

Lumbar Intervertebral Discal Cyst: A Very Rare Cause of Low Back Pain and Radiculopathy in Adults

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ABSTRACT

The lumbar intervertebral discal cyst is a very rare benign spinal lesion. Only a few cases are reported in the literature. It may cause spinal nerve root compression and subsequent neurological deficits like low back pain and radiculopathy. MRI is the investigation of choice. Surgical excision of the cyst and the decompression of the nerve root and the thecal sac is the definitive treatment. Here, we are presenting a similar case in 26-year male, its diagnosis, surgical management, and outcome.

Keywords: Discal cyst, Lumbar spine, Intervertebral.

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INTRODUCTION

Discal cyst is a very rare benign spinal lesion. This occurs more commonly in the lumbar region. The cyst arises from the adjacent intervertebral disc and a distinct connection can be seen between them on imaging. Thus, this cyst is called a discal cyst.¹⁻³ Chiba et al defined discal cysts as a clinical entity.¹ MRI can make a diagnosis and the origin of discal cyst.⁴⁻⁶ MRI also helps in demonstrating another similar type of lesion at that spinal level.⁷⁻¹¹ However, the exact nature of the cyst and its pathogenesis is not yet known due to the fewer cases reported in the literature. Surgical excision of the cyst remains the mainstay of the treatment.

CASE REPORT

A 26-year-old male presented with progressive lower backache and sharp shooting radicular pain in the lateral aspect of left leg and dorsum of foot for 4 months which was not relieved despite medical treatment and physio-

therapy. He had no stiffness in the lower limbs. His bowel and bladder functions were normal. On examination, the tone was normal in both lower limbs and the power in left leg was 5/5 proximally and 4/5 distally. Power was normal on the right side. His knee, ankle and planter reflexes were normal on both sides. There was a decrease in all sensations over the left L5 dermatome. The straight leg raising test was positive at 30 degrees on the left side. Bulbocavernosus reflex, anal tone, and the perianal sensations were normal.

The MRI lumbar spine revealed L4-L5 disc showing dessicatory changes with diffuse bulge indenting thecal sac and left posterolateral oval shaped discal cystic extrusion of 12 x 8 x 5 mm, hypointense on T1W and hyperintense on T2W directed inferiorly in left lateral recess causing significant compression over traversing left L5 nerve root (Fig. 1).

The preoperative workup was done and the patient was taken up for surgery. L4 and L5 level were confirmed

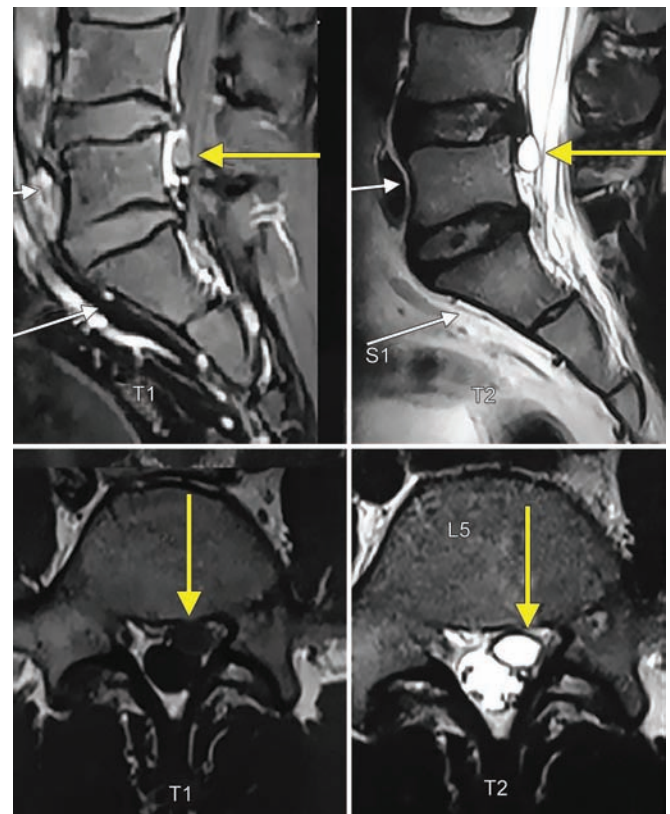


Fig. 1 : MRI showed L4-L5 disc dessicatory changes with diffuse bulge indenting thecal sac and left posterolateral oval shaped discal cystic extrusion hypointense on T1W and hyperintense on T2W compressing left L5 nerve root.

