

# Femoral and Fascia Iliaca Nerve Block

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## Disclosures

- None

## Introduction

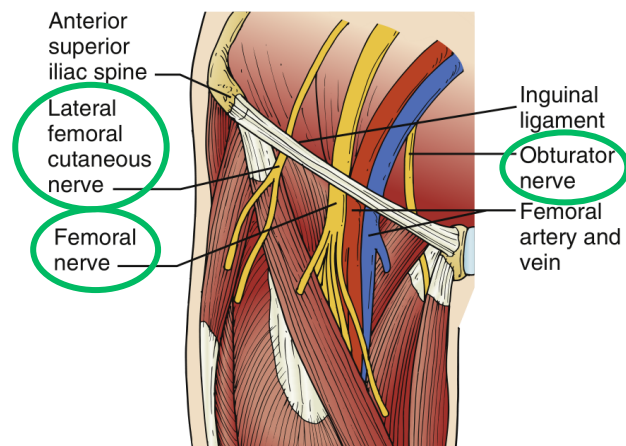
- Landmarking similar to femoral CVC
- High success rate
- Few adverse effects
- Decreased need for pre-operative opioid analgesia
- Decreased delirium

## Patient Population

- Hip fracture
  - Intertrochanteric and subtrochanteric
- Femur fractures
- Patellar injuries

## Contraindications

- Underlying peripheral neuropathy
- Overlying infection
- Local anesthetic allergy
- Patient unable to cooperate/consent



## Evidence

- 11 studies
- Success rate
  - 65-100% (n=1062)
- Delirium
  - RR 0.45 (0.23-0.87), n=207
  - 0% vs 6.45%, n=154

BJA

British Journal of Anaesthesia, 120 (6): 1368–1380 (2018)

doi: 10.1016/j.bja.2017.12.042  
 Advance Access Publication Date: 5 April 2018  
 Review Article

REGIONAL ANAESTHESIA

### Systematic review of the effects of fascia iliaca compartment block on hip fracture patients before operation

J. Steenberg\* and A. M. Møller

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## Evidence

- 9 studies
- Sample sizes 33 to 154 patients
- “nerve blocks decrease the reliance on opiate medications for pain control after hip or femoral neck fractures”

STATE OF THE ART • À LA FINE POINTE

### Regional Nerve Blocks For Hip and Femoral Neck Fractures in the Emergency Department: A Systematic Review

Brandon Ritcey, MD\*; Paul Pageau, MD\*; Michael Y. Woo, MD\*†; Jeffrey J. Perry, MD, MSc\*†

