

Spinal Epidural Varices, a great Mimic of Intervertebral Disc Prolapse - A Case Series

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What to Learn from this Article?

Clinical presentation of spinal epidural varices and their intraoperative management

Abstract

Introduction: Epidural venous plexus enlargement, presenting with low back pain and radiculopathy, is an uncommon cause of nerve roots impingement. This condition commonly mimics a herniated nucleus pulposus radiologically. The radiological diagnosis is often missed and the diagnosis is made during the surgery. We are hereby presenting 2 such cases of epidural varices mimicking intervertebral disc prolapse with lumbar radiculopathy.

Case Report: Case 1: 43 yr old female presented with acute exacerbation of low back ache and significant right L5-S1 radiculopathy without neurological deficit. MRI reported as L5-S1 disc prolapse. Intra-operatively engorged dilated epidural vein seen compressing S1 nerve root. Associated Disc bulge removed and Coagulative ablation of the dilated epidural vein was performed Case 2: 45 year old male manual labourer presented with backache with left sided sciatica since 8 months, increased in severity since past 1month associated with sensory blunting in L5 and S1 dermatomes. Neurologic examination revealed normal muscle power in his lower extremities. Sensations was blunted in L5 and S1 dermatomes. MRI was reported as L5-S1 disc prolapsed compressing left S1 nerve root. Decompression of the L5-S1 intervertebral space was performed through a left -sidelaminotomy. Large, engorged serpentine epidural veins was found in the axilla of S1 nerve root, compressing it. Coagulative ablation of the dilated epidural vein was performed. Retrospectively, features of epidural varices were noted in the preoperative magnetic resonance imaging scans. Both patients had significant improvement in radiculopathy immediate postoperatively, and sensory symptoms resolved over the next 6 weeks in second case. At recent follow up, both patients had significant relief of symptoms and no recurrent radicular symptoms.

Conclusion: An abnormal dilated epidural venous plexus that mimics a herniated lumbar disc is a rare entity. This pathology should be always kept in mind during lumbar disc surgery. Preoperative misdiagnosis is common. When faced with this Situation, microsurgical coagulation and decompression of the nerve root are adequate.

Keywords: Epidural varices, Disc prolapse, Radiculopathy, Decompression.

Author's Photo Gallery



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Introduction

Epidural venous plexus enlargement, presenting with low back pain and radiculopathy, is an uncommon cause of nerve roots impingement. This condition commonly mimics a herniated nucleus pulposus radiologically. The radiological diagnosis is often missed and the diagnosis is made during the surgery [1,2,3,4]. It is estimated at 4.5% of operations for lumbar disc herniation [5]. We are hereby presenting 2 such cases of epidural varices mimicking intervertebral disc prolapse with lumbar radiculopathy.

Case Report

Case history- 1

A 43 yr old female presented with back ache since 6 months and significant radiating pain down the posterior aspect of his leg and into the top of her right foot in the L5 – S1 distribution and increased with bending, sitting, and straightleg raising. She denied associated neurologic signs or symptoms, including weakness, sensory loss, and bowel or bladder difficulties. Neurologic examination revealed normal strength and sensation in his lower extremities. Deep tendon reflexes were normal and plantar responses were flexor bilaterally. Patient was treated conservatively without significant improvement. X-ray appeared normal. MRI was reported as L5-S1 disc prolapse compressing Right S1 nerve root [fig 1-2]. patient was posted was discectomy and decompression.

Materials and method

Decompression of the L5–S1 intervertebral space was performed through a right -side laminotomy and micro discectomy. It was found that the traversing nerve root S1 was inflamed and oedematous. A relatively large, circumscribed plexus of small intertwining epidural veins like a round button was found in the axilla of S1 nerve root, compressing it. Although the intervertebral disc was bulging, there was no prolapse as such, and when incised, only a small quantity of degenerative material was found. Coagulative ablation of the dilated epidural vein was performed.

Histology of segment of vein demonstrated fibrosis and phlebothrombosis of the epidural vein. The patient reported improvement of his right lower limb radiculopathy the next day, and his symptoms resolved over the next 4 weeks. At 1year follow-up, he had mild backache but no recurrent radicular symptoms and was able to return to active employment.

Case history 2

45 year old male manual labourer presented with backache with left sided sciatica since 8 months, on and off with increase in severity since past 1month associated with sensory blunting

in L5 and S1 dermatomes, without weakness and bowel or bladder disturbance. Neurologic examination revealed normal muscle power in his lower extremities. Sensations was blunted in L5 and S1 dermatomes. Deep tendon reflexes were normal and plantar responses were flexor bilaterally. Radiographs appeared normal. MRI was reported as L5-S1 disc prolapse compressing left S1 nerve root [fig 3-4] .so discectomy and decompression was planned.

