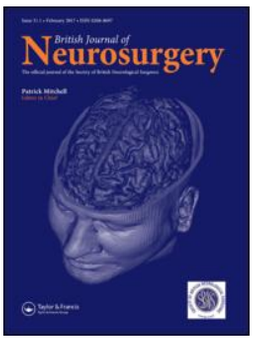

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SHORT REPORT



# Lumbosacral plexopathy secondary to discectomy and fixation

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**ABSTRACT**

Lumbosacral plexopathy (LSP) is a rare entity characterized by acute onset of pain followed by sensory and motor deficits, reflex changes and muscle atrophy. The diagnosis is based on clinical and EMG findings. LSP can result from pelvic tumors, infections, trauma, abdominopelvic or spinal surgery, radiation, intravenous drug abuse, diabetic neuropathy, vasculitis or maybe idiopathic. We present a case report of LSP following spinal surgery treated by pulse steroid and immunotherapy.

**ARTICLE HISTORY**
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**KEYWORDS**
Lumbosacral plexopathy; pulse steroid; immunotherapy; spinal surgery

## Introduction

Lumbosacral plexopathy (LSP) is a rare entity characterized by acute onset of pain followed by sensory and motor deficits, reflex changes and muscle atrophy. The diagnosis is based on clinical and EMG findings. LSP can result from pelvic tumors, local (gastrointestinal, urinary tract and spine) or generalized (HIV) infection, trauma, abdominopelvic or spinal surgery, radiation, intravenous drug abuse, diabetic neuropathy, vasculitis or maybe idiopathic.[1,2] There is no definitive treatment for LSP and management depends on the underlying etiology.[2] In intractable and progressive cases, positive results for steroid and immunotherapy (IVIG) treatment are shown. Full recovery from LSP is not achieved in most cases.

We report a case of LSP following spinal surgery which is treated by pulse steroid plus immunotherapy.

## Case report

48-year-old male patient without any other disease was admitted with severe back pain radiating to front and lateral side of his left thigh. Eight years ago, he had L4-5 microdiscectomy. MRI (Figure 1) showed left L3-4 far lateral disc herniation and a mostly left-sided broad-based L4-5 recurrent disc herniation. L3-4-5 lumbar decompression and posterior fusion with left L3-4, L4-5 microdiscectomy were performed. His pain completely resolved after surgery but he was operated for a CSF leak twice in 10 d. We saw only a small dural tear during both CSF leak surgeries and there were no signs of rootlet injuries. The patient was discharged asymptomatic after the third operation.

Approximately, two weeks after discharge, severe pain extending from the back to the front and lateral side of left thigh developed. Physical examination revealed hypoesthesia of the left L2-3-4 dermatomes, depressed left knee jerk and the left gastrocnemius muscle atrophy. Lumbar CT (Figure 2) and MRI (Figure 3) showed no signs of pressure on the spinal cord or roots. EMG findings were compatible with left lumbar plexopathy with severe axonal loss. Of 750 mg/d dose pulse steroid was given to patient as treatment for 7 d. Visual analog scale (VAS) score was 8 before treatment and decreased to 4 after steroid treatment. Intravenous immunoglobulin (IVIG) was given for 5 d at a dose of 30 g/d for one week. VAS score fell to 1 and the patient had a

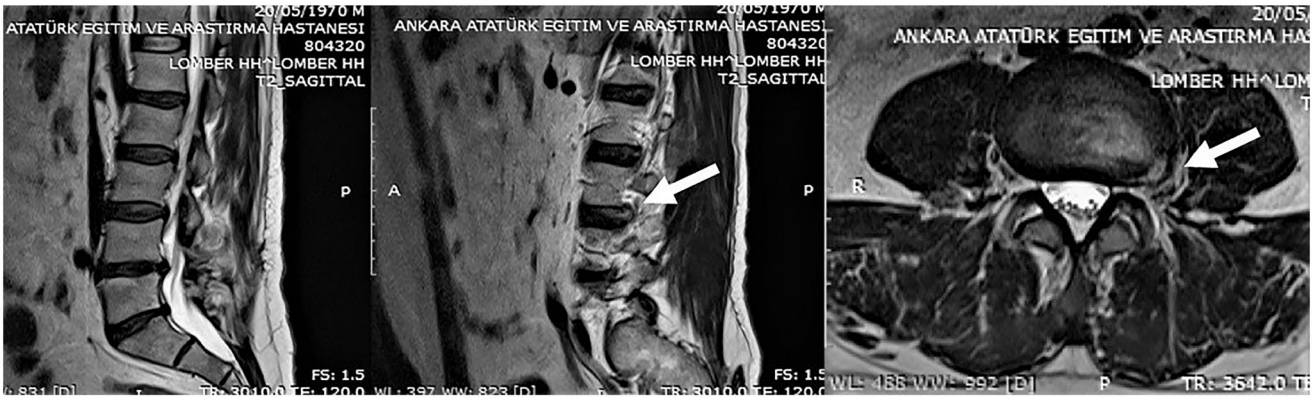


Figure 1. Preoperative MRI showing left L3-4 far lateral disc herniation and mostly left-sided broad-based L4-5 protrusion.

