

Introduction

- Pericapsular nerve group (PENG) block is a recently described ultrasound-guided technique that is used as an **analgesic block** for acute **pain management after hip fracture**.
- This block targets the articular branches of the femoral, obturator, and accessory obturator nerves, which innervate the **anterior hip capsule**.
- A catheter inserted in the plane between the iliopsoas muscle and iliopubic eminence can extend the analgesic duration.

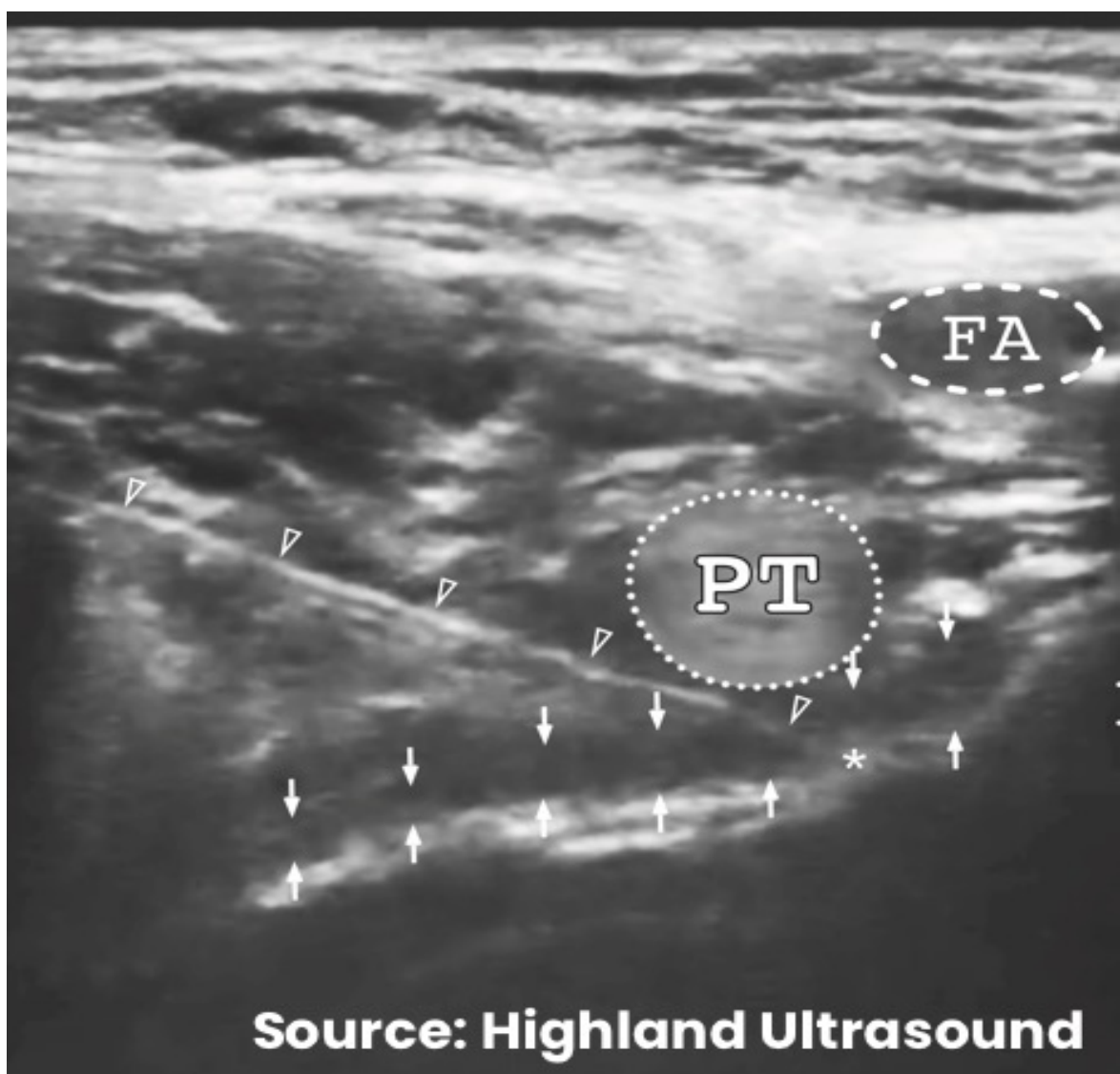
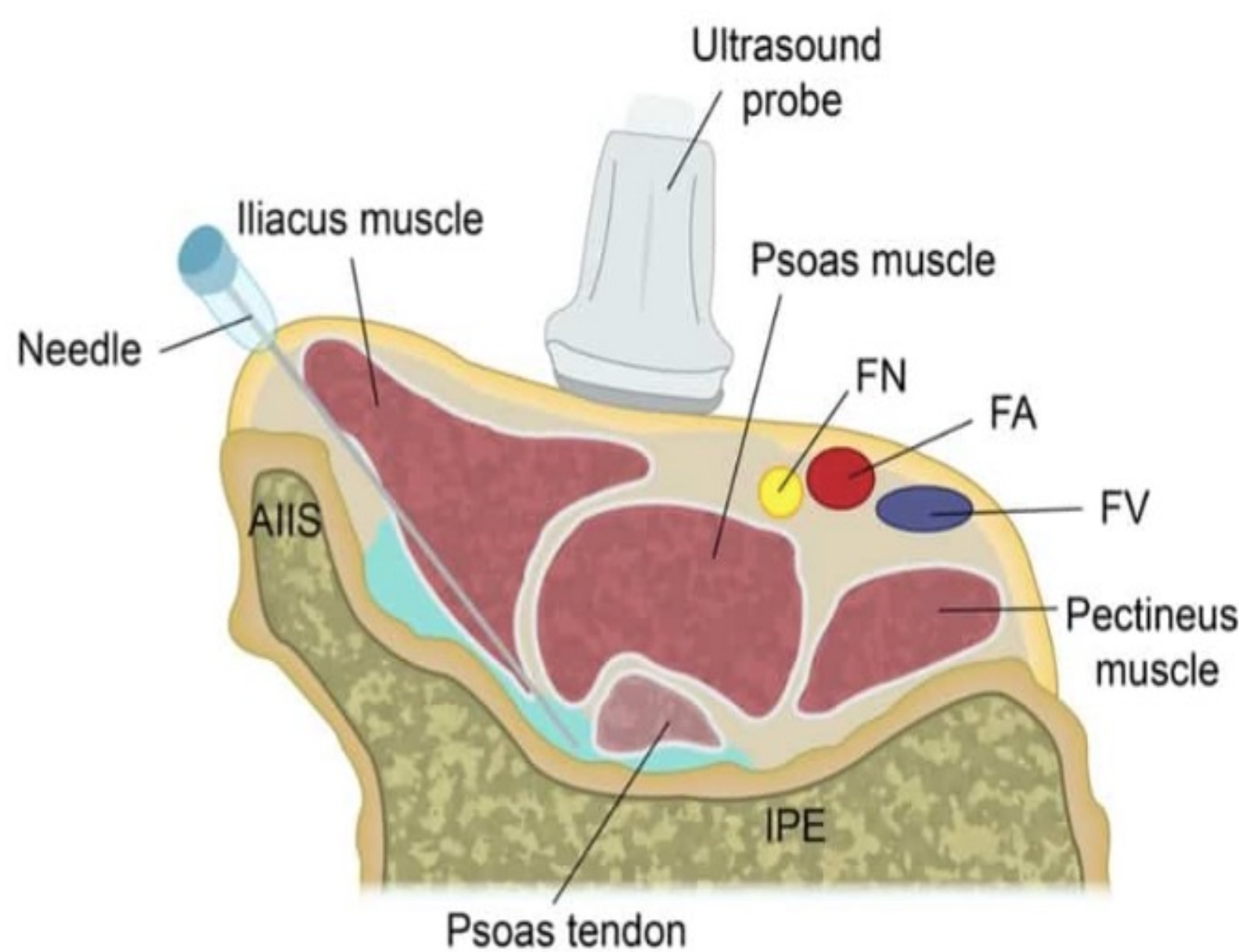
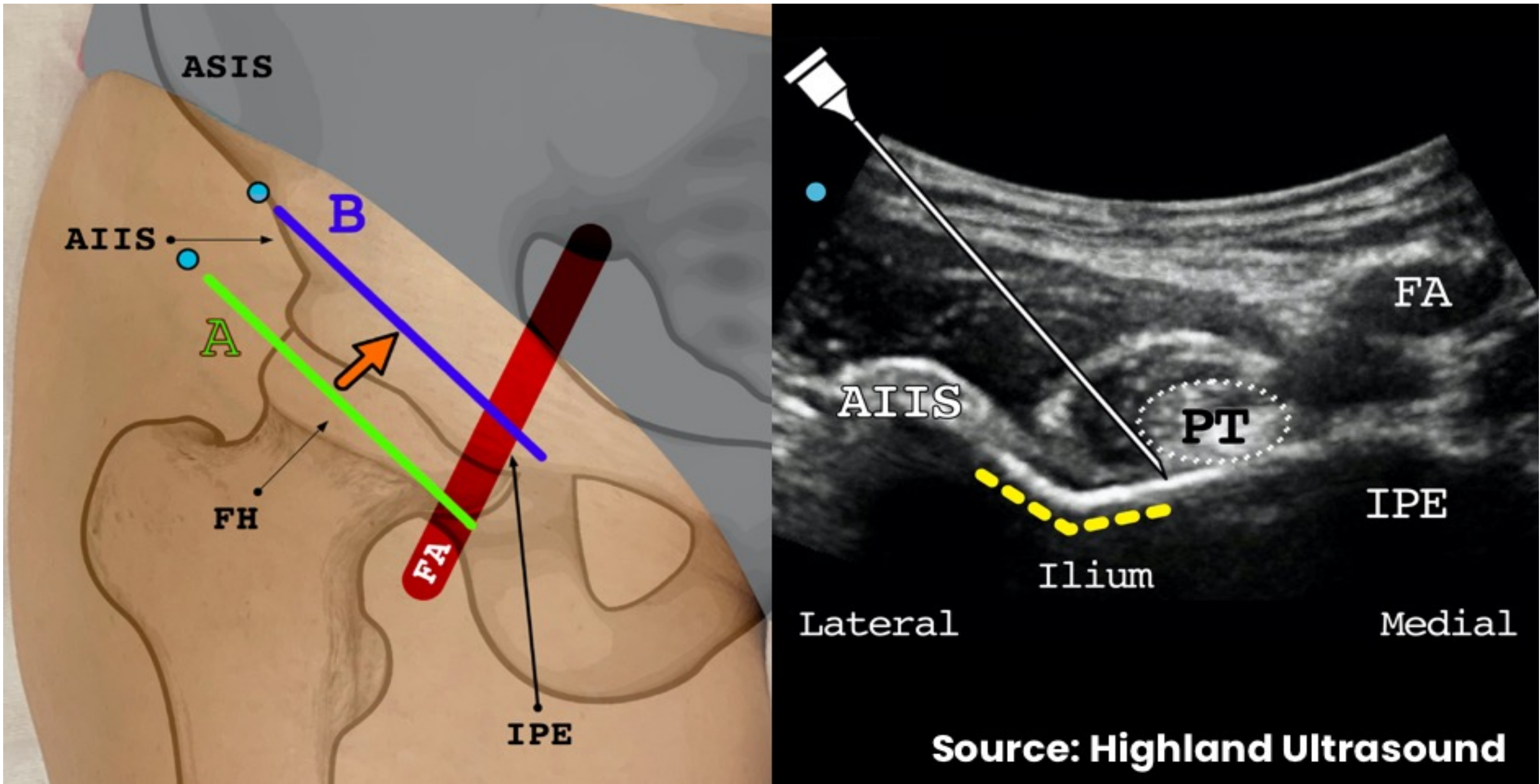
Case presentation

