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## Case Report

# Posterior migration of lumbar disc herniation: A case report<sup>☆</sup>

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## ARTICLE INFO

## Article history:

Received 18 June 2023

Revised 5 December 2023

Accepted 10 December 2023

## Keywords:

Posterior epidural

Herniated disc

Lumbar spine

## ABSTRACT

Posterior epidural migration of herniated lumbar disc fragments is a rare pathological entity. This can lead to major neurological deficits. Here, we present a rare case of sequestered lumbar disc fragment migration into the epidural space. A 49-year-old-man presented with severe low back pain and weakness of the long extensor muscle of the hallux. MRI of the lumbar spine revealed posterior epidural lesion at the L4-L5 level. The disc fragment was isointense on T1 and T2-weighted Images (WI). The mass lesion was removed after decompressive laminectomy. Pathological investigation revealed an intervertebral disc fragment. The patient's condition improved postoperatively.

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## Introduction

Lumbar disc extrusion is frequently encountered in neurosurgical practice. Most commonly, herniated disc fragments migrate upward, downward, and sideward. The migration of this disc fragments to the anterior, posterior epidural, or intradural space can occur but is rare [1,2]. Magnetic resonance imaging (MRI) is an essential tool for diagnosing and managing herniated discs.

In this report, we present a rare case of posterior epidural migration of a disc fragment successfully treated surgically.

## Case Report

A 49-year-old man presented with severe low back pain for a week. On physical examination, the weakness of the extensor hallucis longus muscle was grade 2/5 in the right lower limb. The straight leg raising test was positive at 40° on the right side. There are no urinary and bowel dysfunction. Magnetic Resonance Imaging (MRI) of the lumbar spine showed a posterior epidural lesion at the L4-L5 level on the right side. The lesion mass was isointense on T1- and T2-weighted images (WI). The lesion mass was iso intense on T1 and T2

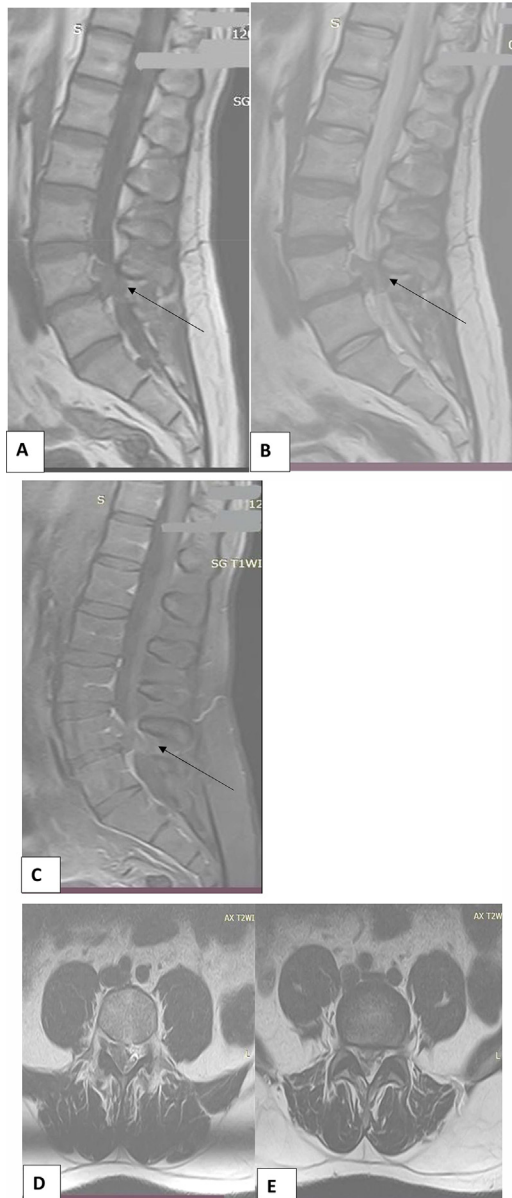
<sup>☆</sup> Competing Interests: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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<https://doi.org/10.1016/j.radcr.2023.12.019>

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**Fig. 1 – Sagittal T1(A),T2WI (B) and T1-weighted fast spin-echo (C), Axial T2 (D,E) MR image demonstrates a posteriorly migrated herniated disc fragment compressing the nerve roots at L4-L5 level.**

Weighted Images (WI). The thecal sac was compressed and deviated to the left (Fig. 1). The patient underwent a laminectomy at L4. At surgery, a ruptured fragment disc splinter compressing the swollen L5 nerve root was identified and removed (Fig. 2). Pathological examination confirmed that it was disc material. The postoperative course was straightforward. The patient recovered neurological function.

## Discussion

Disc sequestration accounts for approximately 28.6% of all herniated discs. Fragments of a herniated disc travel in all di-



**Fig. 2 – Postoperative picture showing a disc material after removal.**

rections in the spinal canal; caudal and paracentral shifts are the most common patterns [1,3]. Posterior epidural migration of a sequestered disc fragment is rare. The first case was reported by Lombardi in 1973 [4]. In our study, the patient suffered from back pain and radiculopathy with objective neurological deficit.

Clinical signs vary from low back pain to severe neurological signs such as cauda equina syndrome; and due to the migration of disc fragments into the dorsal epidural space, affecting neuronal structure [5,6].

These posterior epidural masses may be diagnosed as epidural hematoma, abscess or synovial cyst [6,7]. Magnetic resonance imaging (MRI) of the spine is the gold standard for diagnosis. In most cases, a herniated disc is hypointense on T1-weighted images and hyperintense (WI) on T2-weighted images. On MRI, tumors were enhanced uniformly after gadolinium injection. Synovial cysts appear as well-circumscribed cystic lesions that are hypointense on T1- and hyperintense on T2 WI. Epidural abscesses usually appear as hypo T1 WI and hyperintense WI with peripheral rim enhancement. A hematoma appears iso- or hyperintense on T1 WI and heterogeneous hyperintense on T2 WI and is associated with risk factors for epidural anesthesia, trauma, and pregnancy [1,6,8].

For patients with posterior epidural migration of lumbar disc fragments, surgery is the treatment of choice to prevent severe neurological deficits such as cauda equina syndrome or conus medullaris syndrome. The optimal surgical management is removal of the extruded fragment by hemilaminectomy or laminectomy [1,8–10]. In this case, the presence of neurological deficit was an indication for surgical intervention.

## Conclusion

A 49-year-old man presented with an L5 neurological motor deficit resulting from posterior epidural migration of a sequestered disc fragment at L4-L5 level. After surgical removal of the extruded fragment, the patient regained normal neurological function.

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## Patient consent

A written consent was obtained from the patient for publication of this case and any accompanying images.

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