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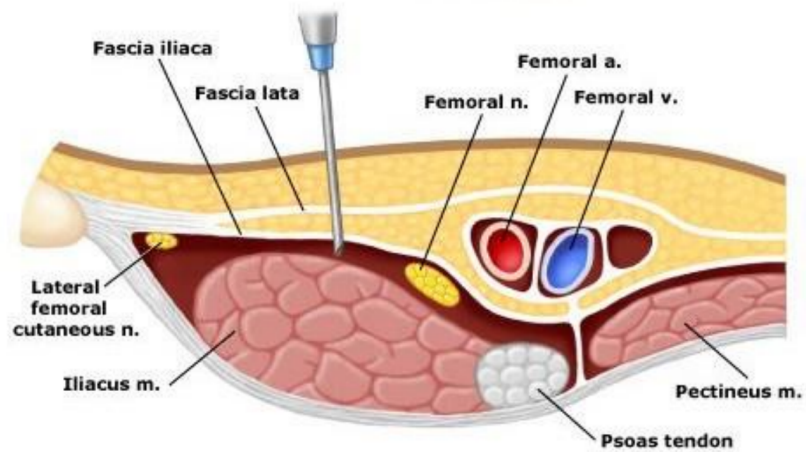
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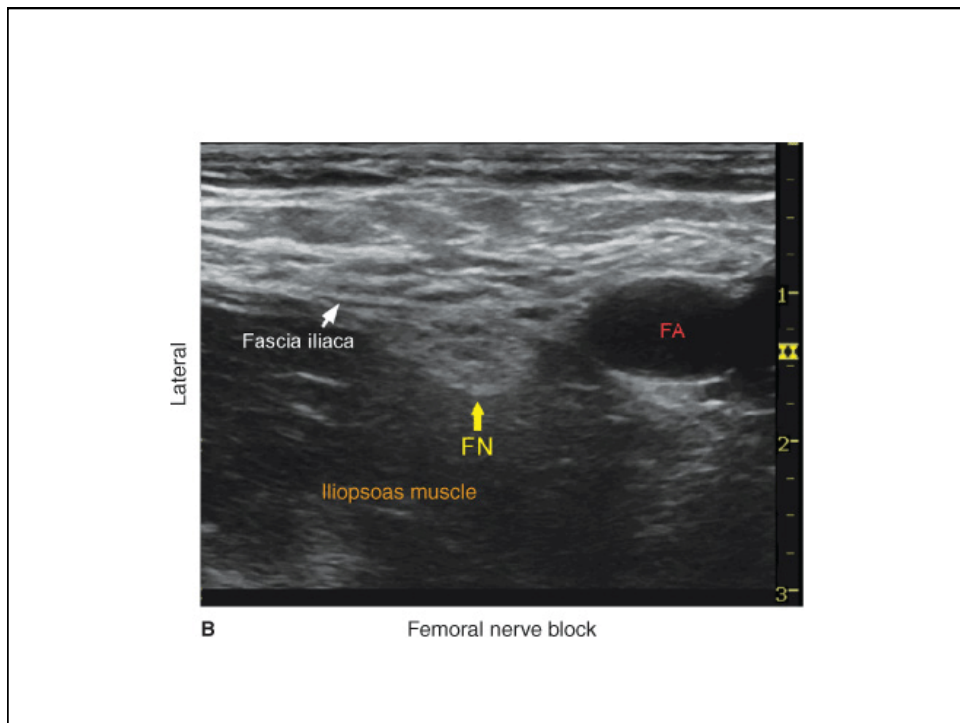
