



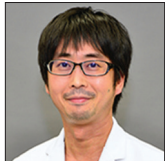
Case Report

Middle cluneal nerve entrapment neuropathy attributable to lumbar disc herniation

Juntaro Matsumoto¹, Toyohiko Isu¹, Kyongsong Kim², Koichi Miki¹, Masanori Isobe¹

¹Department of Neurosurgery, Kushiro Rosai Hospital, Kushiro, Hokkaido, ²Department of Neurosurgery, Nippon Medical School, Chiba Hokuso Hospital, Inzai, Chiba, Japan.

E-mail: *Juntaro Matsumoto - juntaro.matsu@gmail.com; Toyohiko Isu - tqa00131@nifty.com; Kyongsong Kim - kyongson@nms.ac.jp; Koichi Miki - em.koichi@gmail.com; Masanori Isobe - m-isobe@rio.odn.ne.jp



***Corresponding author:**

Juntaro Matsumoto,
Department of Neurosurgery,
Kushiro Rosai Hospital,
Kushiro, Hokkaido, Japan.

juntaro.matsu@gmail.com

Received : 15 February 2021

Accepted : 27 February 2021

Published : 30 March 2021

DOI

10.25259/SNI_167_2021

Quick Response Code:



ABSTRACT

Background: Middle cluneal nerve entrapment neuropathy (MCN-EN) is a known cause of low back pain (LBP). Here, we succeeded in treating a patient with a lumbar disc herniation who actually had MCN-EN with a nerve block and neurolysis.

Case Description: A 52-year-old female presented with severe left lower back and lateral thigh pain making it difficult to walk. The lumbar MRI revealed a disc herniation on the left at the L5/S1 level. On palpation, we identified a trigger point on the buttock where the MCN penetrates the long posterior sacroiliac ligament between the posterior superior and inferior iliac spine. Two left-sided MCN blocks, followed by the left MCN neurolysis procedure, were performed under local anesthesia. At the last follow-up, 10 months after surgery, the LBP has not recurred, and she requires no medications for pain control.

Conclusion: Here, a patient with a left-sided L5S1 disc herniation and low back/leg pain was successfully treated for MCN-EN with nerve block followed by neurolysis.

Keywords: Lumbar disc herniation, Middle cluneal nerve, Mimic

INTRODUCTION

Superior cluneal nerve entrapment neuropathy (SCN-EN) and middle cluneal nerve entrapment neuropathy (MCN-EN) are a known cause of low back pain; its' etiology remains unknown (LBP).^[1-9,11-14] Treatment options include nerve blocks and/or neurolysis under local anesthesia.^[2-6,8,9,11,13,14] Here, we report the successful treatment of MCN-EN in a patient with a left-sided lumbar disc herniation at the L5S1 level, whose symptoms of low back/leg pain resolved following a left-sided MCN-EN nerve block and neurolysis procedures.

Etiology of MCN-EN

The etiologies of MCN-EN and SCN-EN^[2,4,6,7,11-13] remain unclear. Various pathologies for MCN-EN and SCN-EN have included lumbar disc herniations, lumbar spinal canal stenosis, scoliosis, and even Parkinson's disease.^[9] Most SCNs at risk for entrapment originate from the lower lumbar nerve roots where entrapment may involve the S1-S4 nerve roots.^[10] The source of neural compression of the MCN is the hard orifice between the iliac bone and the long posterior

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sacroiliac ligament (LPSL) (define) (i.e., as it passes the gluteal maximus muscle [GMaM] define and reaches the skin). Both the SCN-EN and MCN-EN may be associated with increased paravertebral muscle and^[13] GMaM (define) muscle tone.^[12]

CASE DESCRIPTION

A 52-year-old female suddenly presented with the 5-day onset of the left-sided low back and left thigh pain without any focal neurological deficits. Her pain rated by multiple scoring systems (e.g., numerical rating scale [NRS] of 9, her Roland-Morris Disability Questionnaire [RDQ] score of 21, and her Japanese Orthopedic Association [JOA] score of 8). Lumbar X-rays were unremarkable, while the MR revealed a disc herniation on the left at L5/S1 level [Figures 1 and 2].

Treatment with nerve blocks

Palpation identified a trigger point located 35 mm caudal to the posterior superior iliac spine (PSIS) at a site slightly lateral at the edge of the iliac crest. This local suggested MCN-EN as the MCN penetrates the LPSL between the PSIS (define) and the posterior inferior iliac spine (PIIS define). A MCN block was performed utilizing 0.75% ropivacaine (2 ml); the pain was transiently relieved (NRS = 1). She was diagnosed with a MCN-EN associated with the lumbar disc herniation. A second MCN block (PERFORMED WHEN?) yielded pain control, and she was discharged 12 days later.

Recurrent symptoms

Thirty days postdischarge, her symptoms gradually reappeared and exacerbated. She subsequently underwent a left MCN neurolysis under local anesthesia; a 6 cm linear incision performed under the surgical microscope, allowed the distal portion of the MCN to be exposed after splitting the GMaM and opening the GMaM fascia (SPELL OUT). LPSL penetration of the MCN was confirmed, and the MCN was decompressed by incising the LPSL [Figure 3].

Postoperative course

Postoperatively, her pain was alleviated, and she immediately returned to work. Although the MRI demonstrated an increasing lumbar disc herniation, she was able to be treated conservatively. Ten months later, her LBP had not recurred, and she required no medication (NRS 0, RDQ score 0, and JOA score 28).