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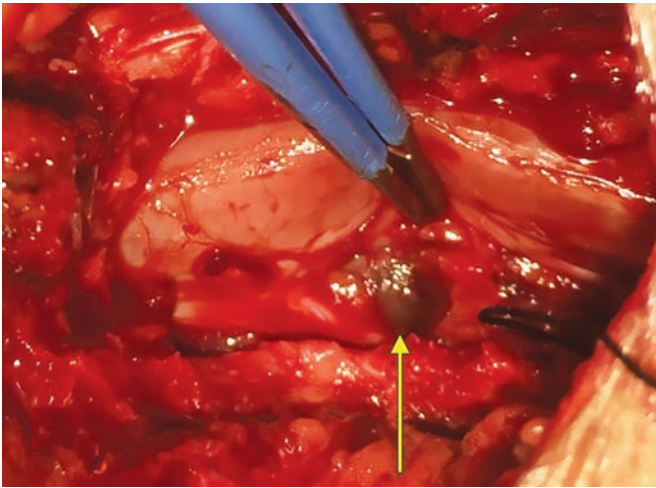


Fig. 2: A dark blue-colored cyst compressing the left L5 nerve root was visualized over the left ventrolateral side of the thecal sac.

on fluoroscopy. L4-L5 laminectomy was done. The thecal sac was safely retracted medially under the microscopic vision. Now, a blue colored cyst was seen anterolaterally at the axilla of fibro-collagenous the left L5 nerve root. (Fig. 2) The cyst was seen arising from the adjacent disc

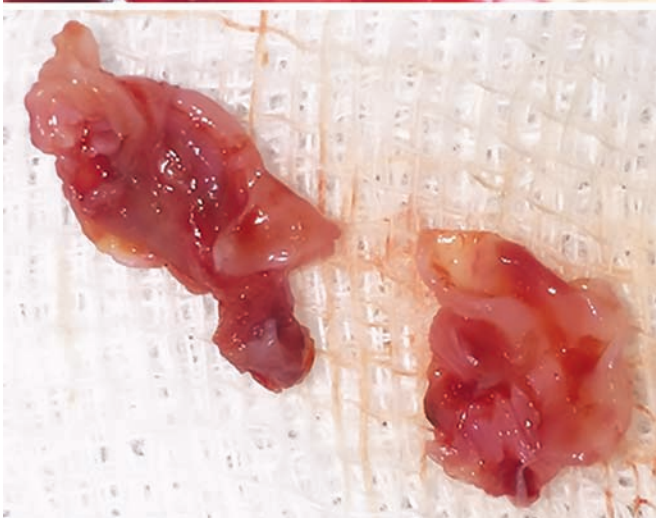
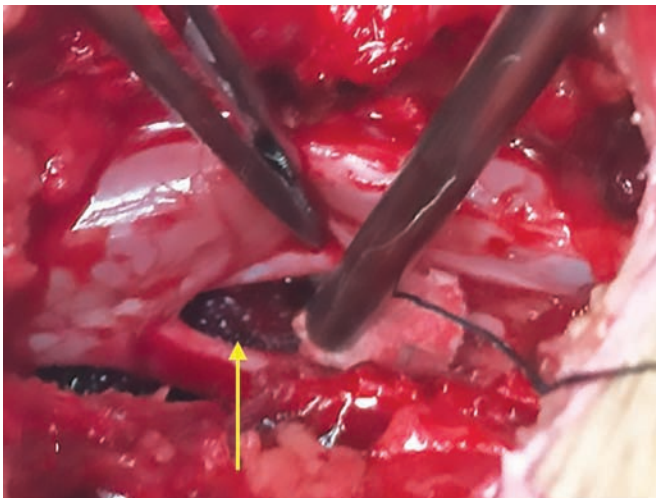