- We describe the technique of PENG catheter placement and its application in five patients presenting with various hip fractures.
- Pain scores were determined by **Numeric Rating Scale** (NRS) prior to catheter placement and during maintenance phases.

	Patient characteristics	Type of fracture	NRS before	NRS after	Day of removal
Case 1	67 years old female, metastatic breast cancer	Right femur fracture	10/10	1-2/10	Day 5
Case 2	64 years old female, metastatic lung cancer	Displaced subcapital left femur fracture	10/10	2/10	Day 7
Case 3	43 years old female, metastatic breast cancer	Right femoral neck fracture	9/10	3-4/10	Day 7
Case 4	68 years old female, osteoporosis	Left acetabular fracture	10/10	3-4/10	Day 6
Case 5	70 years old female, Breast cancer	Left displaced subcapital femur fracture	9/10	3/10	Day 6

Case presentation

- After informed consent, an **20G 83mm Pajunk catheter** over needle was introduced to place its tip next to psoas tendon between anterior inferior iliac spine and iliopubic eminence.
- Once the position of the tip of the needle was confirmed, the needle portion was removed, and an inner cannula was inserted for a length of 7-8 cm in a plane between psoas tendon and pubic ramus.
- Through the catheter, 20 ml of 0.5% Bupivacaine was given as an initial hand bolus.
- An intermittent infusion of 0.2% ropivacaine at 15 ml every 3 hours was started using an Ambit pump delivery system per institutional protocol.



Discussion

- We described 5 cases in which PENG regional catheters were effective for pain management in patients who were unable to undergo immediate surgery for hip fracture repair. **No motor blockade** was encountered.
- Del Buono *et al* found similar results as well in patients presenting with severe **hip fracture** related pain and scheduled for procedure 24-28 hours after PENG catheter placement.
- Fujino *et al* demonstrated the use of PENG catheters for post-operative pain control after **total hip arthroplasty** (THA) with success.
- Duan *et al* stated that continuous PENG block exhibited superior analgesic efficacy after THA compared to continuous fascia iliaca block, promoting recovery of quadriceps strength on the affected side and facilitating early postoperative ambulation.

Conclusion

- PENG catheters may serve as part of multimodal pain management technique for patients with significant fracture related pain and for which minimization of opioid analgesics is ideal **without causing motor blockade**.

References

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