Case Lessons 43-2026

Discal Cyst as a Rare Cause of Lumbar Radiculopathy: A Case Report

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Introduction

Discal (discogenic) cysts are rare intraspinal extradural lesions that originate from the intervertebral disc and may cause radiculopathy by compressing adjacent nerve roots. First described by Chiba et al. in 2001, discal cysts are characterized by a cystic structure that communicates directly with the intervertebral disc, distinguishing them from other cystic spinal lesions such as synovial cysts or sequestered disc fragments. Due to their rarity and nonspecific clinical presentation, discal cysts are frequently misdiagnosed as lumbar disc herniation. We present a case of a discal cyst at the L5–S1 level in a 45-year-old woman, highlighting its clinical presentation, imaging features, surgical management, and outcome, and we discuss the case in the context of the existing literature.

Case Presentation

A 45-year-old woman presented with a several-month history of **left-sided radicular pain**, radiating along the S1 dermatome. The pain had progressively worsened over time and was unresponsive to conservative treatment, including analgesics and physical therapy. There was no history of trauma, infection, fever, weight loss, or bowel or bladder dysfunction.

Neurological examination revealed reproduction of radicular pain with straight-leg raising on the left side. Motor strength, sensory examination, and deep tendon reflexes were normal.

Magnetic resonance imaging (MRI) of the lumbosacral spine demonstrated a **well-circumscribed cystic lesion at the L5–S1 level**, located in the left anterior epidural space and adjacent to the intervertebral disc. The lesion was hypointense on T1-weighted images and hyperintense on T2-weighted images, exerting mass effect on the left S1 nerve root. No connection with the facet joint was identified, making a synovial cyst unlikely. Based on the close relationship to the intervertebral disc and imaging characteristics, a **discal cyst** was suspected.

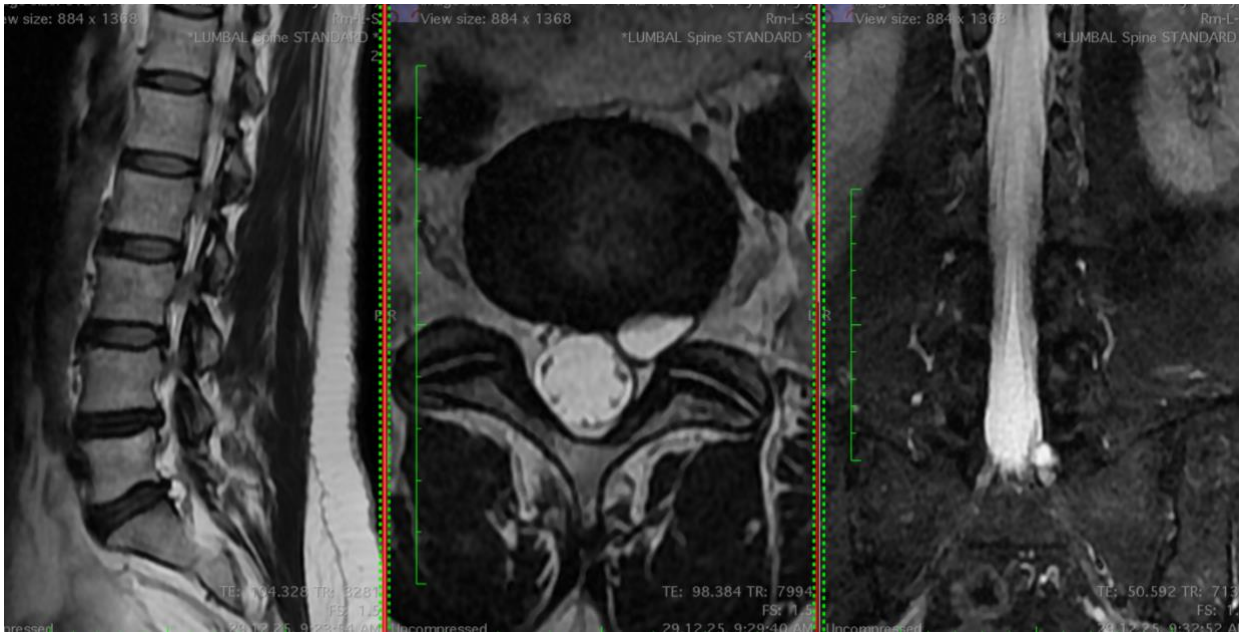

Fig 1: MRI of the lumbar spine demonstrated a ***well-circumscribed cystic lesion at the L5–S1 level***

Given the progressive nature of symptoms and radiological evidence of nerve root compression, surgical intervention was recommended.

