ASRA PAIN MEDICINE

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PENG Catheter for Staged Total Hip Arthroplasty Revision

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Introduction

• Total hip arthroplasty (THA) is associated with significant postoperative pain that may delay mobilization and recovery.

• The **Pericapsular Nerve Group (PENG) block** targets articular branches of the femoral, obturator, and accessory obturator nerves supplying the anterior hip capsule.

• This technique provides effective analgesia with **minimal risk of motor blockade**.

• Evidence supporting **continuous PENG catheter techniques** remains limited, particularly in complex staged revision procedures.

Methods

• **Ultrasound-guided PENG catheter placement** performed using a curvilinear probe.
• Needle advanced in-plane to superior pubic ramus lateral to psoas tendon. (Figure 2)

• Catheter placed after hydrodissection and confirmation of spread along pelvic brim.
• **Continuous infusion: 0.2% ropivacaine 8 ml/hr**

Case Report

75-year-old with prior THA presenting with progressive hip pain concerning for acetabular loosening and possible infection.

- **Staged THA revision** with removal of acetabular cup and femoral head and placement of an antibiotic spacer.
- Given anticipated postoperative pain, the **acute pain service placed a continuous PENG catheter**.

- Initial bolus: **20 mL 0.25% bupivacaine + 6 mg PF dexamethasone**.
- Continuous infusion: **0.2% ropivacaine at 8 mL/hr**.

- Pain scores **0–3/10 from POD0-4** with **no opioid requirements**.
- No motor blockade; patient actively participated in physical therapy

- Catheter removed on POD4; patient returned to OR on POD6 for reimplantation

Abstract & References

Discussion

• Continuous **PENG catheter analgesia provided effective opioid-sparing pain control** after staged THA revision.
• PENG block selectively targets articular branches of anterior hip capsule while **preserving quadriceps motor function**.
• Periarticular catheter placement in the setting of potential infection requires careful risk-benefit evaluation.
• With appropriate aseptic technique and multidisciplinary planning, **continuous PENG analgesia may be safe in select cases**.

Clinical Images

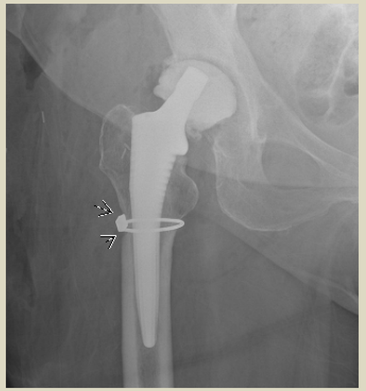

Figure 1. X-ray of post-surgical changes following staged THA revision with antibiotic spacer.

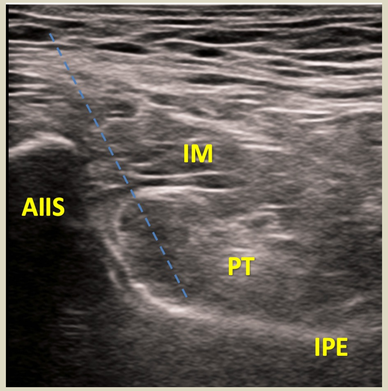

Figure 2: Ultrasound PENG block IM: iliacus muscle; AIIS: anterior inferior iliac spine; PT: psoas tendon; IPE: iliopubic eminence.