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Lumbar disc herniation presenting with contralateral neuropathy. Case report

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Abstract

We admitted a unique case of right lumbar disc herniation at L4L5 who presented with contralateral symptoms and was successfully treated with a right large L4/L5 fenestration and microdiscectomy.

When the operation is considered, intervention only from the herniation side is sufficient.

In the case presented, it is probable that Kernohan notch-like phenomenon, venous engorgement and congestion at the contralateral side of the herniated lumbar disc and the contralateral migrated epidural fat are responsible for the emergence of contralateral symptoms.

Keywords
herniated disc, intervertebral disc displacement, contralateral symptoms

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Introduction

Lumbar disc herniation usually presents with varying degrees of pain, numbness and weakness in the distribution of the affected nerve root.

Case presentation

A 46 year-old gentleman who performed intense physical work presented a 6 months old history of low back pain radiating down to his left buttock , posterior thigh, lateral and posterior leg (L5 and S1 dermatomas). Examination revealed intense algoparesthesias on the left L5 and S1 dermatomas (VAS 8/10), are refractory to conservative management and acupuncture, rotulian and achilian reflexes were absent bilaterally. Straight leg raise was positive at 30 degrees on the left side and 40 degrees on the right side.

Anamnesis revealed L4-L5 disc hernia operated on the right side in 2020 with very good postoperative evolution.

MRI of his lumbar spine showed a central and right-sided paracentral disc herniation at L4/L5 causing cauda equina compression (blue arrow) rupture of fibrous ring and posterior longitudinal ligament in the midline (red arrow) - Figures 1,2) .

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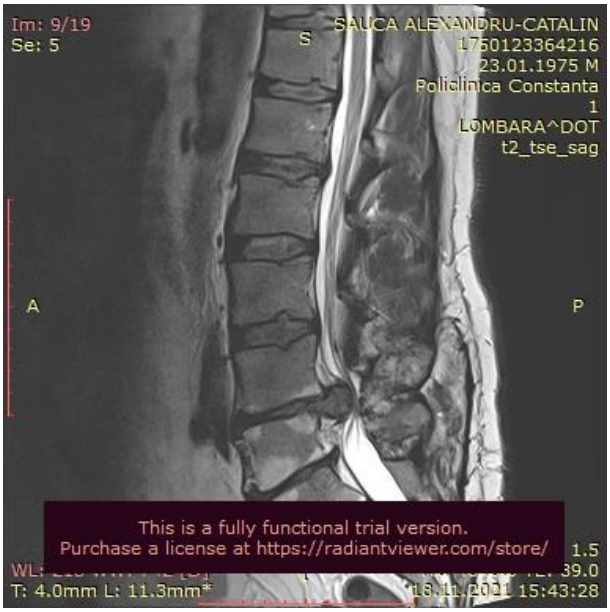

Figure 1. Sagittal cut of lumbar spine (T2) L4-L5 disc hernia, ruptured, huge, compressive on the cauda equina

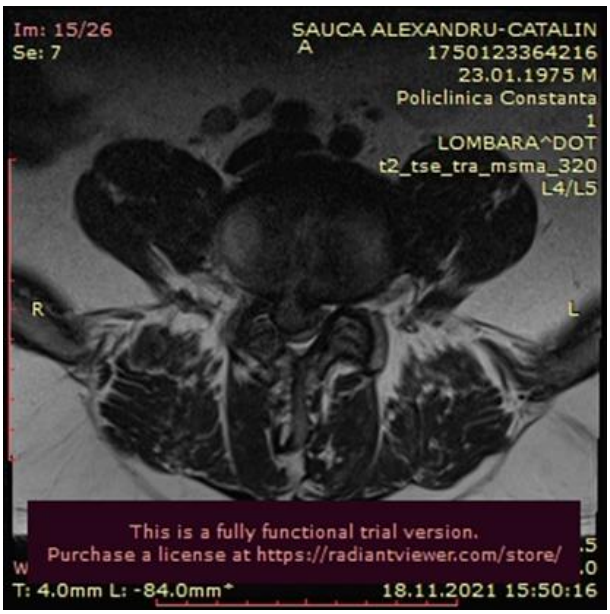

Figure 1. Axial cut at L4/L5 disc level, the right side (T2). central and right-sided paracentral disc herniation at L4/L5 causing cauda equina compression (blue arrow), rupture of fibrous ring and posterior longitudinal ligament in the midline (red arrow), operated (2020) L4-L5 fenestration (yellow arrow).

The patient was emergently operated on (enlargment of fenestation L4-L5 on the right side, microsurgical discectomy). Postoperative results were very good with dissapearance of the pain and paresthesis.

Postoperative follow-up period: 6 months.

Discussion

There is no consensus about surgical approac; side or sides and the pathophysiology. Some authors like Choudhury et al[1], Kornberg[2] , Mirovsky and Halperin[3] performed bilateral explorations not to miss a lesion.

However, Sucu and Gelal[4], Akdeniz et al[5], and Karabekir et al[6] performed the operative approach only on the lumbar disc herniated side and reported that exploration of the LDH side was enough for the recovery of the contralateral symptoms.

Radiculopathy from lumbar disc herniation can be a result of mechanical compression[7] , ischaemia[7] or inflammatory irritation[8] of the nerve root.

The mechanism for lumbar disc herniation presenting with contralateral leg symptoms is poorly understood. Kornberg *et al*[2] proposed that inconsistent dural attachments to the posterior longitudinal ligaments holds the lumbar nerve roots at certain levels resulting in a more symptomatic traction of the contralateral nerve root

A radicular pain contralateral to the herniated side is an unusual finding rarely reported in the literature(Safdarian[9]). Safdarian hypothesized that the reason for patients' symptoms contralateral to the apparent compression on imaging studies involves a Kernohan notch-like phenomenon.

Sucu and Gelal[4] presented five patients with lumbar disk herniations and contralateral. The authors observed that the shape of disk herniations in imaging studies was quite similar in these patients. Almost all of them had a broad posterior central-paracentral herniated disk with the apex deviated away from the side of the symptoms.

Kalemci et al[10] reported a case of painless contralateral neurological deficit due to venous engorgement and congestion at the contralateral side of the herniated lumbar disc .

Karabekir et al[6]. concluded that a hypertrophied ligamentum flavum was the likely etiology of contralateral sciatica comparing five patients with only contralateral symptoms, with 200 disc herniated patients with ipsilateral symptoms

According to Jun-Song Yang[11] the migrated epidural fat plays a significant role in the pain mechanism of LDH with contralateral radiculopathy. Only via a surgical approach ipsilateral to the herniated side, could clinical improvement be obtained postoperatively**.**

Conclusions

Patients with lumbar disc herniation may present with radicular symptoms involving the contralateral leg.

In the case presented, the mechanism of contralateral symptoms was Kernohan notch-like phenomenon, venous engorgement and congestion at the contralateral side of the herniated lumbar disc and the contralateral migrated epidural fat.

The operative approach (enlarged fenestration, operative approach of the contralateral disc hernia) was mandatory for a very good postoperative evolution.

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