Results

The patient underwent a left-sided L5–S1 microsurgical approach. Intraoperatively, a cystic lesion was identified in the epidural space compressing the left S1 nerve root. The cyst was carefully dissected and completely excised. A communication between the cyst and the adjacent intervertebral disc was observed, confirming the diagnosis of a discal cyst.

The procedure was completed without intraoperative complications. The postoperative course was uneventful, and the patient reported immediate relief of radicular pain. No new neurological deficits were observed.

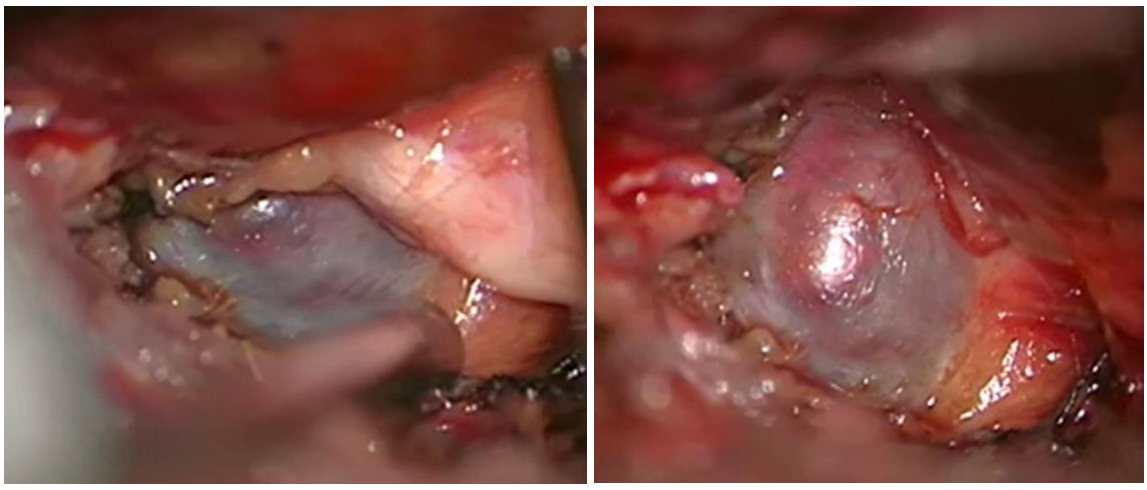

Fig 3: *intraoperative view of the cyst compressing the S1 nerve root*

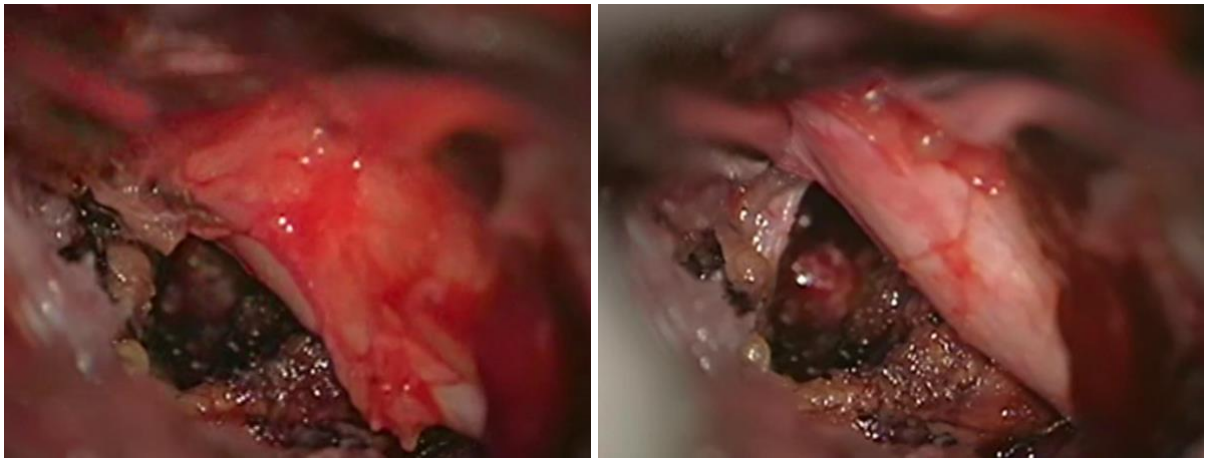

Fig 4: *Intraoperative view showing complete removal of the cyst and the nerve root free from compression*

Postoperative MRI demonstrated **complete resection of the cystic lesion** with adequate decompression of the left S1 nerve root and no residual lesion. At follow-up, the patient remained asymptomatic and had returned to normal daily activities.

