



## Introduction

Meralgia paresthetica is a sensory neuropathy caused by entrapment of the lateral femoral cutaneous nerve (LFCN) and presents as numbness, tingling and pain in the anterolateral thigh. Typical causes of nerve entrapment include obesity, tight clothing/belts, trauma, pregnancy, and rarely pelvic mass. Lumbar spinal tumors abutting the posterior divisions of the L2 and L3 spinal nerves present an unusual etiology of meralgia paresthetica. Diagnosis is usually clinical though local anesthetic injections and electrodiagnostic studies can help confirm diagnosis. Treatment options include weight loss, loose clothing, neuropathic pain medications and LFCN injection. Neuromodulation with Peripheral Nerve Stimulation (PNS) presents another therapeutic option for refractory cases.

## Methods

Patient's informed consent was obtained for submission of this case report, which is devoid of patient identifiable information and thus exempt from IRB review per Emory policy.

## Case Report

A 40-year-old female with past medical history of pulmonary embolus, cardiac arrest, nephrolithiasis, depression, remote T11-L4 fusion for scoliosis, psoas muscle desmoid tumor status-post partial resection and radiation therapy complicated by development of radiation-induced lumbar spine osteosarcoma (L1-3) status-post chemotherapy and proton beam treatment presented with severe right anterolateral thigh burning pain with inability to lay on the right side. She failed methadone, oxycodone, gabapentin, pregabalin, vilazodone, and cyclobenzaprine as well as physical therapy. MRI imaging revealed residual psoas desmoid tumor with possible compression of the LFCN as well as L2/3 vertebral body osteosarcoma with neuroforaminal stenosis at L2-3 and L3-4.

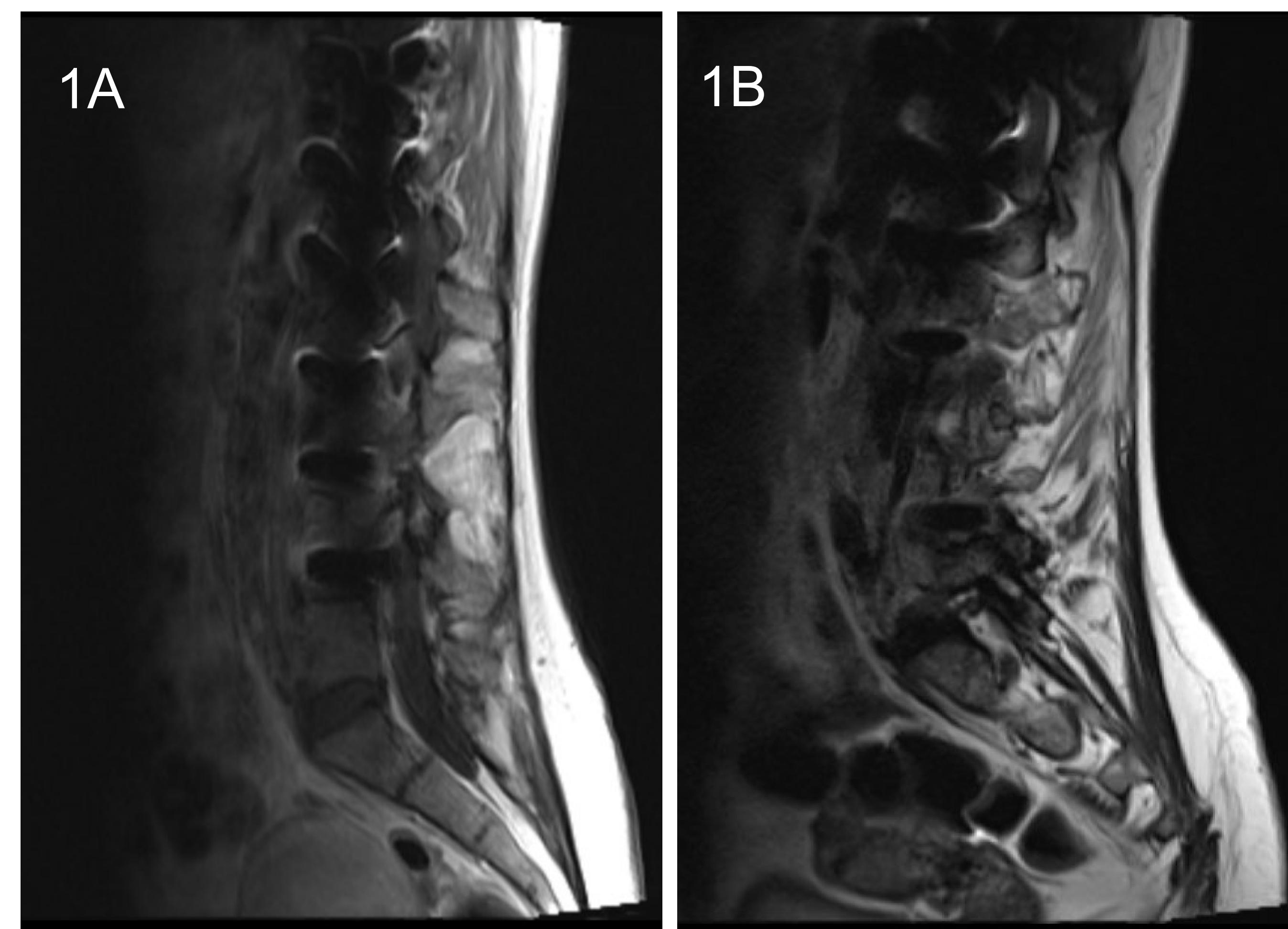


Figure 1A and B: MRI T2 showing abnormal asymmetric enlargement of the right psoas muscle with heterogeneous enhancement, concerning for residual desmoid tumor, possibly admixed with scar tissue at site of prior surgery/radiation

