

Peripheral Nerve Stimulation
for Medically Refractory
Revascularization Steal Pain
and Post-amputation Pain of
the Lower Extremity

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INTRO

- Steal pain after deep vein arterialization, caused by diversion of arterial blood flow away from native circulation into a lower resistance arterialized venous system, is a type of ischemic pain which can be severe and difficult to treat.
- We present a case of acute postoperative steal pain in the lower extremity that was treated with a temporary 60-day peripheral nerve stimulation system placed while inpatient before discharge.

CASE REPORT

This is a 69 y.o. male with type 2 diabetes mellitus, congestive heart failure, sleep apnea, and peripheral arterial disease with recent history of deep vein arterialization of the posterior tibial artery to his posterior tibial vein in the left lower extremity to heal chronic foot wounds in anticipation of potential amputation.

Soon after discharge, he was readmitted to the hospital for uncontrolled left leg pain, and underwent balloon angioplasty of the deep vein arterialization segment and ultimately required transmetatarsal amputation. His pain was initially treated with opioids and ketamine infusion. Unfortunately, rapid escalation of opioids resulted in two respiratory events requiring ICU admission.

We then placed a left popliteal sciatic continuous nerve block, which provided excellent analgesia and decreased opioid requirements. Prior to discharge, the nerve block was removed, and a temporary 60-day peripheral nerve stimulation system was placed (figure). The patient reported good pain control, and was able to discharge the following day.

Peripheral nerve
stimulation is effective for
acute vascular steal pain

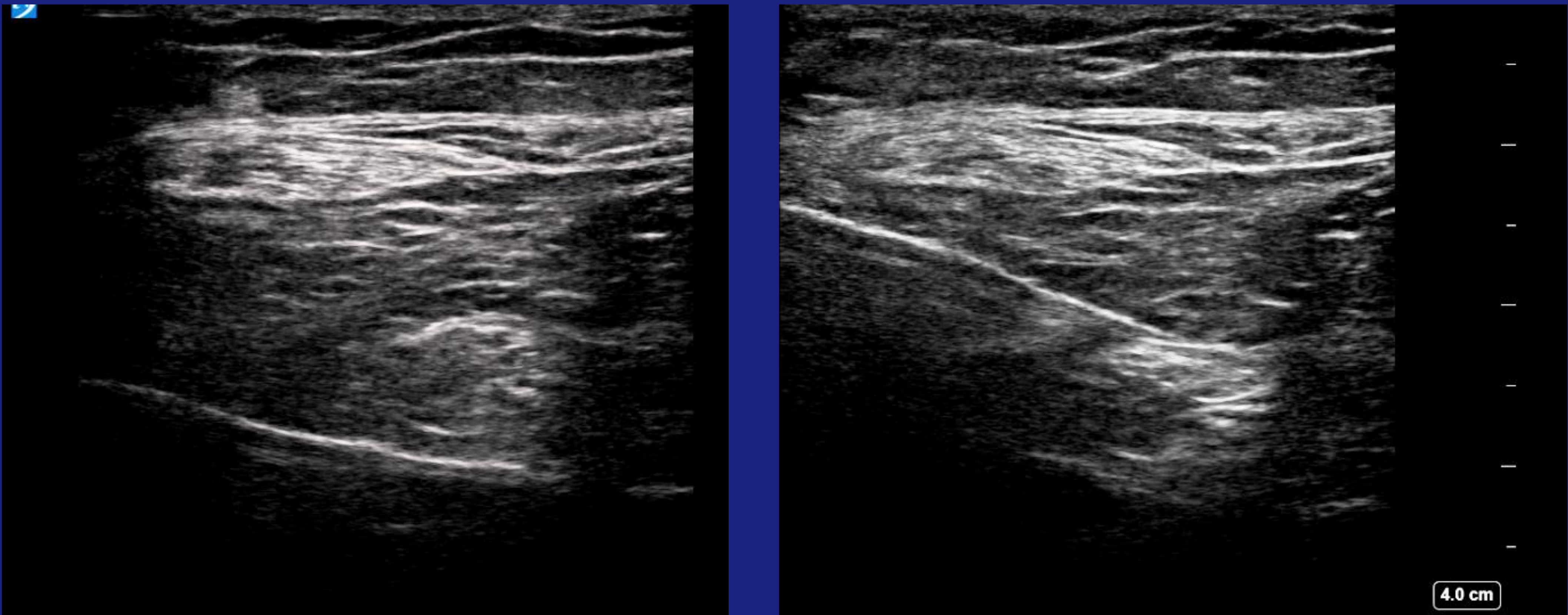


Figure: Ultrasound visualization of sciatic peripheral nerve stimulator leads placed in the left popliteal fossa

DISCUSSION

While continuous nerve block techniques can be employed in the short term for acute ischemic pain, **postoperative steal pain can last for weeks to months** and is more reasonably treated with longer term interventions. This case illustrates the **novel use of temporary peripheral nerve stimulation in a setting outside of chronic pain**, with the demonstrated benefits of **decreasing opioid requirements** and associated adverse respiratory events while **avoiding dense motor blockade**.