Materials and method

Using dorsal midline approach, Decompression of the L5–S1 intervertebral space was performed through a left -side laminectomy. The traversing nerve root S1 was inflamed and edematous . A relatively large, engorged serpentine epidural veins was found in the axilla of S1 nerve root, compressing it. There was mild intervertebral disc bulge, without any prolapse as such, and small quantity of disc material came out after incising it. Coagulative ablation of the dilated epidural vein was performed. Patient had significant improvement in left lower limb radiculopathy immediate postoperatively, and his sensory blunting symptoms resolved over the next 6 weeks. At 9 months follow-up, he had occasional backache but no recurrent radicular symptoms.

Discussion

Symptomatic epidural varices presenting with radiculopathy is extremely rare and was first reported by Cohen and Epstein [6,7] in the 1940s. Gumbel et al reported an incidence of 0.5% of isolated nerve root compression caused by varices among 1091 cases of sciatica [8]. The pathogenesis of epidural varices has not been fully established, possible underlying aetiologies that may result in symptomatic epidural varices include vascular anomalies [9], iliac, superior or inferior vena cava thrombosis, Budd-Chiari syndrome [10], intracranial hypotension, pregnancy and portal hypertension. Nevertheless, some cases are idiopathic and have no underlying aetiology. Zimmerman and colleagues [4] have described epidural varix formation with partial thrombosis of the epidural veins. They proposed that an acute disc herniation results in trauma to the epidural vein's endothelium and later in the vein's partial thrombosis. The thrombosed veins may cause compression of the thecal sac and the nerve roots. The dilated veins in the epidural spaces or in the intervertebral foramen cause irritation or compression of the thecal sac and nerve roots, and this in turn causes lumbar radiculopathy. Epidural varices have been reported to cause radiculopathy, urinary retention, myelopathy [11] and back pain involving cervical and dorsal region. In the majority of cases reported by Zarski S, Styczynski T, however, the disc herniations are not combined With the epidural varices[12] . Even in our cases there was no disc extrusion rather only disc bulge was



Figure 1: SAGGITAL T2 MRI.

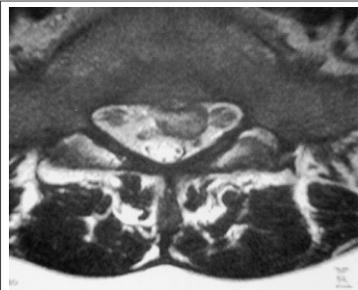


Figure 2: AXIAL T2 L5-S1 MRI



Figure 3: SAGGITAL T2 MRI

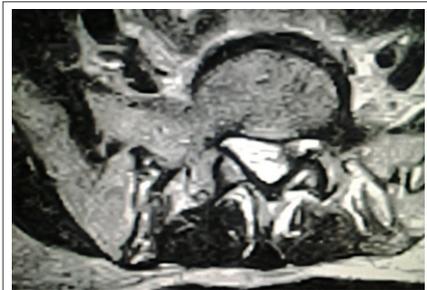


Figure 4: AXIAL T2 L5-S1 MRI

observed. The varix-induced intervertebral vein dilations were located near the axillary area of the nerve root [3,12]. Even in our cases varices were observed near axilla of the nerve. Hanley et al [2] reported the identification of three distinct types of lumbar epidural varices, based on operative findings and imaging characteristics: Type I, thrombosed dilated epidural veins; Type II, epidural vein dilation without thrombosis; and Type III, submembranous, epidural-contained hematomas. Although MRI has been reported to be of value in demonstrating the dilated epidural vein the diagnosis is often missed in the preoperative evaluation because of the lack of awareness. The lesion is commonly noted only retrospectively on the MRI. This is particularly so if the patients have concomitant spinal pathology. The commonest misdiagnosis is a sequestered prolapsed nucleus pulposus [2]. MRI characteristics of the epidural varices were described as serpiginous flow void in the epidural space. However, its imaging characteristics depended on the degree of thrombosis within the vein. Thrombosed varices are hyperintense on T1-weighted and T2-weighted images. Flowing blood is hypointense, and a partially patent vein has a variable hypo- and hyperintensity on T2-weighted MRI sequence. Thrombosed varices are hyperintense on T1 and T2-

weighted images. A flowing epidural venous plexus is hypointense on T2 images [14]. In our 2 cases MRI was reported as disc prolapse and retrospectively MRI was reassessed carefully and features suggestive of epidural varices was found.

Conclusion

An abnormal dilated epidural venous plexus that mimics a herniated lumbar disc is a rare entity. This uncommon condition should be always kept in mind during lumbar disc surgery. Preoperative misdiagnosis is common. When faced with this situation, Coagulative ablation of the dilated epidural vein gives good results.

Clinical Message

Proper preoperative assessment of MRI is essential to diagnose epidural varices, which is usually misdiagnosed as disc prolapse and when encountered intraoperatively epidural varices can be successfully treated with coagulative ablation.

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