Superior cluneal nerve entrapment neuropathy SCNEN

Low back pain is a highly prevalent condition with substantial costs. Superior cluneal nerve neuralgia is present in up to 14% of low back pain cases. This etiology of back pain is often overlooked because the symptoms of superior cluneal neuralgia manifest similarly to those of other conditions, such as radiculopathy and sacroiliac joint pain.

Clinical features

Superior cluneal nerve entrapment neuropathy is a cause of low back pain (LBP).

Differential diagnosis

It can be misdiagnosed as a lumbar spine disorder.

Treatment

Although surgical release at the entrapment point of the osteofibrous orifice is effective, intraoperative identification of the thin SCN in thick fat tissue and confirmation of sufficient decompression are difficult.

Indocyanine green video angiography visualized the SCN and its termination at the entrapment point. After sufficient decompression, the SCN was clearly visualized on ICG-VA images. Low back pain improved significantly, from a preoperative Roland-Morris Questionnaire score of 13.8 to a postoperative score of 1.3 at the last follow-up visit ($p < 0.05$). The authors suggest that ICG-VA is useful for the inspection of peripheral nerves such as the SCN and helps to identify the SCN and to confirm sufficient decompression at surgery for SCN entrapment [1)]

Case series

5 patients with intermittent LBP due to SCNEN who had previously received conservative treatment underwent surgery. The findings are reported and the etiology of LBP is discussed to determine whether it is attributable to SCNEN.

Between April 2012 and March 2013, 5 patients in this study who had intermittent LBP due to SCNEN underwent surgery. The patients included 3 men and 2 women, with a mean age of 66 years. The affected side was unilateral in 2 patients and bilateral in 3 (total sites, 8). The interval from symptom onset to treatment averaged 51.4 months; the mean postoperative follow-up period was 17.6 months. The clinical outcomes were assessed using the numerical rating scale (NRS) for LBP, the Japanese Orthopaedic Association (JOA) scale, and the Roland-Morris Disability Questionnaire (RDQ) preoperatively and at the last follow-up; these data were analyzed statistically.

None of the 5 patients reported LBP at rest. Intermittent LBP involving the iliac crest and buttocks was induced by standing or walking an average of 136 m. In 2 patients with unilateral involvement, LBP was improved only by SCN block. Surgeries were performed on 6 sites in 5 patients because the SCN

block was only transiently effective. Patients' SCNs penetrated the orifice of the thoracolumbar fascia. SCN kinking at the orifice was exacerbated at the lumbar-extension provocation posture, and radiating pain increased upon manual intraoperative compression of the SCN in this posture. After releasing the SCN surgically, disappearance of the pain was intraoperatively confirmed by manual compression of the SCN with the patients in the lumbar-extension posture. Surgery was effective in all 5 patients, and all clinical outcome scores indicated significant improvement ($p < 0.05$).

To the authors' knowledge, this is the first report of patients with intermittent LBP due to SCNEN. Clinical and surgical evidence presented suggests that their LBP was exacerbated by lumbar extension and that symptom relief was obtained by SCN block or surgical release of the SCN entrapment. These results suggest that SCNEN should be considered as a causal factor in patients for whom walking elicits LBP [2].

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Kim K, Isu T, Chiba Y, Morimoto D, Ohtsubo S, Kusano M, Kobayashi S, Morita A. The usefulness of ICG video angiography in the surgical treatment of superior cluneal nerve entrapment neuropathy: technical note. J Neurosurg Spine. 2013 Nov;19(5):624-8. doi: 10.3171/2013.7.SPINE1374. Epub 2013 Sep 20. PubMed PMID: 24053371.
2)
Chiba Y, Isu T, Kim K, Iwamoto N, Morimoto D, Yamazaki K, Hokari M, Isobe M, Kusano M. Association between intermittent low-back pain and superior cluneal nerve entrapment neuropathy. J Neurosurg Spine. 2015 Oct 13:1-5. [Epub ahead of print] PubMed PMID: 26460754.