Fig. 3: L5 nerve root seen decompressed after excision of cyst and the excised discal cyst seen along with the wall.

through a focal defect in the annulus fibrosus and compressing the L5 nerve root. Now, the cyst was completely excised without damaging the adjacent nerve root, and the decompression was achieved. The adjacent disc did not show any herniation. The cyst was thin walled and contained serious type of fluid. (Fig. 3) Histopathological examination of the cyst wall showed a benign cystic lesion with strips of thick fibrocollagenous tissue lined by flattened epithelium. These findings confirmed a discal cyst. (Fig. 4)

During postoperative period, the patient showed marked improvement in his symptoms. The pain was completely resolved, and power in left lower limbs was normalized. Also, there was an improvement in all sensations over L5 dermatome. The postoperative MRI showed complete removal of the cyst without any recurrence. (Fig. 5)

DISCUSSION

The lumbar intervertebral discal cyst is a very rare benign spinal lesion seen more commonly in the lumbar region.

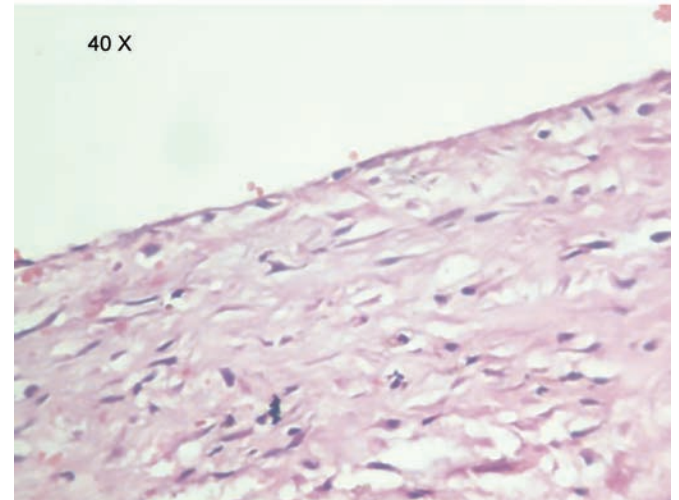
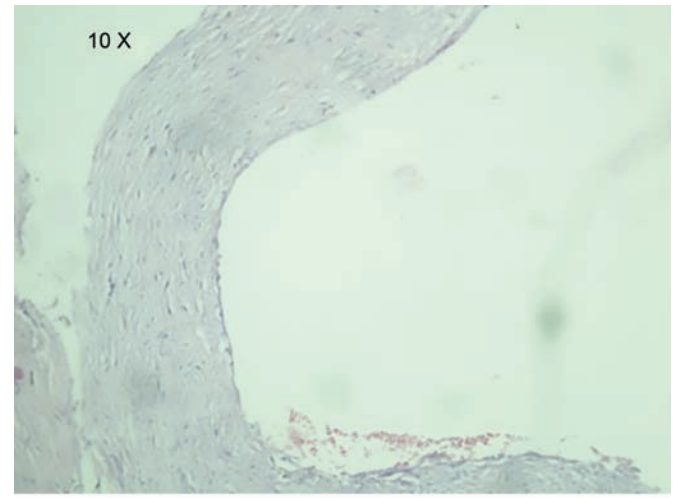


Fig. 4 : A microscopic appearance of the cyst wall lined by fibrocollagenous tissue and inflammatory cells seen. No lining epithelium present.

