

Case Report

Posterior epidural migration of lumbar disc: Will the real “disc” please stand up?

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Received: 25 October 17 Accepted: 09 November 17 Published: 18 December 17

Abstract

Background: Posterior epidural lumbar disc fragment migration is rare and most commonly occurs at the L3-L4 level where it may contribute to cauda equina compression.

Case Description: Here, we report three cases of epidural migration of a lumbar disc, two of which led to bladder dysfunction/cauda equina compression. Early decompression (e.g., laminectomy) and aggressive postoperative physiotherapy led to significant postoperative improvement in all three patients.

Conclusion: Migration of large sequestered lumbar disc herniations leading to cauda equina compression should be recognized early and promptly treated with decompressive laminectomies to achieve the best postoperative outcomes.

Key Words: Cauda equina, low back pain, lumbar disc, posterior epidural migration

Access this article online

Website:

www.surgicalneurologyint.com

DOI:

10.4103/sni.sni_395_17

Quick Response Code:



INTRODUCTION

Posterior epidural migration of lumbar disc fragments (PEMLDF) is rare and typically occurs in middle-aged men at the L3-L4 level. There are only 78 cases reported in the literature, including the three from this study. Notably, 41 patients presented with an acute cauda-equina syndrome (CES) resulting in bladder dysfunction.

CASE REPORTS

Case 1

A 52-year-old male presented with a traumatic onset of right greater than left-side low back and leg pain of 3-years duration. However, he experienced increased onset of numbness, tingling, weakness, and urinary hesitancy over the last 3 weeks [Table 1]. Neurological findings revealed that he was paraplegic bilaterally below the L4/L5 level (complete motor, reflex, and sensory loss). Lumbar magnetic resonance (MR) showed a compressive ventral extradural lesion at the L3-L4 level that was iso/hypo intense on T1 and

hyperintense on the T2 studies, consistent with an acute disc herniation [Figure 1].

Case 2

A 60-year-old male presented with 2-year history of back/bilateral leg pain accompanied by 7-day onset of urinary incontinence and 4 days of paraplegia [Table 1]. The MR imaging scan showed a large ventral disc herniation at the L3-4 level resulting in marked thecal sac compression [Figure 2].

Case 3

A 57-year-old male with a history of low back pain was unable to walk for the last 2 weeks [Table 1]. He

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How to cite this article: Deora H, Prabhuraj AR, Pruthi N. Posterior epidural migration of lumbar disc: Will the real “disc” please stand up?. *Surg Neurol Int* 2017;8:302.
<http://surgicalneurologyint.com/Posterior-epidural-migration-of-lumbar-disc-Will-the-real-“disc”-please-stand-up/>

presented with a bilateral foot drop and absent reflexes, with complete sensory and sphincter loss. MR imaging showed a well-defined posterior extradural L3-L4 lesion that was hypointense on T1 and hyperintense on T2-weighted studies with accompanying central hypointensity; all findings were consistent with a disc herniation [Figure 3].

Summary of surgery

All three patients underwent L3 laminectomy and L3-4 discectomy without fusion [Figure 4]. The patient with urinary incontinence for 7 days regained function, but the patient with a 20-day loss of sphincter function never

regained sphincter control. Notably, motor deficits fully resolved in all three patients 6 months postoperatively.

DISCUSSION

PEMLDF is rare and typically appears in middle-aged males who perform heavy labor. They typically present with MR-documented L3-4 (39.2%) ventral sequestered disc herniations (e.g., T1 iso/hypointense and T2 hyperintense with rim enhancement) resulting in cauda equina syndromes. Seventy-five cases have been reported in the literature; our cases brings this figure

Table 1: Salient characteristics of our cases with clinicoradiological findings

Age/sex	Level	Symptoms	Signs	Surgery	Contrast enhancement	Follow-up status
52/Male	L3-L4	CES (20 days)	Distal power 0/5 below knee	L3 laminectomy and discectomy	Rim enhancement present	Improved power, Bladder incontinence
60/Male	L3-L4	CES (7 days)	Right side power 3/5, left 2/5	L3 laminectomy and discectomy	No enhancement	Improved power. Bladder continent.
57/Male	L3-L4	Radiculopathy (14 days)	Bilateral foot drop	L3 laminectomy and discectomy	Thick peripheral enhancement	Improved power, no pain.

