Lumbar radicular pain caused by epidural varices

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Abstract: Low back pain and sciatica are mainly caused by herniated lumbar disc and spondylotic lumbar canal stenosis. However, some rare entities such as lumbar epidural venous anomalies can result in acute low back pain and sciatica, among which epidural varices are less encountered. It can be not only idiopathic but also secondary to some vascular malformations. In this study, we report two cases of lumbar epidural varices presenting with low back pain and acute severe sciatica. (p115-116)

Key words: Low back pain, sciatica, spinal epidural venous anomalies and epidural varices.

Introduction

Epidural venous plexus enlargement, presenting with low back pain and radiculopathy, is an uncommon cause of nerve roots impingement. It is estimated at 4.5% of operations for lumbar disc herniation. Possible underlying aetiologies that may result in symptomatic epidural varices include vascular anomalies, iliac, superior or inferior vena cava thrombosis, Budd-Chiari syndrome, intracranial hypotension, pregnancy and portal hypertension. Nevertheless, some cases are idiopathic and have no underlying aetiology. We report two cases of such rare entities.

Case 1: A 24-year-old male sailor was admitted with low back pain since few weeks prior to the admission with acute onset of severe right sciatica upon lifting heavy items. He had no history of any underlying disease and also did not have any varicose veins in the lower extremities. There was no neurological deficit. He had positive right straight leg rising (SLR) at 30° and positive left crossed straight leg rising (CSLR) at 45°. X-ray was normal. Magnetic resonance imaging (MRI) of lumbosacral spine was performed and a right paracentral small mass in L5 - S1 space causing an impingement on right S1 root was noted, but to some extent its appearance was different to protruded disc. In lumbosacral MRI with contrast, mild enhancement was seen (Fig. 1). The patient's surgical treatment was performed by right L5 - S1 laminotomy. There were enlarged epidural veins in L5 - S1 space, causing pressure on the right S1 root. An adequate specimen was sent to a pathologist and the varix was coagulated by bipolar diathermy. Then we divided and removed it. Excellent postoperative recovery of radicular pain was achieved. A pathologist reported a tissue with endothelial membrane consistent with a vascular lesion (Fig. 2).

Case 2: A 50-year-old male carpenter was admitted with low back pain and acute onset of severe right sciatica upon lifting heavy objects. He had no history of any underlying disease and also did not have any varicose veins in the lower extremities. The neurological test was normal. He had positive right SLR at 40° and positive left CSLR at 45°.
X-ray was normal too. In lumbosacral MRI, there was a right paracentral small mass in L4 - L5 space, causing an impingement on right L5 root (Fig. 3). In lumbosacral MRI, by contrast, mild enhancement was seen. The patient's surgical treatment was performed through right L4 - L5 laminatomy. We saw enlarged epidural veins in L4 - L5 space, causing pressure on right L5 root. Specimen was sent to pathology. We coagulated and removed the epidural varix. Again, excellent postoperative pain relief was achieved.

**Figure 3** - MRI at L4 - L5 space showed an epidural varix in a 50-year-old man presented with acute and severe sciatica.

**Discussion**

Neural compression syndromes comprise various aetiologies, causing sciatica, among which herniated lumbar disc and lumbar spondylotic spinal canal stenosis are more frequent. An acute lumbar disc herniation with nerve root compression is usually a reasonably straightforward clinical entity and its appropriate diagnosis and treatment is not difficult. Nevertheless, there are some rare entities which mimic acute lumbar disc herniation, such as vertebral haemangioma with epidural extension, epidural cavernous haemangioma, epidural arteriovenous malformation, paravertebral arteriovenous fistula with epidural venous drainage and epidural varix. These vascular anomalies can be ruled out by spinal MRI, MRA and angiography. Lumbar radicular pain caused by epidural varices is uncommon. It is estimated at 4.5% of operations for lumbar disc herniation. Three anatomical types, thrombosed varix (type 1), non-thrombosed varix (type 2) and localized haematoma (type 3) are described. The mechanism of radicular pain is not fully understood. It may be secondary to compression effect of varix but it may also be secondary to difficulties in venous return. Both of the patients in this study had sudden onset and severe radicular pain upon attempting to lift heavy objects that might cause an increase in the epidural venous pressure and result in varix formation. Any acute increase in epidural venous pressure can cause acute enlargement of these varices and sudden acute radicular pain. Diagnosis can be established by MRI at preoperational stages. The images vary according to the anatomical types and the age of the lesion. In the mentioned cases, abnormal disc bulging was not seen at L5 - S1 and L4 - L5 spaces, respectively. To some extent the appearance of mass was different to the protruded disc or free fragment and moderate enhancement was seen after the injection. According to anatomical classifications, both varices corresponded to type 2.

**Conclusion**

We should consider varicose vein as a possible diagnosis for any patient who would be referred with severe acute onset radicular pain without any evidence of disc herniation in MRI (sagittal plane), but with small, enhancing or non-enhancing mass in axial plane of MRI. Abdominal sonography is recommended to rule out any vascular malformation or venous thrombosis.

In secondary types, treatment is directed toward elimination of underlying cause, but in idiopathic ones, surgery is the treatment of choice with good result.

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**References**