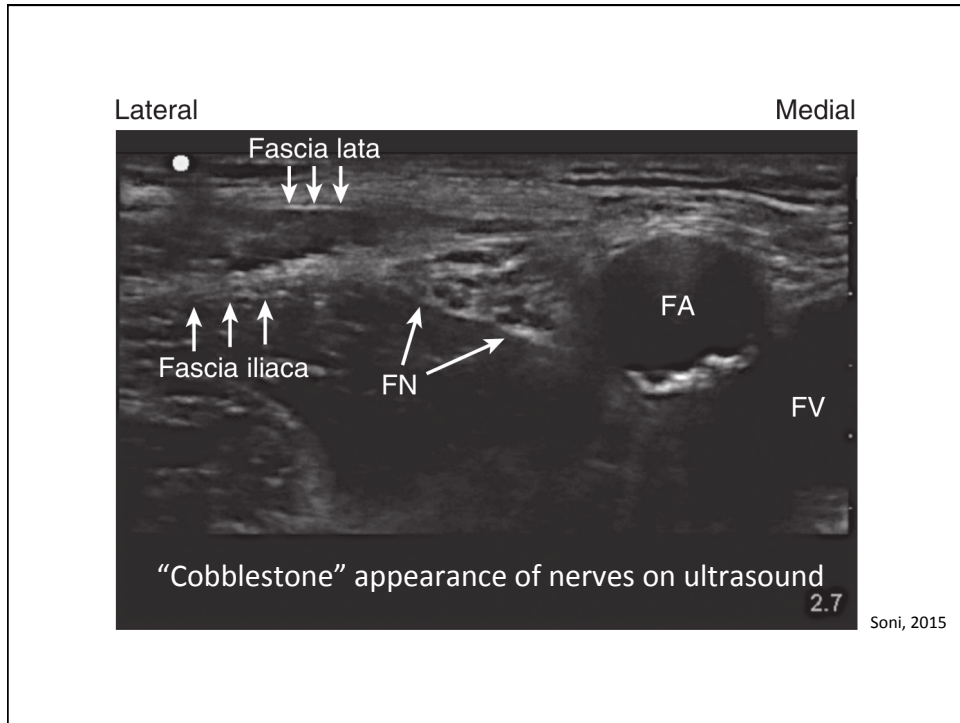
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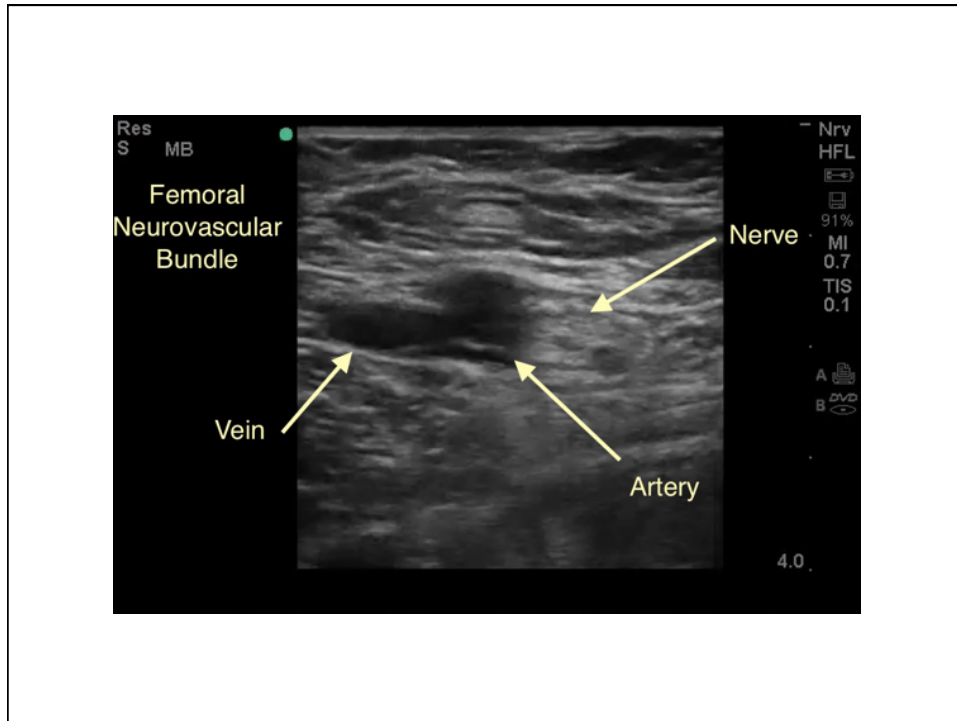
2016;18(1) 37

