. However, several different factors have been postulated, such as congenital causes (ventral dura mater duplication, preexisting pseudomeningocele, or other congenital dural defects), inflammation, remote spinal trauma, or thoracic disc herniation.
Herein, a case management of spinal cord herniation caused by an intraspinal spur has been presented along with a relevant literature review.

Methods: A 56-year-old patient presented with Brown–Sequard syndrome persisting for >1 year.
The patient did not have a history of trauma. A magnetic resonance imaging of the spinal axis revealed a ventral spinal cord displacement in the TH 6/7 level. A supplementary thin-sliced computed tomography of the spine revealed a bone spur at the same level.
TH 6 and 7 laminectomy was performed. The cranial and caudal end of the right paramedian ventral dural defect was visualized and enlarged. Following the extradural spinal cord mobilization by denticulate ligament transection, the spinal cord was finally released. The spinal cord was rotated and the ventral closure of the dural defect was performed by continuous suture.

Results: The patient recovered from surgery without additional deficits. The patients' postoperative gait, sensory, and motor function deficits improved.

Conclusion: Since the first description of spinal cord herniation by Wortzman et al. in 1974, approximately 260 cases have been reported in the literature. In addition to other causes, intraspinal spur may be a cause of spinal cord herniation.

Image 1: (red arrow: spinal cord herniation; blue circle: Dural defect; yellow star: extradural part of the spinal cord)

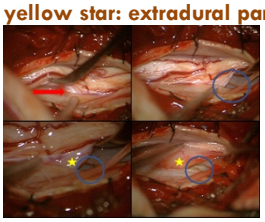
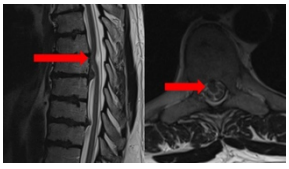


Image 2: (red arrow: spinal cord herniation)



Recent Publications

1. Wortzman G, Tasker RR (1974) Spontaneous incarcerated herniation of the spinal cord into a vertebral body: a unique cause of paraplegia. Case report. *J Neurosurg*. 41(5):631–5.
2. Sasani, Mehdi (2009) Idiopathic spinal cord herniation: case report and review of the literature." *The journal of spinal cord medicine* vol. 32,1: 86-94.
3. Bartels RHMA (2017) Pathogenesis of Ventral Idiopathic Herniation of the Spinal Cord: A Hypothesis Based on the Review of the Literature. Front. Neurol. 8:476.
4. Berg-Johnsen (2014) Idiopathic ventral spinal Cord Herniation: an increasingly recognized Cause of thoracic myelopathy. Journal of Central Nervous System Disease 6 85–91
5. Ulrich, C.T., Fung, C. (2018) Disc herniation, occult on preoperative imaging but visualized microsurgically as the cause of idiopathic thoracic spinal cord herniation. *Acta Neurochir* 160, 467–470.
6. Summers, Johanne C (2013) Idiopathic spinal cord herniation: Clinical review and report of three cases. *Asian journal of neurosurgery* vol. 8,2: 97-105
7. Regensburger, M., Schlachetzki, J.C.M. (2020) Long-term course of anterior spinal cord herniation presenting with an upper motor neuron syndrome: case report illustrating diagnostic and therapeutic implications. *BMC Neurol* 20, 321

Photograph



Biography

Dr Hunziker has her expertise in evaluation and passion in improving the health and wellbeing. Her case report based on a successful neurosurgical technique for the rare case of myelonherniation. This creates distribution of knowledge concerning the treatment of myelonherniation worldwide and allows to improve healthcare. She has built this approach together with renowned spine neurosurgeon specialists. Her activities include evaluation, teaching and administration both in hospital and education institutions. The methodology is based on description and judgment.

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Notes/Comments