

Spontaneous regression of lumbosacral disc- A case report



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ABSTRACT

Spontaneous regression of lumbar disc is a rare phenomenon. There is no exact described mechanism behind such event. Follow up of such cases in adequate numbers are also lacking. Here we present a case of spontaneous regression of lumbosacral disc prolapse along with resolution of symptoms. A 36 year old lady came to the Out Patient Department (OPD) with sudden onset severe low back pain along with radiation to left lower limb. Magnetic Resonance Imaging (MRI) scan of lumbosacral spine showed a left posterolaterally extruded and inferiorly migrated L5-S1 disc with compression over respective nerve root. She was counseled and possible treatment options were explained. She refused surgery and continued conservative management even knowing all the merits and demerits. Her symptoms improved over time and she had a pain free life for almost two and a half years. Then she experienced mild low back pain again and reviewed at the OPD. Further MRI scan showed significant regression of previously prolapsed L5-S1 disc. Hence, spontaneous regression of prolapsed discs may occur and should be included during counseling of patients with prolapsed disc. But the serious complications of prolapsed discs like muscle weakness and cauda equina syndrome should also be explained along with.

Key words: Lumbosacral disc prolapse; Spontaneous regression; MRI

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INTRODUCTION

Lumbar Prolapsed Intervertebral Disc (LPIVD) is a major contributor to low back pain and affects around 9% of all people worldwide, with a high associated economic burden and a tendency to increase as the population ages.¹ LPIVD has been associated with disruption of the annulus fibrosus (AF), extrusion of the nucleus pulposus (NP), and stimulation of nerve fibers, leading to pain. While LPIVD-induced pain accounts for 5% of all low-back pain cases, only 15% all LPIVD cases are managed with surgical intervention.²

Therapeutic options for LPIVD include conservative and surgical treatment. Many patients benefit from conservative treatment, yet surgical treatment may also be advised if cauda equine syndrome or symptoms such as progressive motor weakness or pain refractory to conservative

treatment exist. Spontaneous regression of LPIVD is thought to occur via an inflammatory reaction with macrophages and molecular mechanisms of phagocytic processes.^{3,4} The reaction generated by meninges may also lead to regression even in the intradural LPIVD case.⁵ Spontaneous regression of LPIVD was 1st reported by Guinto in 1984.⁶

This paper presents another case where spontaneous regression has occurred in a case of large sequestered and migrated lumbosacral PIVD.

CASE HISTORY

Approximately 3 years back, a 36 year old lady presented at the OPD with a history of sudden onset severe low back pain with radiation along posterolateral aspect of left thigh and leg of 2 weeks duration. There was no

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history of bowel or bladder involvement or limb weakness. Examination revealed positive straight leg raising test at 45 degrees on the left side. Significant sensory deficit was present over left S1 dermatome. Tenderness was present over L5, S1 Spinous processes. MRI scan of lumbosacral spine showed a large, left posterolaterally extruded and inferiorly migrated L5-S1 disc with compression over left S1 nerve root (Figure 1). She was counseled regarding the course of the disease, further complications, and available treatment options along with the need for surgery (L5-S1 Microdiscectomy). But, she refused surgery and wanted conservative management even knowing all the merits and demerits. She was treated conservatively with bed rest, nonsteroidal anti-inflammatory drugs, and analgesics for few days at that time. She did not turn up for follow up then. Her symptoms improved over time and she had a pain free interval of almost two and a half years until she experienced a recurrent sudden onset mild low back pain 1 month prior to presenting at the OPD for the second time. A Repeat MRI scan was advised and that showed significant regression of previously prolapsed

and extruded L5-S1 disc (Figure 2). Hence, conservative therapy including bed rest, physical therapy, nonsteroidal anti-inflammatory drugs, and analgesics was advised as per her symptomatology and MRI report.

DISCUSSION

PIVD is one of the most common diseases that induce back pain along with radicular pain. Spontaneous regression of PIVD correlates with clinical improvement and is confirmed by serial MR images. Though several mechanisms were described for spontaneous regression, the exact mechanism has not been elucidated. Three hypotheses have been described in the literature. The 1st hypothesis is the retraction of the protruded disc. The 2nd hypothesis states that disc regression is due to gradual dehydration and contraction. Bozzao et al proposed the hypothesis that dehydration within the nucleus pulposus caused extruded material to retract back into the annulus fibrosus.⁷ Third hypothesis states enzymatic degradation

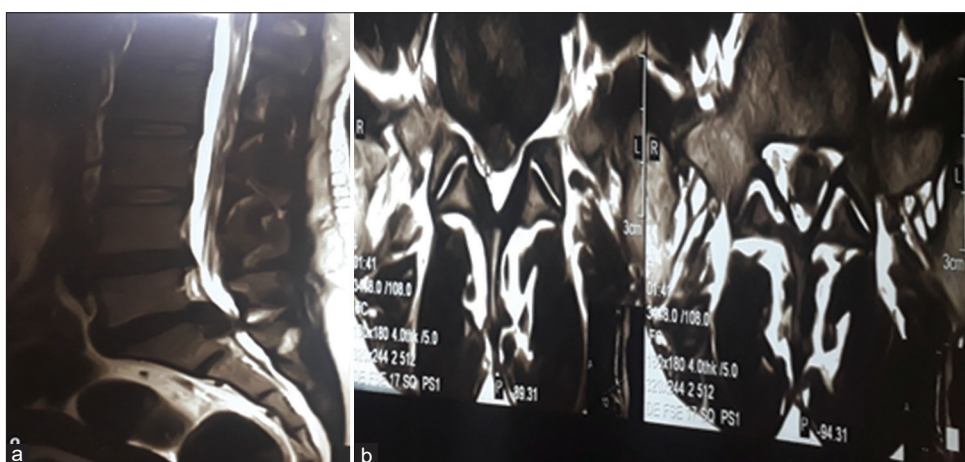


Figure 1: (a) Sagittal T2 weighted image showing large sequestered and inferiorly migrated L5-S1 disc, (b) Axial T2 weighted image showing left posterolateral L 5-S1 disc sequestration with compression of corresponding nerve root



Figure 2: (a) Follow up sagittal T2 weighted image showing regression of sequestered and inferiorly migrated L5-S1 disc, (b) Follow up axial T2 weighted image showing regression of left posterolateral sequestered and inferiorly migrated L5-S1 disc with decreased compression over nerve root

and phagocytosis of disc tissue due to inflammatory reaction and neovascularization.^{8,9} This is the most noticeable mechanism. It describes an inflammatory reaction where the autoimmune system recognizes extruded disc material as a “foreign body” in the epidural vascular space of the vertebra. This causes neovascularization of the disc tissue and infiltration by inflammatory cells such as macrophages, granulocytes, and lymphocytes.

The type of disc herniation is more contributable to spontaneous disc regression than the size of disc herniation. Transligamentous extension type of herniated disc material is more favorable than subligamentous and sequestered type herniation.¹⁰ In another study, disappearance of HNP was seen frequently in the cases of migrating disc herniation, and it was presumed that the disc is more exposed to the epidural vascular supply.² In case of extrusion or sequestration, an autoimmune response is promptly activated.¹¹

CONCLUSION

Spontaneous regression of LPIVD is a rare phenomenon. Even if the prolapsed disc size is large, conservative treatment can be an option if the patient does not have limb weakness, bladder symptoms or the patient refuses surgery.

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Author's Contribution:


SD—Concept and design of the study, prepared first draft of manuscript; **SM**—Reviewed the literature, manuscript preparation, editing and revision.

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