## Anatomy and Landmarks



<https://www.rcem.ac.uk>





## Femoral Nerve vs Fascia Iliaca

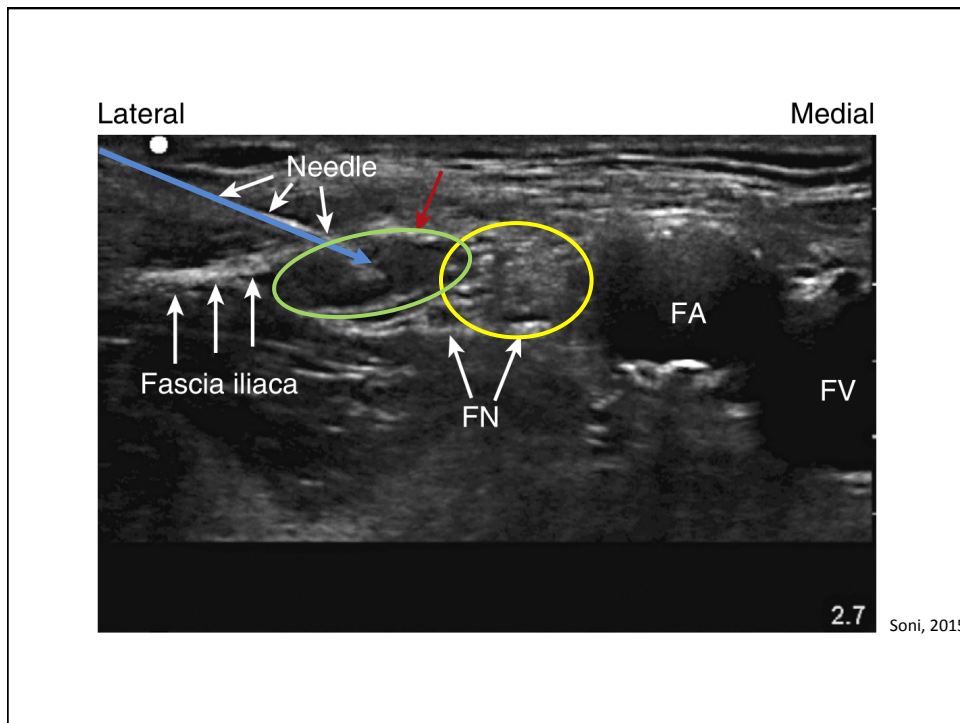
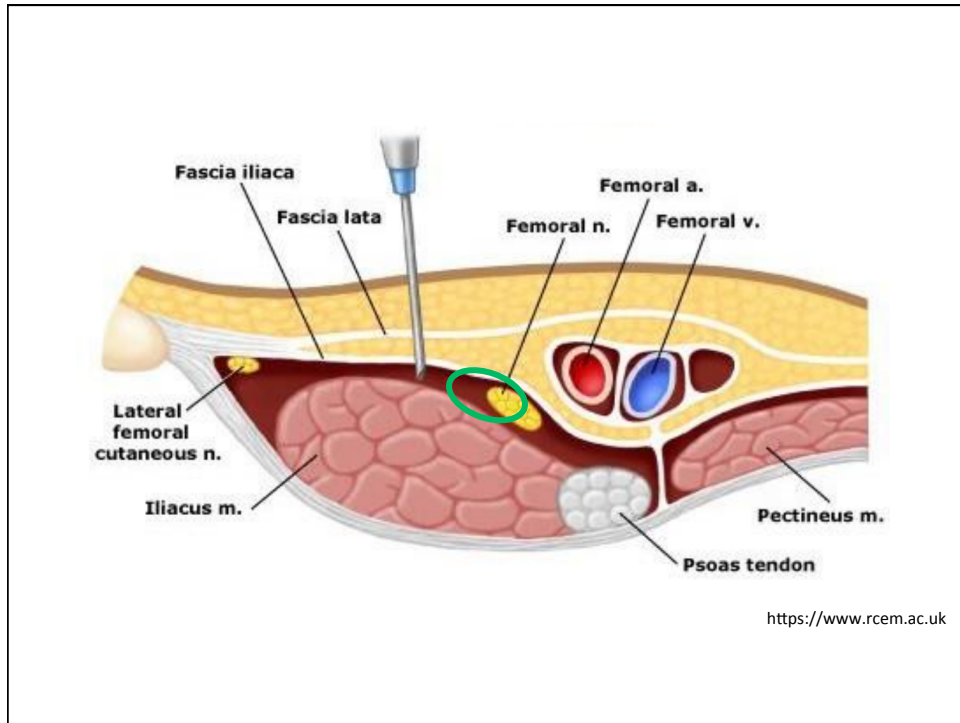
- **Femoral Nerve Block**

