

# Ultrasound-guided fascia iliaca blocks for hip fracture – is the juice worth the squeeze?

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DM drafted the article in discussion with AN, IP, and JSB. All authors made critical revisions and approved the final manuscript.

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Hip fractures require prompt, effective analgesia. However, there is evidence from national audits in the United Kingdom that pain is often managed ineffectively in this population[1].

The fascia iliaca compartment block (FIB) provides targeted analgesia without the systemic risks of opioids and non-steroidal anti-inflammatories[2]. In this technique, a large volume of long-acting local anaesthetic (such as 40ml 0.25% bupivacaine) is deposited beneath the fascia iliaca where it spreads along the fascial plane to variably anaesthetise the femoral, lateral femoral cutaneous, and obturator nerves[3]. Pre-operative FIB for hip fractures is associated with reduced pain, opioid use, delirium, and mortality[2, 3]. As FIB can be undertaken safely by generalist clinicians[4], it is now an established part of Emergency Department (ED) hip fracture management. Most UK emergency physicians have learned to perform FIBs using a landmark technique[5], whereby the fascial plane is identified by advancing a blunt needle through the skin and feeling two distinct “pops” as the fascia lata and fascia iliaca are breached.

In this issue of the *EMJ*, Ghazali *et al* present a new tool for assessing the technical skill of performing an ultrasound-guided FIB[6]. This reflects a shift from the traditional landmark technique to performing FIBs under ultrasound guidance. In the UK, the Royal College of Emergency Medicine published a new curriculum in 2021, which included the requirement that trainees maintain a logbook of ultrasound-guided FIBs[7]. This subtle shift in training emphasis has driven a rapid change in practice as trainees scramble to perform FIBs under ultrasound guidance. There is evidence that ultrasound guidance improves the efficacy of FIB[8, 9], presumably because the local anaesthetic is delivered more reliably into the correct fascial plane[3]. Using a landmark-based technique, it is possible to inadvertently deliver an intramuscular injection into iliopsoas or deposit local anaesthetic in the plane superficial to fascia iliaca, neither of which is likely to be effective.

However, there is little evidence directly comparing these techniques within the ED[9] and system risks associated with abandoning the landmark technique in the absence of such evidence. First, ultrasound-guided FIB takes longer as it requires finding, setting up, cleaning, and returning an ultrasound device as well as using sterile gel and probe covers. Second, FIB may be delayed or not happen at all if there is an expectation that the

procedure must always be performed by someone competent in the ultrasound-guided technique. Finally, a shift in the standard of care towards using ultrasound would make it harder to deliver FIBs in the pre-hospital setting. For maximal utility, a FIB would be delivered at the earliest opportunity and before a patient with an obvious hip fracture is moved to an ambulance scoop, conveyed to hospital, transferred to a hospital trolley, and the injured limb moved in the x-ray suite. There is evidence for the safety and effectiveness of pre-hospital FIB[10], which is currently subject to a multi-centre randomised controlled trial[11], but this could be undermined by a shift away from the landmark method.

Emergency physicians should however learn to perform ultrasound-guided FIBs and prefer this method when capacity and expertise allow. The tool reported by Ghazali *et al*[6] may help improve training, assessment, and standardisation of this technique. Devices using artificial intelligence to augment ultrasound image interpretation may also expand the range of clinicians delivering ultrasound-guided FIB in the future. In addition to the potential benefits for individual patients[8], increasing use of ultrasound-guided FIB might make it easier to implement other nerve blocks within EM practice. There may also be a role for placing FIB catheters in the ED if hip fracture surgery is likely to be delayed beyond the expected duration of action of a single dose of local anaesthetic. Once there is a critical mass of clinicians familiar with both techniques, it may become feasible to compare them directly in a multi-centre randomised controlled trial. In the meantime, there is insufficient evidence to abandon the landmark method, which is a pragmatic means of delivering effective analgesia that is not restricted by the availability of specific equipment or personnel.

Regardless of technique, we should routinely measure and record the outcome of all nerve blocks undertaken in the ED. As patients might only experience pain later (e.g., when moved onto a bedpan), FIB effectiveness is best determined by testing cold sensation over the anterior thigh and knee or the medial aspect of the leg[2]. Determining FIB effectiveness is important for anticipating ongoing analgesic requirements. However, it will also help clinicians whose blocks are consistently ineffective (whichever method they are using) to improve and allow quality improvement projects to move beyond whether a FIB was performed to maximising their effectiveness. Such databases may ultimately facilitate

comparisons of effectiveness between the techniques to inform local guidelines as well as national/international ED practice. In the meantime, we should retain both techniques in our specialty armamentarium until there is clear evidence favouring one over the other in the ED setting.

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