CLINICAL REPORT

Superior Cluneal Nerve Entrapment Eight Years after Decubitus Surgery

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Abstract

Background and Objective: Superior cluneal nerve (SCN) entrapment is one of the infrequent etiologies of low back pain (LBP), which is rarely diagnosed. Few clinical reports have been published in the literature. We present a case of severe LBP radiating to the ipsilateral buttock after decubitus surgery.

Case Report: A 62-year-old man weighing 85 kg presented to the algology department, suffering from severe LBP of 6 months duration. The pain was in the right iliac crest region with radiation to the ipsilateral buttock. After admission, his history was taken, physical examination was performed, and further evaluations were made. He was suspected of having facet and right sacroiliac joint pain. Two tender points were found 6.5 and 7.5 cm to the right of the midline over the iliac crest. Local anesthetic with corticosteroid was injected at the tender points over the right iliac crest. Five minutes after the injection, the pain dissipated.

Conclusion: SCN entrapment should be considered in patients who suffer from LBP radiating to the iliac crest and buttock after other causes of LBP have been excluded.

Key Words: cluneal nerve, decubitus surgery, diagnosis

INTRODUCTION

Evaluation of soft tissue often reveals nerve entrapment distal to the spine. When this occurs, generally it is thought to be referred pain, not the direct cause of the patient's pain. Complaints of pain over the medial portion of the iliac crest and in the gluteal or lumbosacral area tend to be diagnosed as a facet syndrome, a lower lumbar disc problem, or an iliolumbar syndrome. Superior cluneal nerve (SCN) entrapment is one of the less common etiologies, which is rarely diagnosed. Few clinical reports have been published.

Here we present a case of cluneal nerve entrapment resulting in severe low back pain (LBP) radiating to the ipsilateral buttock after decubitus surgery.

CASE REPORT

A 62-year-old man weighing 85 kg presented with unremitting LBP. He provided a history of having undergone coronary artery bypass surgery 8 years previously. His postoperative course was complicated, and he remained in the intensive care unit (ICU) for 2 months because of respiratory insufficiency. During his ICU stay, he developed a decubitus ulcer in the right sacro-gluteal region. He subsequently underwent decubitus ulcer surgery after discharge from the ICU. Two weeks after surgery, he was discharged from hospital without any further complication. He presented to the algology department 8 years later suffering from severe LBP of 6 months duration, localized to the right iliac
crested with radiation to the ipsilateral buttock. He was previously treated with physical therapy and medications, including nonsteroidal anti-inflammatory drugs, without relief.

After admission to the algology department, a history and physical examination were performed, and radiologic, orthopedic, and neurological evaluations were undertaken. On examination, straight-leg-raising tests were negative bilaterally. Both forward and backward bending were painful and limited. Pain worsened with spine rotation and crouching. Palpation over the sacroiliac joints, spinous processes, and interspinous ligaments was less painful. The patient was suspected of having facet and right sacroiliac joint pain. Tender points were found 6.5 and 7.5 cm to the right of the midline over the iliac crest. The tender points, upon tactile stimulation, elicited pain radiating from the low back down to the buttock, consistent with the distribution of SCN branches. His pain on a visual analog scale was 8 to 9 out of 10.

Radiological examination included anteroposterior, lateral, and bilateral oblique radiographs of the lumbosacral spine; anteroposterior suprapubic radiographs of the pelvis and the sacroiliac joints; and magnetic resonance imaging (MRI) of the lumbosacral spine. These studies revealed no pathologic findings. Orthopedic and neurosurgical consultations also revealed no abnormalities.

A combination of local anesthetic and corticosteroid was injected into the tender points over the right iliac crest. This was effective in reducing the pain within 5 minutes. The patient was discharged after a 1-hour observation with a complete pain relief and no need for additional medication. He was evaluated 4 days later at which time he remained pain-free. Seven days after the first procedure, the pain returned, and he underwent a second injection. The second procedure was also effective in reducing the pain. Over the next 2 weeks, his pain decreased gradually. During his final visit, at 3 months, he had no pain complaints.

**TECHNIQUE**

The patient was taken to the operating room and positioned prone under sterile surgical conditions. The right posterior iliac crest was marked at 6.5, 7.5, and 8.5 cm for the approximate location of the SCN under fluoroscopic guidance. Tender points at 6.5 and 7.5 cm lateral to midline (L4) at the level of the right iliac crest over the distribution of SCN, were each infiltrated with 3 mL of 0.2% ropivacaine with 20 mg triamcinolone. Complete pain relief was obtained after the procedure. During the second procedure infiltrations with 2 mL of 0.2% ropivacaine with 10 mg triamcinolone were used.

**DISCUSSION**

Neural entrapment involves a mechanical irritation of a specific peripheral nerve when it becomes locally compressed at a given anatomical site. An extensive literature search revealed relatively few reports describing SCN entrapment and therapy.

Common entrapment neuropathies include intercostal, median (carpal tunnel), lateral femoral cutaneous, and ulnar and peroneal nerves. Lu et al. initially described the anatomic relationship of the SCN to the posterior iliac crest and thoracolumbar fascia. They dissected 15 cadavers and found that the medial branch of the SCN is confined within a tunnel created by the thoracolumbar fascia and the superior rim of the iliac crest as the nerve passes over the iliac crest. The location is 7 to 8 cm lateral to the midline on the iliac crest, just lateral and superior to the posterior superior iliac spine.

If this pain location was due to a facet syndrome, the facet affecting the superior cluneal nerves would be at the level of T12, L1, or L2, whose nerves come out through the lumbosacral fascia at the lateral origin of the sacrospinalis muscles and cross over the dorsal part of the posterior iliac crest. Pressure over the involved facet joint often evokes pain in facet syndrome, and the pain would typically be relieved if the facet joint was injected. The tender point involved corresponded to the insertion of the iliolumbar ligament, but the insertion of the iliolumbar ligament is on the anterior aspect of the iliac crest and cannot be palpated. However, injection of a trigger point in this area might offer relief because of its effect on the adjacent cluneal nerve.

All branches of the SCN extend from a perforating point on the fascia to their cutaneous innervation on the buttock. In this case, the SCNs were probably entrapped between the rigid fibers of the thoracolumbar fascia and the iliac crest.

Nerve compression lesions usually result from the combination of several types of trauma on the nerve, including traction, friction, and repetitive compression, which lead to local edema in the surrounding tissue and interference with the normal sliding movement of the nerve. In SCN entrapment neuropathy, the anatomic and functional bases for the development of the lesions are a rigid fascial edge and stretch of the gluteus maximus and skin over a large area by flexion of the hip.
joint, especially during activity. The nerve becomes subjected to stretching forces that cause tissue edema, irritation, inflammatory cell infiltration, and scarring, which leads to the subsequent entrapment.  

Entrapment neuropathies are usually treated conservatively, unless the symptoms become severe and weakness or atrophy develops. Diagnostic blocks with local anesthetics can be used and, if successful in relieving the pain, the patient may be treated by injection of local anesthetics with steroid, surgical release, cryotherapy, or phenol injection. In this case, we performed 2 SCN injections with local anesthetic and steroid. The patient remained pain-free at 3 months following treatment.

In summary, SCN entrapment should be considered for individuals with LBP radiating to the iliac crest and buttock when other causes of LBP have been excluded.

REFERENCES