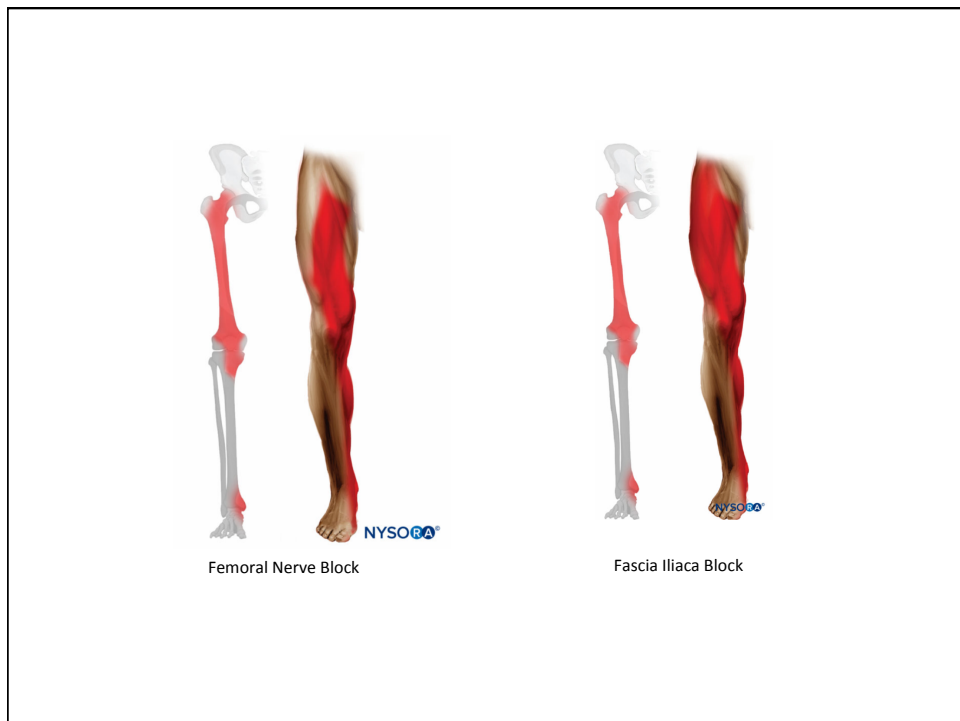
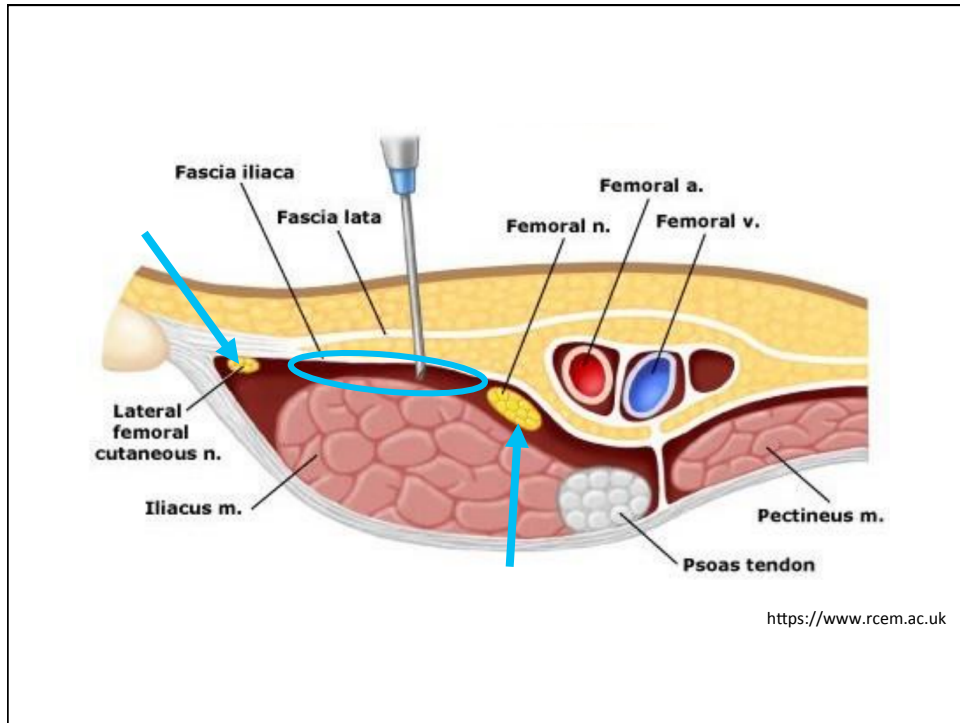
- Anesthetic injected adjacent to femoral nerve