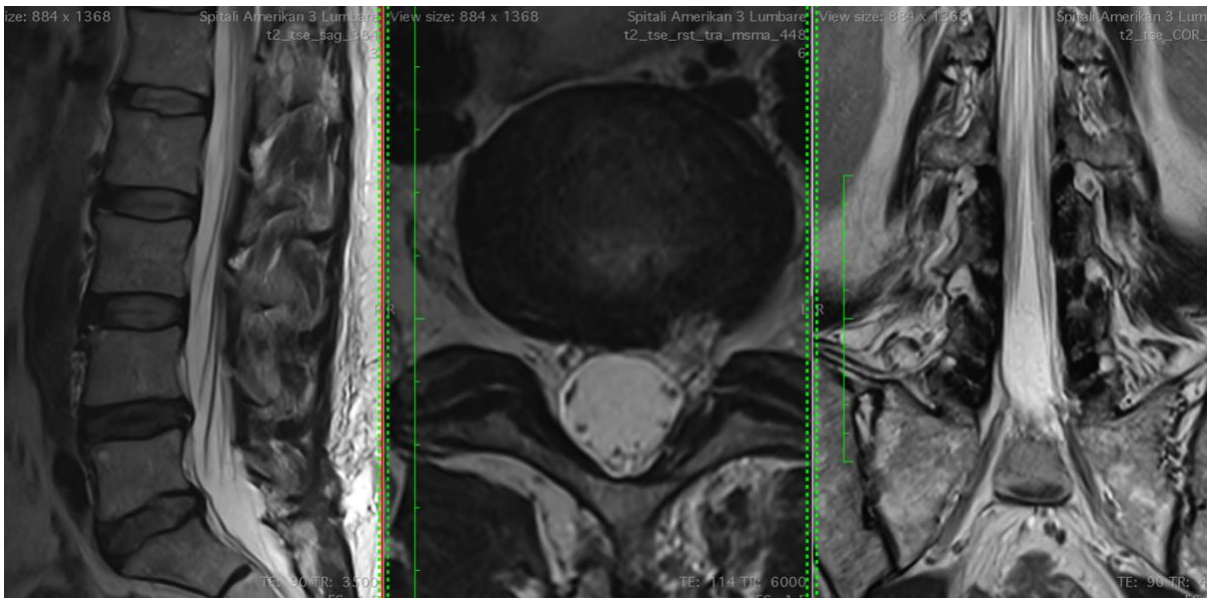

Fig 2: Postoperative MRI: ***complete resection of the cystic lesion***

Discussion

Discal cysts represent a rare but important differential diagnosis in patients presenting with lumbar radiculopathy. Since their first description by Chiba et al., these lesions have been

increasingly recognized, although they remain uncommon, with approximately 200 cases reported in the literature. Chiba et al. established the defining feature of discal cysts as a cystic lesion communicating directly with the intervertebral disc, a finding that remains central to diagnosis.

Radiologically, discal cysts may closely mimic lumbar disc herniation. Kono et al. emphasized the role of MRI in differentiating discal cysts from sequestered disc fragments and synovial cysts, particularly through identification of a well-defined cystic structure in the anterior epidural space and lack of connection to the facet joint. Contrast-enhanced MRI may further aid differentiation, although definitive diagnosis is often confirmed intraoperatively.

Aydin et al., in the first major literature review, highlighted the demographic and clinical characteristics of discal cysts, noting a predominance in young to middle-aged adults and frequent presentation with radicular pain. They also emphasized that discal cysts are likely underdiagnosed due to their resemblance to more common degenerative conditions.

From a therapeutic standpoint, Marshman et al. demonstrated that surgical excision provides excellent outcomes in symptomatic patients, with low recurrence rates. Larger Asian case series reported by Lee, Kim, and colleagues further supported surgical management as a definitive treatment, particularly in patients with progressive symptoms or failure of conservative therapy.

The present case aligns well with these observations, demonstrating typical clinical presentation, imaging findings, intraoperative confirmation of disc–cyst communication, and excellent postoperative outcome following complete surgical excision.

Conclusion

Discal cysts are a rare cause of lumbar radiculopathy that can closely mimic disc herniation. Awareness of this entity is essential for accurate diagnosis and appropriate management. **In patients with progressive radicular symptoms and a cystic lesion adjacent to the intervertebral disc, discal cyst should be considered.** Surgical excision remains a safe and effective treatment, providing excellent clinical and radiological outcomes.

References

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