Peripheral Nerve Stimulation for Refractory Left Inguinal Neuralgia after Bilateral Open Inguinal Hernia Repair

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OBJECTIVES:

This case supports peripheral nerve stimulation (PNS) as an effective, minimally invasive option for refractory post-herniorrhaphy inguinal neuralgia, particularly in patients with comorbid HIV where pharmacologic options are limited by drug-interaction risk.

INTRODUCTION:

Chronic postsurgical inguinal pain after open hernia repair affects up to 11% of patients and can be refractory to conservative interventional therapy. Management is complicated in patients with comorbid HIV due to potential drug interactions and limited pharmacologic options.

We present a case of debilitating, refractory left inguinal neuralgia in a 66-year-old man successfully treated with peripheral nerve stimulation (PNS) after failure of medical and ablative therapy.

PATIENT SNAPSHOT

- 66-year-old male
- **Medical History:** HIV on dolutegravir/darunavir
- **Surgical History:** Bilateral open inguinal hernia repair (4 years prior)
- **Pain Location:** Debilitating L inguinal/ suprapubic pain
- **Pain Characteristics:** Sharp, cramping, intermittent, and worsened by sitting, exertion, and pressure
- **Physical Exam:** Intact sensation, diffuse L inguinal tenderness

DIFFERENTIAL DIAGNOSIS OF CHRONIC GROIN/INGUINAL PAIN

- Ilioinguinal/iliohypogastric neuralgia (confirmed)
- Recurrent or residual inguinal hernia
- Genitofemoral neuralgia
- Osteitis pubis / pubic symphysis pathology
- Hip joint pathology (labral tear, osteoarthritis)
- Lumbar radiculopathy (L1–L2 distribution)
- Mesh-related inflammatory reaction or granuloma

PRIOR TREATMENT FAILURES:

Pharmacotherapy Meloxicam, duloxetine, acetaminophen, pregabalin *No meaningful relief*	**Diagnostic Nerve Block** Left ilioinguinal/iliohypogastric block *50% relief (VAS 8/10→4/10) x 2 weeks*
Radiofrequency Ablation Left ilioinguinal/iliohypogastric nerves *Relief x several weeks, then returned*	**TENS Unit** Trialed at home *No meaningful benefit*

Table 1. Prior interventions attempted and outcomes, in chronological order.

PNS DEVICE:

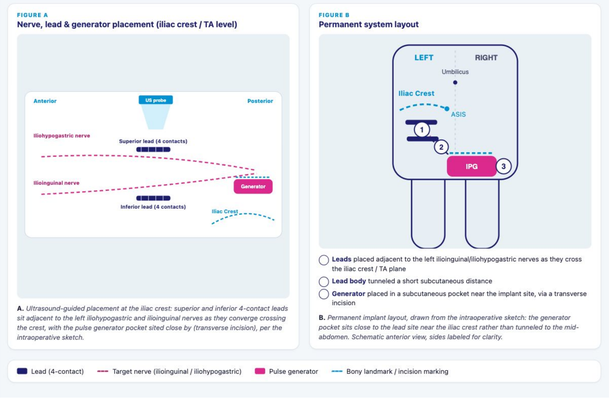
The Nalu Neurostimulation System, an eight-contact peripheral nerve stimulation lead paired with a small, rechargeable, implantable pulse generator placed in a subcutaneous pocket, was used.

FDA clearance (K232415) covers pain management in adults with severe, intractable chronic pain of peripheral nerve origin which was consistent with this ilioinguinal/iliohypogastric application.

TECHNIQUE AND PLACEMENT:

The patient underwent ultrasound-guided trial PNS lead placement (Nalu system) targeting the left ilioinguinal and iliohypogastric nerves at the iliac crest/transversus abdominis level. 2 4-contact leads were placed superior and inferior to the nerves under direct visualization, with sensory testing confirming coverage of the pain distribution.

5 months later, he underwent permanent implantation where leads were placed adjacent to the target nerves under ultrasound with intraoperative stimulation confirming pain distribution coverage before deployment, and a subcutaneous generator pocket was created via a transverse incision.



OUTCOME:

After the PNS trial, pain was quantified using the visual analog scale (VAS). The trial achieved 90% relief (VAS 8/10 to 1/10). After permanent lead placement, the patient was discharged same-day with close to 90% pain relief. No procedural complications were reported.

DISCUSSION:

This case demonstrates successful peripheral nerve stimulation (PNS) for refractory left inguinal neuralgia following bilateral open hernia repair in an older adult with comorbid HIV, where pharmacologic options are limited by drug-interaction risk.

After multimodal pharmacotherapy, nerve blockade, and radiofrequency ablation failed, ultrasound-guided PNS with sensory-guided lead placement achieved almost complete symptom resolution.

CONCLUSIONS:

- Near-complete resolution of refractory left inguinal neuralgia after failure of pharmacotherapy, nerve block, and radiofrequency ablation.
- Sensory-guided lead placement was key to confirming coverage of the pain distribution before permanent deployment.
- PNS may be especially valuable in patients with comorbid chronic disease.
- Findings support PNS as an effective, minimally invasive option for refractory post-herniorrhaphy inguinal neuralgia when conservative and ablative therapies fail.

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