DISCUSSION

MCN-EN: Pure sensory nerve branch

The SCN and MCN are pure sensory nerve branches that arise from the dorsal rami of the spinal nerve roots. The SCN



Figure 1: Sagittal image, T2-weighted MRI showing lumbar disc herniation at the level of the left L5/S1.

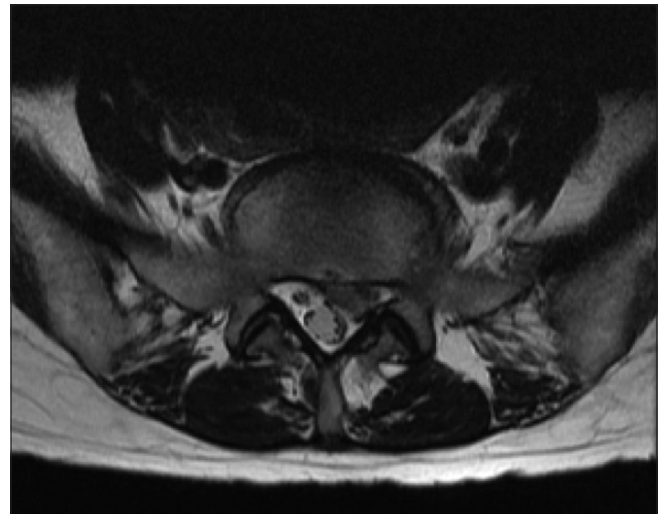


Figure 2: L5/S1 axial image, T2-weighted MRI showing lumbar disc herniation at the level of the left L5/S1.

originates from the lower thoracic and lumbar posterior nerve roots; its' entrapment around the iliac crest can elicit LBP.^[2-9,11,13,14] SCN-EN occurs in 1.6–14% of patients with LBP and in 47–84% of patients with leg symptoms.^[11,13,14] It may be important to differentiated SCN-EN pain from radiculopathy due to lumbar disease.^[2,9]

Entrapment of the MCN

Entrapment of the MCN, a nerve that originates at S1–S4, between the PSIS define and the PIIS define by the LPSL, can also result in LBP.^[1,7,10,12,14] After MCN neurolysis, our patient reported alleviation of her LBP and leg symptoms, which may have been associated with lumbar disc herniation.

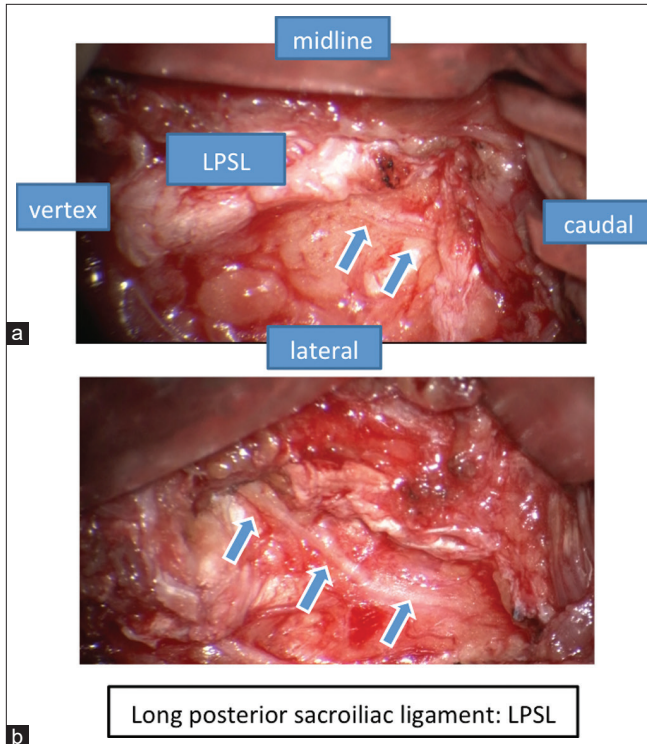


Figure 3: Intraoperative photographs. (a) The distal portion of the middle cluneal nerve (MCN) (arrow) is exposed where it penetrates the long posterior sacroiliac ligament (LPSL) at the proximal portion. (b) The MCN (arrows) is decompressed proximally by incising the LPSL.

Diagnosis of MCN-EN shorten use tables

The diagnoses of MCN-EN and SCN-EN are based on the clinical presentations and the ability to reduce pain utilizing MCN blocks.^[7,12,13] In our patient, the trigger point was located where the MCN runs through the LPSL (define) between the PSIS (define) and the PIIS (define). Although she had a lumbar disc herniation, the dramatic alleviation of her pain with the MCN block helped confirm the diagnosis of MCN-EN.^[7,12] Other patients with severe lumbar canal stenosis, scoliosis, and old vertebral compression fractures may actually have MCN-EN and might respond favorably to nerve block/neurolysis procedures.^[7,12]

CONCLUSION

We report that MCN-EN treatment with initial nerve block followed by neurolysis resulted in sufficient alleviation of LBP to avoid lumbar disc surgery.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Matsumoto J, Isu T, Kim K, Miki K, Isobe M. Middle cluneal nerve entrapment neuropathy attributable to lumbar disc herniation. *Surg Neurol Int* 2021;12:132.