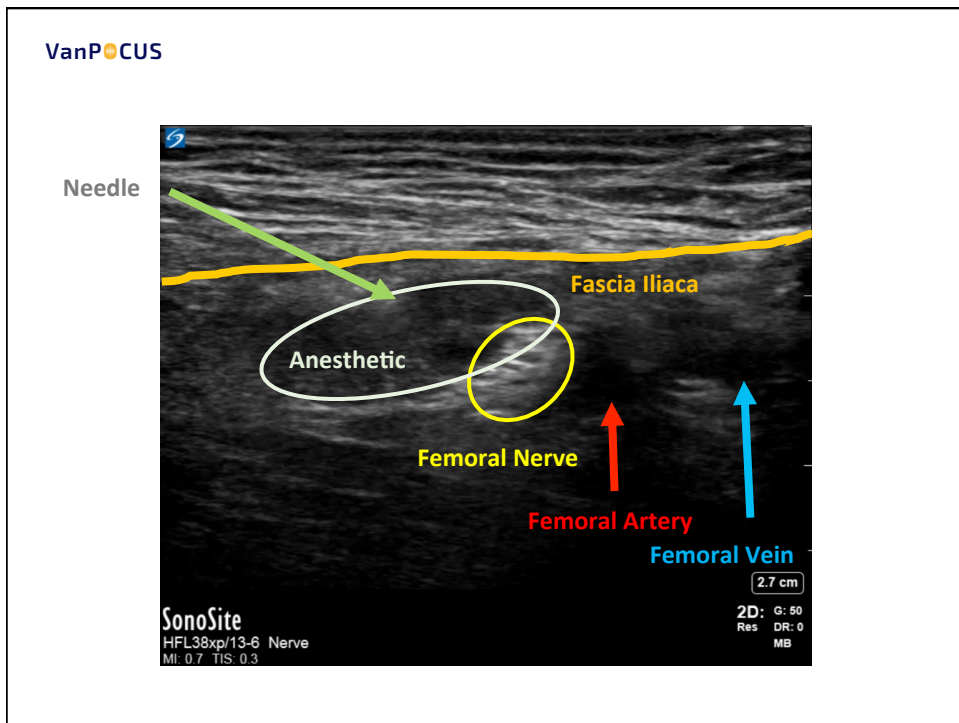
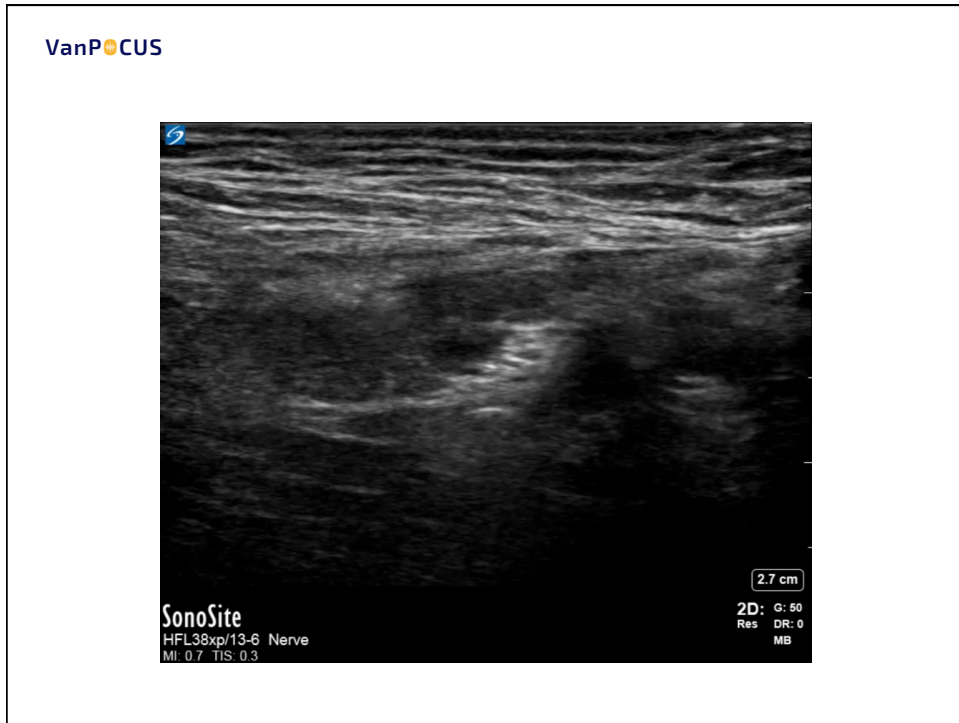
lateral femoral cutaneous nerve

