Idiopathic spinal cord herniation

- Idiopathic spinal cord herniation in patients with ankylosing spondylitis: a dual-center case series of 7 patients
- A successful surgical management of spinal cord herniation in a patient with old thoracic spine fracture: a case report from Syria
- Endoscopically Assisted Release Surgery for Idiopathic Spinal Cord Herniation: Technical Case Instruction
- Prediction of MRI in intra-operative findings for spinal meningeal diseases
- Distal Pedicle Subtraction Osteotomy for Ankylosing Spondylitis With the Dual Complications of Andersson Lesions and Idiopathic Spinal Cord Hernia: A Rare Case Report
- Atraumatic Cervical Disc Herniation With Rapidly Progressive Myelopathy in a 47-Year-Old Male: A Case Report
- Atypical presentation of arachnoid web causing paraparesis with absence of sensory symptoms
- The clinical evolution of patients with idiopathic spinal cord herniation: a case series

Rare. The spinal cord herniates through a defect in the dura usually located anteriorly or anterolaterally between T2–8.

Bone erosion anterior to the dural defect may occasionally be seen

Frequently associated with a calcified disc fragment, which theoretically may have gradually eroded through the dura.

Ventral cord herniation, also known by a variety of other terms such as spontaneous thoracic cord herniation or idiopathic spinal cord herniation, is a rare cause of focal myelopathy due to herniation of the thoracic cord through a dural defect.

Post surgical cord herniation can occur at any level, usually dorsally in the cervical region following laminectomy.

In the majority of cases no possible antecedent cause is identified and the dural defect is thought to be congenital or idiopathic in nature. In a number of patients a history of previous trauma or surgery in the thoracic region may be present

Clinical presentation is variable, generally with features of a myelopathy. However, progressive Brown-Sequard syndrome is classical, due to herniation of only one side of the cord [1].

Idiopathic spinal cord herniation (ISCH) is an uncommon cause of thoracic myelopathy in which the spinal cord herniates or prolapses through an anterior or lateral defect in the dura mater.

This dural defect of unknown origin, is distinguished from herniation with a documented traumatic cause or with postoperative origin. Since the first report of idiopathic spinal cord herniation was published by Wortzman et al in 1974 [2].

Idiopathic ventral thoracic spinal cord herniation

see Idiopathic ventral thoracic spinal cord herniation.

Presentation

Commonly presents as an incomplete Brown-Séquard syndrome (with relative sparing of posterior columns). Symptoms may be due to distortion of the spinal cord, but vascular injury may also play a role.

Differential diagnosis

The main differential diagnosis is with a dorsal arachnoid cyst.

Both result in increased subarachnoid space posterior to the spinal cord, and a ventral kinking of the cord. Contiguous CSF pulsation artifacts on MRI can be seen with cord herniation, whereas an arachnoid cyst tends to interrupt this.

Surgery

Requires a lateral or anterolateral approach to access the anterior spinal canal while minimizing spinal cord manipulation. The dural defect is widened which usually results in a reduction of the spinal cord herniation. A sling of dural substitute can then be slid anterior to the cord to prevent reherniation.

Case reports

A 33-year-old female presented with acute paraparesis after spinal anesthesia for a cesarean section. Magnetic resonance imaging (MRI) revealed an intradural mass from the posterior of the T6 to the T8-T9 interface. Parvaresh et al. operated on the patient and after laminectomy of T6 to T9, the dermoid tumor containing hairs was totally resected and cord was decompressed entirely. After 6 months, the patient is without any neurological deficit. Puncturing the dura with cerebrospinal fluid (CSF) in the presence of an extramedullary mass could cause spinal cord herniation through the blockade. In these cases, awareness about related signs even in the absence of symptoms or complaints could help us to prevent post-SA neurological deficit [3].

An exceedingly rare case of ISCH at the C7-T1 intervertebral disc level in a 44-year-old male presenting with eight months of isolated unilateral sensory symptoms. The diagnosis was made based on the findings on the patient's magnetic resonance imaging of the spinal cord, including the presence of an extradural cerebrospinal fluid collection. Surgical reduction of the herniated segment

and patching of the dural defect resulted in a remarkable clinical improvement beginning in the immediate postoperative period. Follow-up MRIs showed no sign of reherniation, and the patient remained asymptomatic after one year of follow-up. Early diagnosis and surgical intervention led to an excellent early outcome in this case. However, long-term follow-up is necessary to monitor for reherniation and relapse of the symptoms in ISCH patients [4].

1)
Watters MR, Stears JC, Osborn AG et-al. Transdural spinal cord herniation: imaging and clinical spectra. AJNR Am J Neuroradiol. 1998;19 (7): 1337-44. AJNR Am J Neuroradiol
2)
Wortzman G, Tasker RR, Rewcastle NB, Richardson JC, Pearson FG. Spontaneous incarcerated herniation of the spinal cord into a vertebral body: a unique cause of paraplegia. Case report. J Neurosurg. 1974 Nov;41(5):631-5. PubMed PMID: 4424434.
3)
Parvaresh M, Bahrami E, Ahmadi S, Fattahi A, Farid A. Cord Herniation through the Site of Undiagnosed Thoracic Dermoid Tumour during Spinal Anaesthesia; Report of a Case and Describing Ways to Avoid. Prague Med Rep. 2023;124(2):181-188. doi: 10.14712/23362936.2023.15. PMID: 37212137.
4)
Farrokhi MR, Mousavi SR, Rafieossadat R. Idiopathic spinal cord herniation at the cervicothoracic junction level presenting with unilateral sensory symptoms. Clin Neurol Neurosurg. 2023 Jan;224:107526. doi: 10.1016/j.clineuro.2022.107526. Epub 2022 Nov 15. PMID: 36442311.