Diskal Cyst: An Unusual Cause of Lumbar Radiculopathy

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Diskal cyst is a rare cause of radiculopathy. We describe the presentation, imaging, surgical management, and outcome of a 24-year-old man who presented with classic L5 radiculopathy. After conservative management failed, he underwent a standard L4/5 microdiskectomy with resection of the cyst. His symptoms improved after surgery

Key Words: cyst, disk, lumbar, radiculopathy, spinal surgery

Abbreviations Used: MR, magnetic resonance

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Lumbar disk herniation, a frequent cause of lower back pain and radiculopathy, is one of the most common indications for spinal surgery. Occasionally, other disease processes may mimic disk herniation. One such entity, diskal cysts, has rarely been reported. We therefore discuss the presentation, imaging, surgical management, and outcome of a 24-year-old man with a diskal cyst that caused L5 radiculopathy.

Case Report

A 24-year-old man had experienced 14 months of lower extremity pain on the left side in the distribution of the L5 nerve root. His strength was graded as 5/5 in all muscle groups. His reflexes and light touch were normal. His ipsilateral straight leg raise was positive. His symptoms had a rapid onset and were resistant to conservative management, including steroids and physical therapy. MR imaging of the lumbar spine showed a mass lesion arising from the L4-5 disk and impaction of the left L5 neural foramen (Fig. 1). In August 2007, the patient elected to undergo an L4-5 microdiskectomy.

Surgical Management

The patient underwent a standard approach for a left-sided L4-5 microdiskectomy. The left L5 pedicle, foramen, and nerve root were identified. No disk bulge was observed at the level of L4-5. However, the L5 nerve root was elevated dorsally. After further exploration, we found a cystic structure arising from the L4-5 disk space compressing the L5 root. The cyst was adherent to the ventral aspect of the L5 nerve root and di-