- **Fascia Iliaca Block**

- Larger volume anesthetic injected below fascia iliaca
- Targets both the **femoral nerve** and







## Femoral Nerve Block vs Fascia Iliaca Block

- No good evidence favoring one over the other
- Theoretically, lower incidence of femoral nerve and femoral vessel injury with **fascia iliaca block**

## Risks

- Nerve injury
  - 0.5 – 2.4% (Soni, 2015)
  - Permanent injury very rare
- Vessel injury
- Anesthetic toxicity
- Hematoma
- Masking a compartment syndrome

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**Systematic review of the effects of fascia iliaca compartment block on hip fracture patients before operation**J. Steenberg<sup>a</sup> and A. M. Møller

Department of Anaesthesiology, Herlev and Gentofte Hospital, Herlev, Denmark

<sup>a</sup>Corresponding author. E-mail: jakobsteenber@gmail.com

- 351 patients received fascia iliaca blocks
  - 1.7% hematoma at injection site
  - Nausea
  - No significant complications

**Fascia iliaca compartment block for hip fractures: experience of integrating a new protocol across two hospital sites**Deborah Lees<sup>a</sup>, William D. Harrison<sup>a</sup>, Thomas Ankers<sup>a</sup>, Jamie A'Court<sup>a</sup>, Allan Marriott<sup>b</sup>, Dean Shipsey<sup>c,e</sup>, Andrew Chaplin<sup>d,e</sup> and Mike R. Reed<sup>b</sup>

European Journal of Emergency Medicine 2016, 22:12–18

Keywords: analgesia, fascia iliaca compartment block, hip fracture, nerve block

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- 326 blocks performed, 3 complications
  1. Convulsions from anesthetic toxicity
  2. Tachyarrhythmia and bronchospasm (unclear etiology)
  3. Chest pain (unclear etiology)
- No femoral nerve or vessel injury, no mortality

## Complications

- Case reports
  - Retroperitoneal injection (Shelley and Haldane, 2006)
  - Transitory neuropathy (Atchabahian and Brown, 2001)
  - Bladder puncture (Monzón et al, 2009)

## **Anesthetic Choice**

## Volume

- 20-40ml for fascia iliaca block



- 10-20ml for femoral nerve block



## Choice of Anesthetic

- Lidocaine (1%) + epinephrine

- Max 7mg/kg or 500mg
- 40ml of 1% with epinephrine = 400mg
- 40ml of 2% with epinephrine = 800mg

→ Safer if injected IV  
Careful with dosing

- Bupivacaine 0.25% (2.5mg/ml)