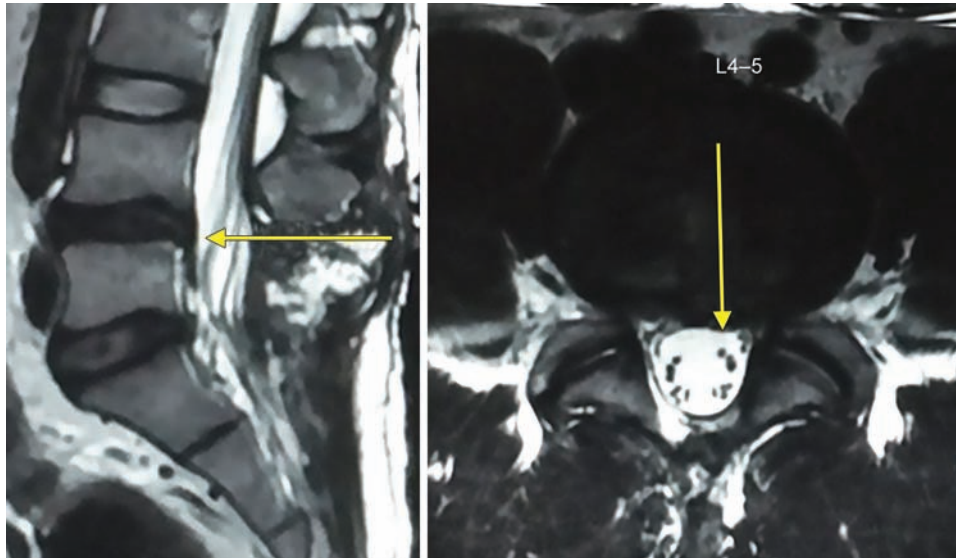


Fig. 5: Post-op MRI showed complete removal of the lesion.

The discal cyst is so called because it seems to be arising from the adjacent intervertebral disc on imaging.³ On reviewing the literature, only a few cases are reported. Chiba et al. have described the clinical, imaging and the pathological characteristics of the discal cyst.^{1,3} The discal cyst has to be differentiated from the synovial cyst of the facet joints due to their similar clinical presentation. This two can be distinguished based on the epithelial lining on histopathological examination. Discal cyst cause spinal nerve root compression and the neurological deficits like low backache and radiculopathy. Thus, the discal cyst has to be differentiated from the herniated intervertebral disc on imaging as both entities cause similar clinical features.^{1,12} MRI is the investigation of choice. MRI also helps in demonstrating another similar type of lesion at that spinal level like synovial cysts, ganglion cysts, perineural cysts and intraspinal gas.⁷⁻¹¹

Lee et al. gave the MRI features of discal cysts.⁴ According to them, the cyst is extradural and attached to the adjacent disc, occasionally extending to the lateral recess and rim enhancing on contrast imaging. This features on MRI differentiated a discal cyst from the herniated disc. This was observed in our patient. Discography is also helpful in differentiating discal cyst from other types of lesion.^{13,14}

The exact pathogenesis of discal cyst is still not known. The possible pathogenesis reported in the literature is the resorption of a pre-existing herniated disc and the hematoma associated with a prolapsed disc.⁸ The conservative management has been suggested in the form of spontaneous resolution of a discal cyst, selective epidural nerve root block; percutaneous CT guided aspiration and steroid injections.^{15,16} But, the management of the cyst is entirely surgical as the removal of the cyst provides complete symptomatic relief as reported in the literature. The

complete excision of the cyst without damaging the nerve root and the thecal sac along with decompression of the nerve root and thecal sac is the goal of the surgery. This will provide a good clinical outcome and a low recurrence rate following surgery. The analysis and careful follow-up of such cases are required to establish a future standard treatment protocol.

CONCLUSION

The lumbar intervertebral discal cyst is an extremely rare entity. Its clinical features are similar to that of the prolapsed lumbar intervertebral disc. MRI scan plays a vital role in its diagnosis and planning of surgical management. The discal cyst should be included in the differential diagnosis of causes of low back pain and radiculopathy. The outcome of the patient is excellent if accurate diagnosis and complete safe excision of the cyst is done.

