

Introduction

- There is evolving literature regarding peripheral nerve catheters in microvascular free flap surgery to aid in postoperative pain, length of hospital stay, and flap survival via sympathectomy effects.
- Previous studies investigated regional techniques including adductor canal (AC) blocks, popliteal blocks, spinal, and epidural anesthesia.^{1, 2}
- To our knowledge, no literature exists regarding infiltration between the popliteal artery and capsule of the knee (iPACK) approach for microvascular surgery.
- **We report on a patient who received a modified iPACK catheter for an anterolateral thigh (ALT) free flap to the lower extremity.**

Methods and Materials

- A literature review was performed investigating peripheral nerve catheters for microvascular surgery. The patient's chart was thoroughly reviewed, and her course is reported here. At the time of placement, the patient gave verbal consent to write this case report.
- This report does not contain any patient identifiable information; therefore, it is exempt from IRB review as per Colorado Multiple Institutional Review Board (COMIRB) policy.

Case

- A 54-year-old female with past medical history of right lower extremity sarcoma status post radical resection presented for ALT free flap reconstruction. The Acute Pain Service was consulted for perfusion catheter placement.
- A “modified iPACK catheter” was placed with the catheter tip terminating between the popliteal vessels and the sciatic nerve.
- Her operative course was uncomplicated, and she was monitored in the ICU postoperatively. The patient's pain was well controlled, and the primary team noted no issues with flap perfusion. The catheter was removed per institutional protocol on POD 5 and she was discharged on POD 10.

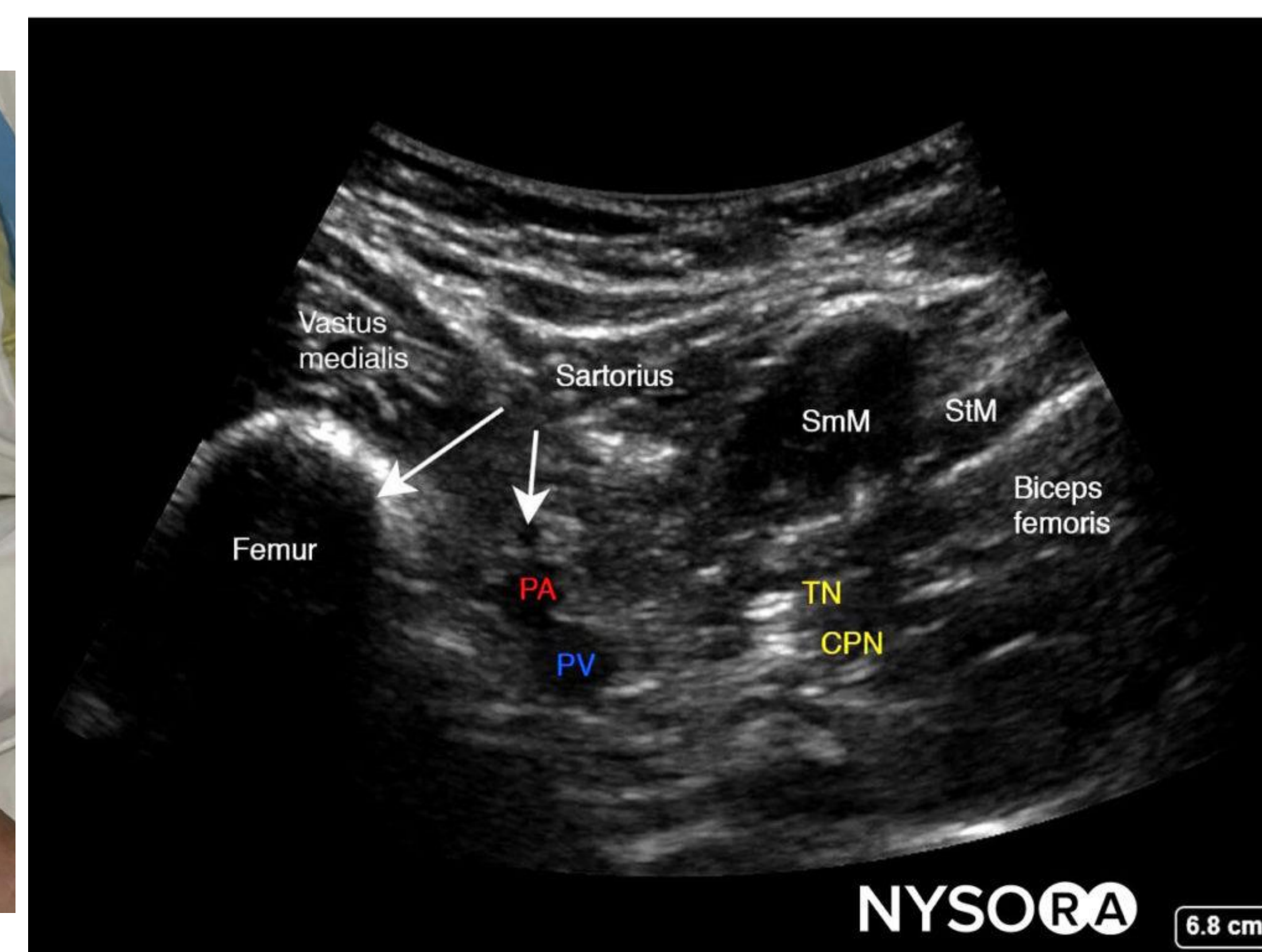


Figure 1: iPACK Block Chapter 24. NYSORA. <https://www.nysora.com/nysora-regional-anesthesia-handbook/chapter24-ipack-block-preview/>.

Catheter tip placement was modified from a classic iPACK target to between the popliteal vessels and sciatic nerve.

Discussion

- Although there has been conflicting data on the efficacy of peripheral nerve blocks on free flap survival, there has been data to support decreased postoperative pain and hospital length of stay.¹
- Popliteal and AC nerve catheters have been used previously
 - **Popliteal catheters:**
 - Overlap with the donor flap surgical field
 - High risk for dislodgement
 - Questionable perivascular relaxation depending on placement location
 - **AC catheters:**
 - Removed from the surgical field
 - Suboptimal dermatomal coverage of the distal lower extremity
- This patient received a “**modified iPACK block**” to provide:
 - Perivascular AND perineural coverage
 - Insertion and securement site that AVOIDS the operative site
 - Support from cadaveric studies have demonstrated injectate spread to the distal sciatic nerve components from the classic iPACK block along the posterior femur⁴
 - **Outcome:** excellent pain control, no catheter dislodgement, adequate flap perfusion

Although there is still evolving data on regional anesthesia in microvascular surgery, **this case shows promise for modified iPACK blocks in lower extremity free flap procedures.**

References

