

Superior Cluneal Neuralgia Treated With Wireless Peripheral Nerve Stimulation

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INTRODUCTION

- The Superior Cluneal Nerve is a nerve that provides sensory innervation to the posterior iliac crest and the skin overlying the superior portion of the gluteus maximus.
- Patients with Superior Cluneal Neuralgia (SCN) can present with symptoms ranging from limitations in lumbar motion to radiating pain into the legs and antalgic gait, leading to misdiagnosis and the risk of unnecessary spine surgeries.
- The most common etiology of SCN is iatrogenic, such as autologous bone graft harvest from the iliac crest, spinal surgical procedures, debridement procedures, or muscle flap surgeries.
- The treatment options for SCN include local nerve blocks and neuroablative procedures such as phenol neurolysis or radiofrequency ablation. In refractory cases, surgical decompression can be utilized to decompress the distal superior cluneal nerve branches or the contributing lumbar radicular segments. PNS has been explored more recently as an option for patients with refractory SCN.
- This case report entails considering SCN in the differential for low back pain and the successful utilization of peripheral nerve stimulation (PNS) for treatment.

CLINICAL FINDINGS

- A 65-year-old male presented with three years of lower back pain (LBP) after a lumbar laminectomy and fusion at L3 to L5 levels. Surgery was complicated by a retained needle in the left supra-gluteal region and the patient underwent debridement surgery to retrieve the needle. The surgical incision extended from the left superior gluteal region to the iliac crest.
- Two weeks after the procedure, the nature of the pain changed from sharp pain to burning, stabbing pain over the surgical site that radiated to the lateral part of his left hip, thigh, and groin. The pain was constant and worsened with sitting, walking, or contact with clothing. It was a 10/10 on the Numeric Rating Scale (NRS). The physical examination revealed hyperalgesia over the superior gluteal region.
- Despite various treatments, including medications, injections, and physical therapy, the patient's pain persisted, significantly impacting his quality of life.
- The patient underwent a diagnostic Superior Cluneal Nerve Block, which provided significant pain relief for two weeks. Considering the substantial improvement with the nerve block, a wirelessly powered peripheral nerve stimulation (PNS) system was trialed for SCN. The patient reported 100% resolution of his symptoms during the initial PNS trial.
- The patient was then received a permanent implant with a Stimwave PNS system.

FIGURES / IMAGES



Figure 1: Thirteen-gauge introducer Tuohy needles placed over the left iliac crest.

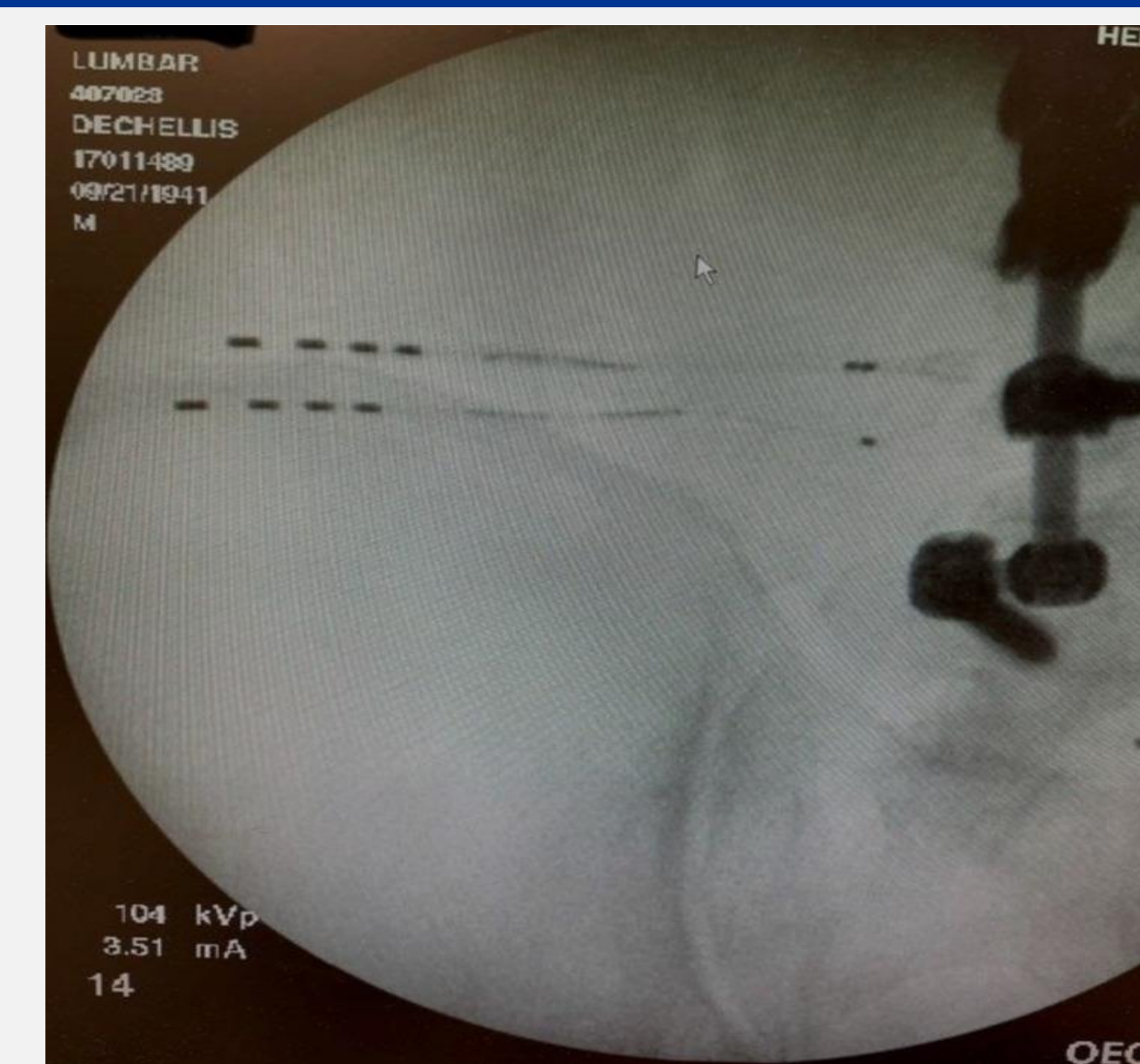


Figure 2: Two Stimwave wireless peripheral stimulator leads placed over the left iliac crest. The coils are made at the end of the leads and buried under the skin.

OUTCOME / SUMMARY

- The Superior Cluneal Nerve traverses through the Psoas Major and Paraspinal muscles, posterior to the Quadratus Lumborum, and then through the inferior Latissimus Dorsi to provide sensory innervation to the posterior Iliac Crest and superior portions of the Gluteus Maximus
- Superior Cluneal Neuralgia should be considered in the differential for patients with LBP, especially with incisions in the appropriate areas.
- The most common etiology of SCN is iatrogenic, such as autologous bone graft harvest from the iliac crest. Other risk factors include conditions or procedures that can increase myofascial compression, such as fibrosis following spinal or gluteal procedures or maladaptive posturing due to pain or other medical conditions.
- Peripheral nerve stimulation can be an effective long-term treatment strategy for the management of refractory Superior Cluneal Neuralgia.

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