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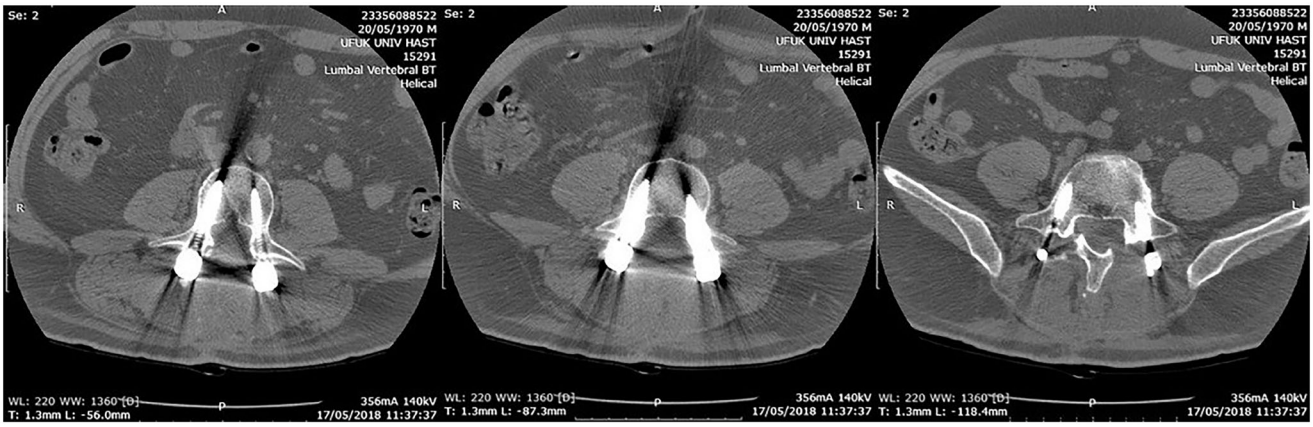


**Figure 2.** Postoperative CT scan showing no signs of pressure on the spinal cord or roots.

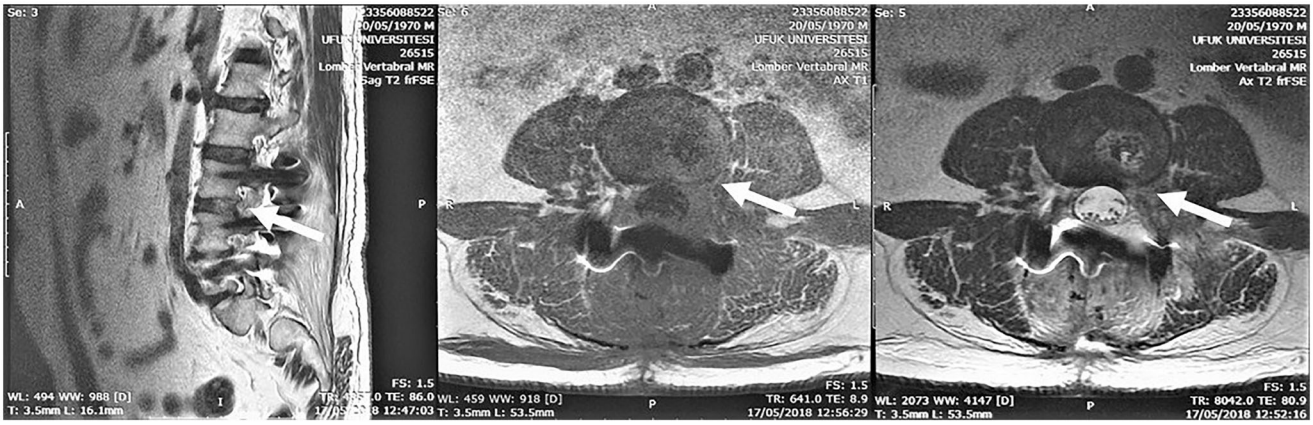


**Figure 3.** Postoperative MRI showing no signs of pressure on the spinal cord or roots.

physiotherapy and rehabilitation program at the end which the VAS was 0. There was no progression of the left gastrocnemius atrophy and no change in left L2-3-4 hypoesthesia.

## Discussion

LSP may be idiopathic or may develop after trauma (especially pelvic fractures),[1] abdominopelvic surgery, pelvic tumors, retroperitoneal hematomas, radiotherapy,[2] infection (Herpes,[3] Borrelia[4] and HIV[5]) intravenous drug abuse[6] and also may accompany with diabetic neuropathy, vasculitis, amiloidosis[7] and spinal surgery.[8,9]

The exact pathophysiology of LSP remains unclear but nerve biopsy from involved segment shows evidence of ischemic injury and perivascular inflammation, hemosiderin, disruption of small blood vessels by inflammatory infiltrates.[10] Although there is no definitive treatment, the elimination of the underlying etiology should be targeted. Due to inflammatory etiology of some cases, corticosteroid and immunotherapy can stop inflammatory damage and despite lack of clear evidence for efficacy in improving neurologic deficits positive results for steroid and immunotherapy (IVIG) treatment are reported.[11–14] Recovery from LSP is often incomplete, over the following months or years.[14,15]

## Conclusion

As shown in this case report, among causes of neurological problems after spinal surgery, LSP should be taken as a differential diagnosis which is rare and hard to be stated. In conclusion, pulse steroid and immunotherapy should be considered especially in progressive and intractable LSP cases. Only two cases have been reported in the literature related to LSP following spinal surgery.[8,9] In our case, we thought that the LSP developed in subacute or chronic period and cause severe pain and limb atrophy.

## Ethical approval

All procedures performed in this report involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Informed consent

Informed consent was obtained from the patient in the report.

## Disclosure statement

The authors declare that they have no conflict of interest.

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