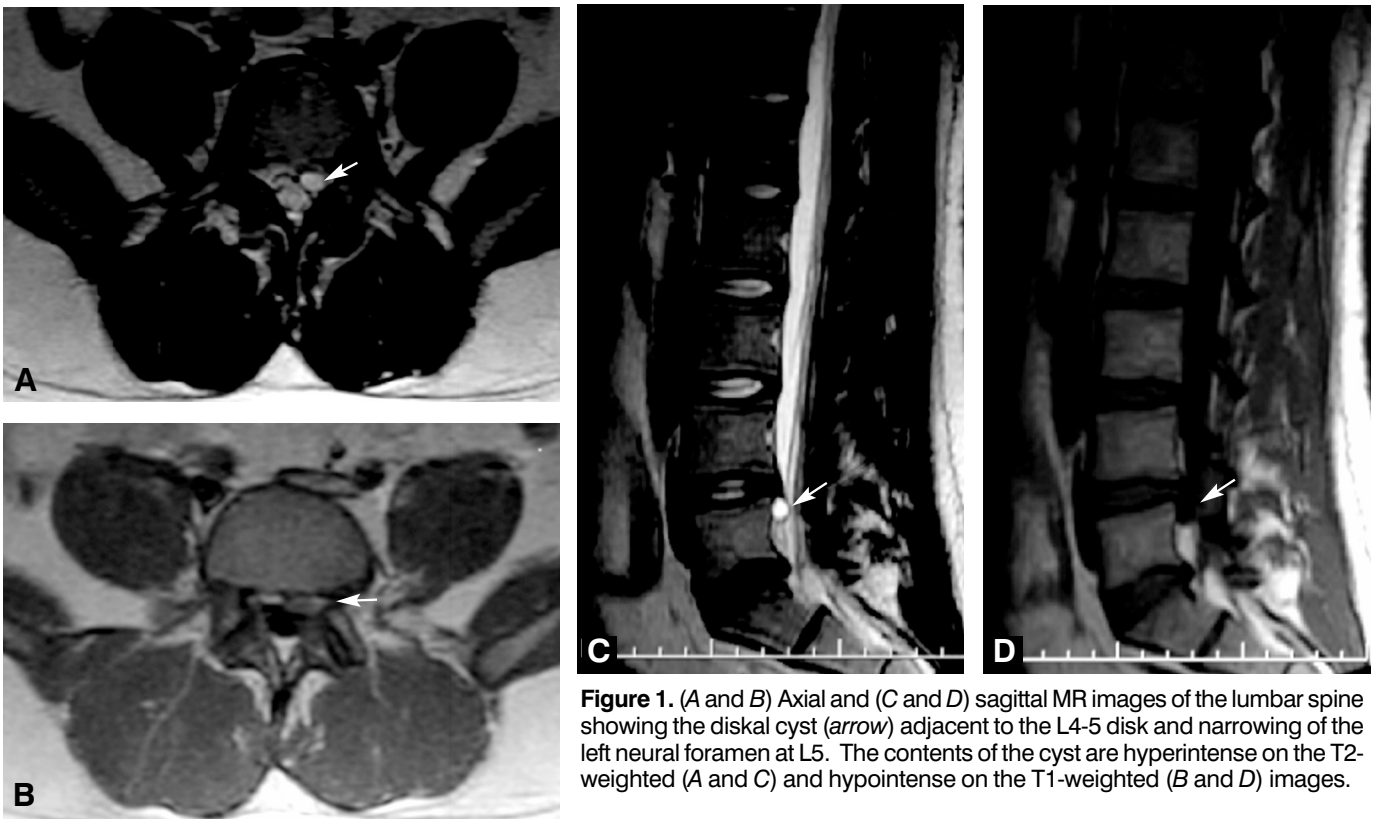

Figure 1. (*A* and *B*) Axial and (*C* and *D*) sagittal MR images of the lumbar spine showing the diskal cyst (*arrow*) adjacent to the L4-5 disk and narrowing of the left neural foramen at L5. The contents of the cyst are hyperintense on the T2-weighted (*A* and *C*) and hypointense on the T1-weighted (*B* and *D*) images.

rectly communicated with a small annular tear in the caudal aspect of the annulus. The cyst was carefully dissected free and removed. Conservative exploration of the disk space via the annular tear revealed no free fragments. A conservative foraminotomy was performed, and the nerve root was noted to be decompressed adequately. The wound was closed in a standard fashion.

Postoperative Course

After surgery the patient reported resolution of his symptoms. His neurological examination was normal, and he was discharged home the same day. At his 2-month follow-up examination, he reported that his radiculopathic pain had improved significantly compared to his preoperative status. However, he still experienced some recurrent pain (rated as 4 on a scale of 1 (least) to 10 (most)) in the left L5 distribution. His strength and sensory examinations were normal. MR imaging at that time was unremarkable. He was tapered from steroids and underwent a 1-month course of physical therapy. At 6 months his radiculopathy had resolved and he had occasional back pain. At 24 months he had no recurrence of radiculopathy and occasional back pain.

Discussion

Diskal cysts are characterized by radiculopathy, which is clinically indistinguishable from a disk herniation. These cysts are extradural and arise ventrally within the spinal canal. Unlike other intraspinal cysts, diskal cysts exist in direct continuity with the corresponding intervertebral disk. Cystic contents are hypointense on T1-weighted MR imaging and hyperintense on T2-weighted MR imaging and can therefore be distinguished from the imaging characteristics of herniated disks.

The pathogenesis of diskal cysts is unknown and the subject of debate. The finding of blood products in some cysts has led to speculation that diskal cysts emerge from a resolving hematoma caused by an initial injury to the disk. Others propose a degenerative mechanism similar to that underlying the development of ganglion cysts. Diskal cysts have also resolved spontaneously without surgical intervention.[2]

In 2001 Chiba et al.[1] published the largest case series of diskal cysts (eight relatively young patients). Their patients' symptoms, which consisted of pain in a single nerve root distribution, resolved immediately after the cyst was removed. Kishen et al.[3] described similar findings in a 13-year-old girl with S1 radiculopathy, which was relieved completely by surgical decompression. Most recently Nabeta et al.[4] reported five males with diskal cysts, all of whom presented with radiculopathy indistinguishable from a ruptured disk. After surgical treatment all five patients had immediate, durable resolution of their symptoms.

Initially, our patient described complete relief of his symptoms. In retrospect, he may have had some residual radiculopathy. We have no direct evidence, but we postulate that the cystic contents

irritated the nerve and may have been responsible for his persistent radiculopathy. For this reason, we chose to treat him with steroids.

Conclusion

A diskal cyst should be considered in the differential diagnosis of mass lesions causing radiculopathy, particularly if imaging characteristics are consistent with a cystic structure attached to the disk space. Microsurgical management is similar to microdiskectomy and can improve or resolve the associated symptoms.

References

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