REFERENCES

1. Chiba K, Toyama Y, Matsumoto M, Maruiwa H, Watanabe M, Nishizawa T, et al : Intraspinal cyst communicating with the intervertebral disc in the lumbar spine : discal cyst. *Spine*.2001 Oct 1; 26(19): 2112-2118.
2. Kono K, Nakamura H, Inoue Y, Okamura T, Shakudo M, Yamada R, et al : Intraspinal extradural cysts communicating with adjacent herniated disks : imaging characteristics and possible pathogenesis. *AJNR Am J Neuroradiol*. 1999 Aug; 20(7): 1373-1377.
3. Toyama Y, Kamata N, Matsumoto M : Pathogenesis and diagnostic title of intraspinal cyst communicating with intervertebral disk in the lumbar spine. *Rinsho Seikei Geka*. 1997; 32: 393-400.
4. Lee HK, Lee DH, Choi CG, Kim SJ, Suh DC, Kahng SK, et al : Discal cyst of the lumbar spine : MR imaging features. *Clinical Imaging*. 2006 Sep-Oct; 30(5) : 326-330.

5. Shah RV, Lutz GE : Lumbar intraspinal synovial cysts : conservative management and review of the world's literature. *Spine J.* 2003 Nov-Dec; 3(6): 479-488.
6. Watanabe N, Ogura T, Kimori K, Hase H, Hirasawa Y : Epidural hematoma of the lumbar spine, simulating extruded lumbar disk herniation : clinical, discographic, and enhanced magnetic resonance imaging features : A case report. *Spine.* 1997 Jan 1; 22(1) : 105-109.
7. Yuh WT, Drew JM, Weinstein JN, McGuire CW, Moore TE, Kathol MH, et al. Intraspinal synovial cysts. Magnetic resonance evaluation. *Spine.* 1991 Jul;16(7) :740-745.
8. Brish A, Payan HM. Lumbar intraspinal extradural ganglion cyst. *J Neurol Neurosurg Psychiatry.* 1972 Dec; 35(6):771-775.
9. Kao CC, Uihlein A, Bickel WH, Soule EH. Lumbar intraspinal extradural ganglion cyst. *J Neurosurg.* 1968 Aug; 29(2):168-172.
10. Tarlov IM. Perineural cysts of the nerve roots. *Arch Neurol Psychiatry.* 1938 Dec; 40(6):1067-1074.
11. Mortensen WW, Thorne RP, Donaldson WF. Symptomatic gas-containing disc herniation. Report of four cases. *Spine.* 1991 Feb;16(2):190-192.
12. Koga H, Yone K, Yamamoto T, Komiya S : Percutaneous CTguided puncture and steroid injection for the treatment of lumbar discal cyst : a case report. *Spine.* 2003 Jun 1; 28(11): E212-216.
13. Marshman LAG, Benjamin JC, David KM, King AJ, Chawda SJ : "Disc cysts"and "Posterior ligament ganglion cysts": synonymous entities? : Report of three cases and literature review. *Neurosurgery.* 2005 Oct; 57(4): E818.
14. Nabeta M, Yoshimoto H, Sato S, Hyakumachi T, Yanagibashi Y, Masuda T, et al : Discal cysts of the lumbar spine : Report of five cases. *J Neurosurg Spine.* 2007 Jan; 6(1):85-89.
15. Aydin S, Abuzayed B, Yildirim H, Bozkus H, Vural M. Discal cysts of the lumbar spine: Report of five cases and review of the literature. *Eur Spine J.* 2010 Oct; 19(10):1621-1626.
16. Chou D, Smith JS, Chin CT : Spontaneous regression of a discal cyst. Case report. *J Neurosurg Spine.* 2007 Jan; 6(1): 81-84.