- Max 2mg/kg or 175mg per dose
- 40ml of 0.25% = 100mg

→ Longer lasting (4-8hrs)  
More toxic if injected IV

## Procedure

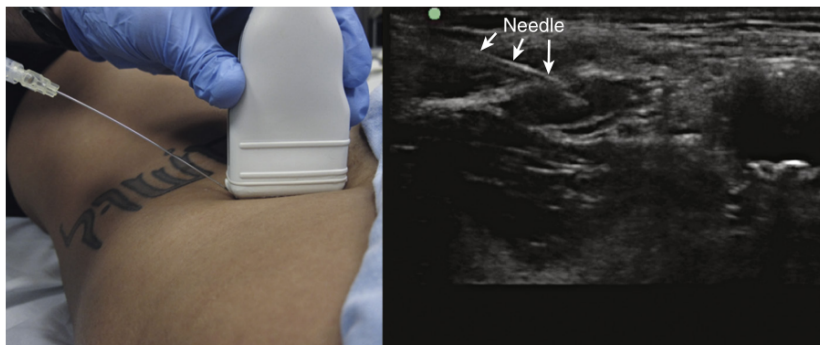
### Equipment

- 2 x 20ml syringes
- 22G spinal needle, 8-10cm
- \*IV extension
- Anesthetic



## Probe

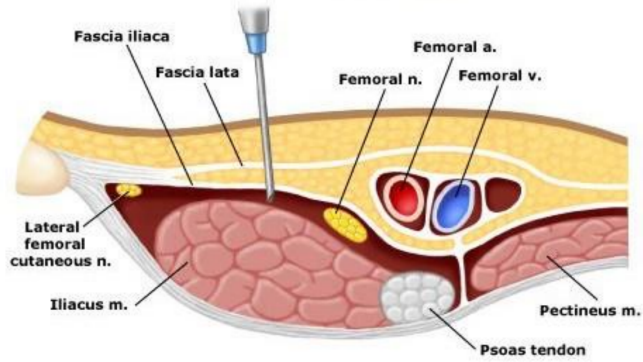
- Linear
- High frequency
- Small parts or nerve preset



In-plane needle visualization

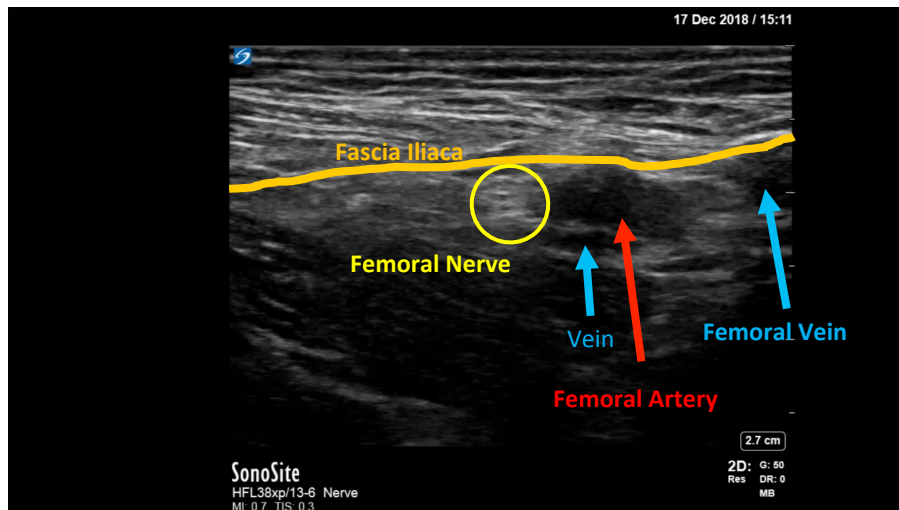
2 pops

1. Fascia lata
2. Fascia iliaca



VanPOCUS

### Fascia Iliaca Block



## Tips

- Slow, low pressure injections
- Stop if injection not visualized
- Stop if pain, paresthesias on injection
- Avoid if underlying peripheral neuropathy
- Small 3-5ml aliquots, hydrodissection
- Aspirate with each injection