

# Fascia Iliaca Block

## Guidelines for Use in the Emergency Department

**Fascia iliaca block is indicated in all adult patients with hip fractures requiring analgesia**

Fractures of the femur – particularly of its neck are a common presentation to Australasian EDs. Patients with this injury are frequently elderly and have significant comorbidities, and the condition is still associated with significant morbidity and mortality<sup>(1)</sup>.

Hip fractures are painful and the provision of appropriate pain relief should be a priority in the ED. Conventional pain relief in this population is often associated with undesirable side-effects and not always effective. In particular, bolus narcotics may cause respiratory depression, hypotension, confusion and constipation, and are impractical for ward administration, where these patients may need to await operative repair.

A number of regional anaesthetic techniques have been described to provide durable and effective pain relief. The traditional “femoral nerve block” or “3-in-1 block” have been practiced for many years, but are not always successful at blocking the relevant regional sensory nerve supply, are less successful in the ED environment without the aid of a nerve stimulator and may jeopardize the neurovascular bundle<sup>(2)</sup>.

A novel approach has been described that seems more effective at blocking both the femoral nerve and the lateral cutaneous nerve of the thigh<sup>(3)</sup>, called the fascia iliaca compartment block. More recent research has validated this technique as effective and safe when carried out by ED junior medical staff without nerve stimulator guidance<sup>(4)</sup>.

## Evidence

- |              |                                                                                                                                                                                                                |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Schmidt AH   | Femoral neck fractures. 1, <i>Orthopedic Clinics of North America</i> 2002;33:97-111.                                                                                                                          |
| Capdevila, X | Comparison of the three-in-one and fascia iliaca compartment blocks in adults: clinical and radiographic analysis. <i>Anaesthesia and Analgesia</i> , 1988;86:1039-1044.                                       |
| Dalens, B,   | A comparison of the fascia iliac block with 3-in-1 block in children. <i>Anaesthesia and Analgesia</i> 1989;69:705-713.                                                                                        |
| Hogh, A,     | Fascia iliaca compartment block performed by junior registrars as a supplement to pre-operative analgesia for patients with hip fracture. <i>Strategies in Trauma and Limb Reconstruction</i> , 2008;3: 65-70. |

The FIB is easy to perform and provides very effective pain relief.  
Pre-prepared kits are in the LP cupboard at Staff Base 1.

## Indications, Contraindications and Precautions

Fascia iliaca block is indicated in all adult patients with painful hip and proximal femoral fractures requiring analgesia. Informed consent should be obtained if possible, as for all ED procedures.

Allergy or anaphylaxis to local anaesthetics and open fractures are the only absolute contraindications to the technique. Other contraindications and precautions are as for any other use of local anaesthetics.

Anticoagulation increases the risk of bleeding and haematoma formation but is not always a contraindication and clinical judgement should be used.

## Equipment

The attached FIB Pack includes: two 20mL syringes, an 18g plain needle, a 25g needle, a disinfecting swab for skin, two 20mL ampoules of 0.25% plain bupivacaine, and a 22g pencil-point lumbar puncture needle.

A nerve stimulator or ultrasound guidance is not required for the safe and effective practice of this method <sup>(4)</sup>.

The dosage of 0.25% plain bupivacaine is 30mL. Consider a reduced dose for the very elderly or frail. The addition of adrenaline or mixture with other local anaesthetics does not significantly alter the success of the technique.

## Method

Obtain informed consent. Uncover the area and prepare the skin (shave/swab as needed). Slight external rotation and abduction is helpful (and is the common posture of these patients) but should not be forced if absent. The site for puncture is found by imagining or drawing a line from the pubic tubercle to the anterior superior iliac spine, dividing it into thirds, and finding a point 2.5cm below the junction of the middle and outer third. This point should also be at least 2.5cm lateral to the femoral pulse, which should also be palpated for safety (see Figure 1 below). Anaesthetize the skin with a small amount of bupivacaine and the 25g needle. When effective, pierce the skin with the larger 18g needle which will serve as an introducer for the lumbar puncture needle. The LP needle is advanced perpendicular to the skin and two “pops” should be easily felt: the first represents the fascia lata and the second the fascia iliaca (see Figure 2 below). Aspirate to ensure the needle is not endovascular, and slowly infiltrate the full volume of local anaesthetic.

Fig 1

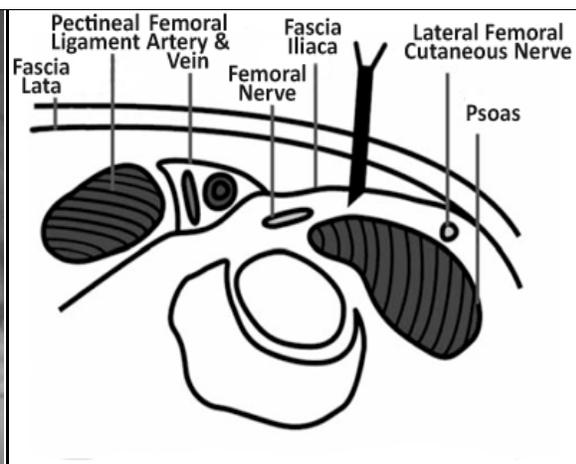
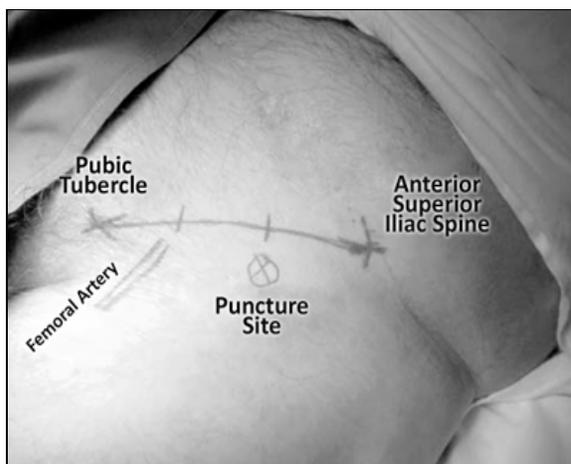


Fig 2

## Monitoring and Complications

In one case series of 187 patients treated by ED clinicians, the only adverse effects from fascia iliaca block were two episodes of transient mild CNS symptoms possibly related to bupivacaine toxicity <sup>(4)</sup>. Symptoms of CNS toxicity include agitation, nausea, blurred vision or tremor. Cardiovascular toxicity is rare but serious and can include hypotension, bradycardia and other arrhythmias; these are a risk of bupivacaine use but have not been reported in series examining this block (See link for management of toxicity guideline). Prolonged monitoring is not generally necessary, beyond dressing the puncture site, ensuring the block has been successful and some screening questions for the above symptoms.