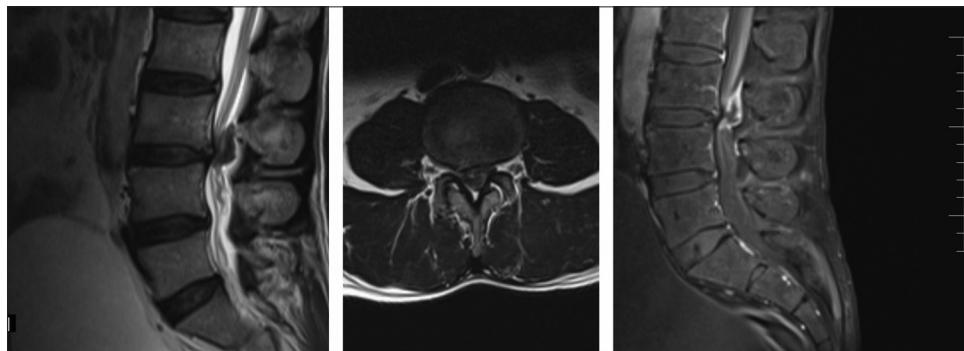


Figure 1: The axial T2-weighted MRI showed an extradural posteriorly migrated disc fragment at the L3-L4 level. Note the separation between the disc and the overlying dural sac

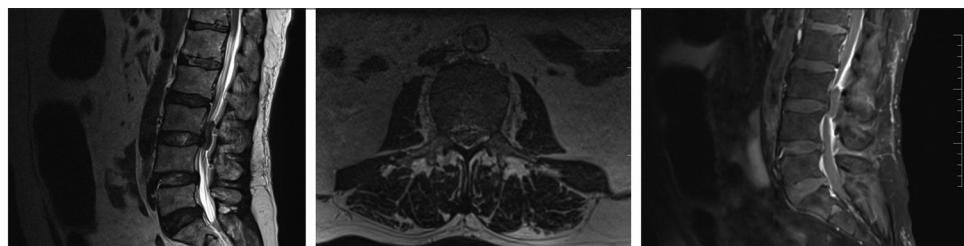


Figure 2: Saggital T2 MRI image showing the extradura, posteriorly migrated disc fragment at the L3-L4 level

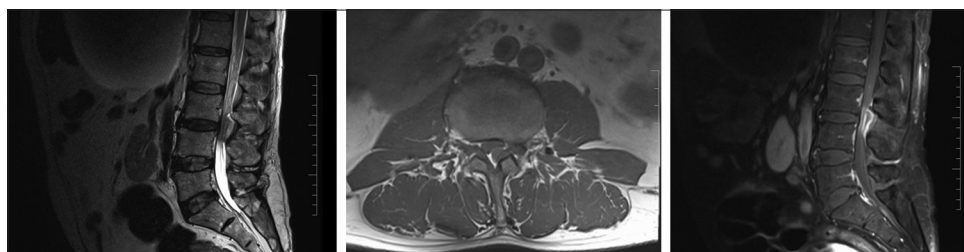


Figure 3: Saggital T2 contrast MRI image showing the extradural L3-L4 posteriorly migrated disc fragment. Note the lesion/disc herniation enhanced with contrast

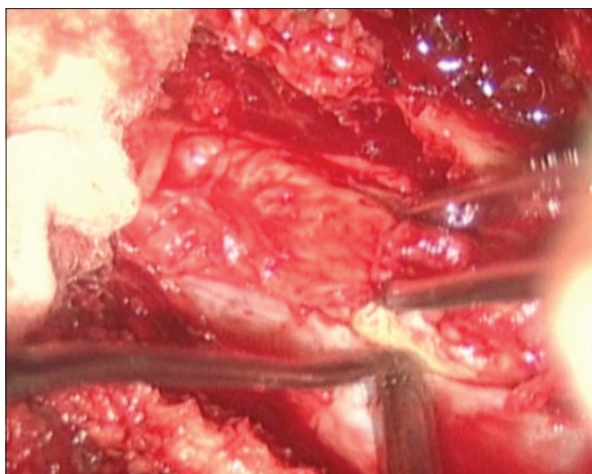


Figure 4: Intraoperative photograph at the L3-L4 level following a laminectomy showing a large ventral disc fragment

to 78.^[1] The differential diagnoses include metastasis, chondrosarcoma, cystic schwannomas, abscess, or even epidural hematomas.^[2,3]

Treatment options

Urgent decompressive laminectomy and discectomy at the L3-L4 level without fusion addressed the cauda equina syndrome attributed to massive thecal sac and bilateral L4 root compression.^[4,5] In general, early surgery is optimal to avoid permanent urinary dysfunction (e.g., note that the patients with 7-day history of incontinence recovered but not the one with a 20-day history).^[6]

CONCLUSION

Three patients with PEMLDF and large ventral sequestered disc herniations that had migrated

to the L3-4 level were treated with L3-L4 laminectomies/discectomies without fusions. Early diagnosis and decompression correlated with better postoperative results and a greater chance of recovery of sphincter function.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initial will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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