

Symptomatic Thoracic Nerve Root Herniation into an Extradural Arachnoid Cyst: Case Report and Review of the Literature

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Background

Spinal extradural arachnoid cysts (SEACs) are relatively rare and usually asymptomatic. They preferentially are situated in the thoracic extradural space and almost always dorsal. SEACs may present with back pain and/or cord compression symptoms. Needle aspiration, needle fenestration, or open surgical resection/fenestration have been reported as treatment modalities.

Case Description

We present a 35-year-old woman who complained of radiating pain from the right lower thoracic region of her back toward the right inguinal region, which was aggravated upon defecation and straining. Magnetic resonance imaging (MRI) revealed an extradural cyst located laterally at T11–T12 level on the right, with a nerve root herniation. During a T11–T12 hemilaminectomy, on resection of the cyst wall, a nerve root was noted to be herniating into the cyst cavity through a dural defect. The nerve root was released and repositioned intradurally, followed by direct suture of the dural tear. Histologic findings of the cyst wall confirmed an arachnoid cyst. Postoperative course was uneventful without complications. Postoperative MRI confirmed a complete resection of the cyst. Five years after surgery, the patient is asymptomatic with complete recovery.

Conclusions

Thoracic SEACs can present with radiating pain due to a transdural herniation of a thoracic nerve root into the cyst, potentially due to a mechanism of intermittent pressure gradients between the intradural and extradural spaces. MRI can prove beneficial in visualizing the nerve prolapsing into the cyst. Open resection of the cyst wall, reduction of the nerve root herniation, and subsequent direct closure of the dural tear led to complete recovery.