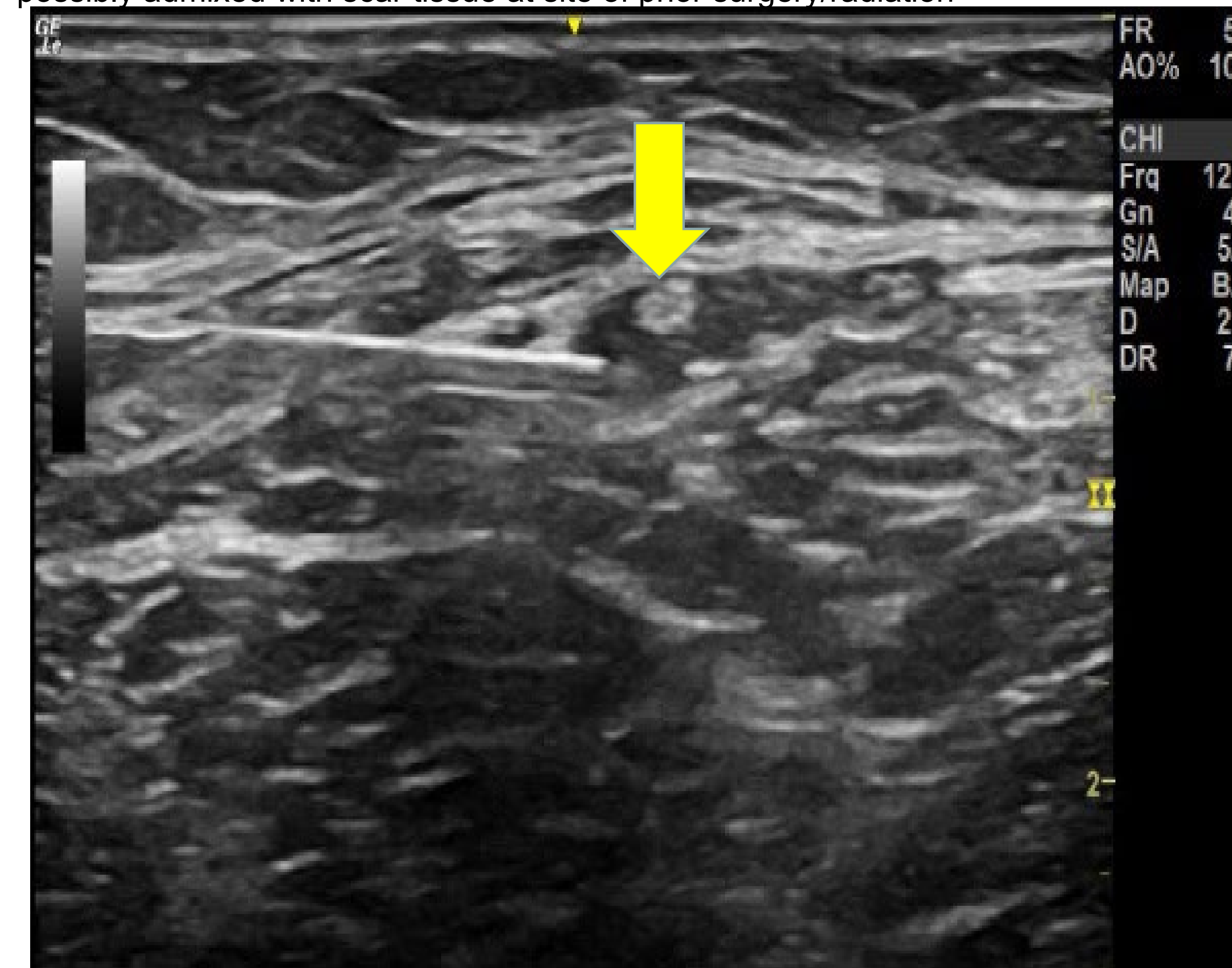


Figure 2: Introducer with PNS lead approaching in-plane the lateral femoral cutaneous nerve in cross-section (identified with yellow arrow).

Neurosurgery deemed the patient nonsurgical. Ultrasound-guided LFCN nerve block was performed twice with dexamethasone/bupivacaine which reduced her Visual Analogue Scale from constant 7-8 intensity to intermittent 4-5 level pain with improved ambulation lasting for one month following each injection. Subsequently a temporary PNS system targeting the LFCN was implanted for 60 days, providing 70% analgesia with sitting and laying down and 20% analgesia with ambulation; sleep quality was markedly improved. Since pain returned within one hour of removing the temporary PNS device, decision was made to proceed with a permanent PNS system.

## Discussion

While meralgia paresthetica usually occurs secondary to lateral femoral cutaneous nerve entrapment at the level of the inguinal ligament it can rarely be seen in patients with tumor/metastasis of the second or third lumbar vertebrae<sup>1; 2</sup> as seen in our patient. When symptoms persist despite weight loss, neuropathic pain medications and injections, treatment options include neurolysis, neurectomy and neuromodulation. While no randomized trials exist for the treatment of meralgia paresthetica,<sup>3</sup> several observational studies and case reports have shown improvement with local anesthetic injections, surgical decompression and neuromodulation.<sup>3; 4</sup> In cases where surgical treatment is not an option, neuromodulation may be the preferred treatment. While neuromodulation with temporary PNS has shown durable analgesia in some neuropathic conditions, our patient lost analgesia after removal of the temporary PNS device prompting pursuit of a permanent system to improve quality of life.

## References

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4. Langford B, Mauck WD. Peripheral nerve stimulation: A new treatment for meralgia paresthetica. *Pain Med* 2021;22:213-216.